



Illinois DCFS Research Agenda Appendix 1

Research Designs. Research and evaluation questions carry with them different purposes, and the research designs then follow the research purpose. Table 2 summarizes types of research questions, designs, and decision/action points associated with each research project type. IDCFS seeks different types of research information depending on the life cycle of the program, project, or intervention. You may use Table 2 to assist in defining your research question and design, and articulating the potential use of the research study by IDCFS. Studies may have one or more purposes, and they may utilize one or more methodologies in the same study.

Medical research has utilized a framework for supporting evidence-based decisionmaking called the PICO or PICO(T) approach to designing research questions (e.g., Richardson et al., 1995).¹ This framework may be instructive for researchers planning and submitting their research projects to the IDCFS IRB. In the PICO(T) framework, research questions address the **population or persons** of interest relative to the problem focus (P), the **intervention** to support the persons/population in relation to the problem statement (I), the **comparison** being made to persons receiving the intervention in the study (C), and the **outcomes** that are intended to be improved and measured (O). Through the research question, the **type** of study or study design **and timeframe** for completion may also be specified (T). See Figure 1 for a sample PICOT worksheet for your use.

PICOT Framework summary:

- **Populations** (from general to specific)
- **Interventions**, projects, programs, and services
- **Comparisons**, i.e. support for interpreting research findings; causal pathway vs. correlational inference (optional)
- **Outcomes** for children, biological families, substitute caregivers, workforce
- **Type of Study**, **Type of Study Design**, **Time for Completion** (optional)

¹ Richardson, W. S., Wilson, M.C., Nishikawa, J., & Hayward, R. S. (1995). The well-built clinical question: a key to evidence-based decisions. *ACP Journal Club*, 123(3), A12-13. Retrieved from: <https://acpjonline.org/Content/123/3/issue/ACPJC-1995-123-3-A12.htm>

Table 2. Types of Research Questions, Designs, and Decision/Action Point

Question	Appropriate Research Design	Decision/Action Point
What are the needs of a target population, and how do existing services meet or not meet the needs of that population?	Needs Assessment	Design Phase. Decision on services to be designed or allocated to meet the target population needs
What are the individual probabilities of risk for a particular outcome (positive or negative), controlling for covariates associated with the outcome; and how should individual risk probabilities be used to inform service delivery?	Predictive risk modeling data analyses	Service Delivery Improvements. Risk probabilities offer an empirical method to tailor, refocus, or redistribute services to individuals and groups to attain or prevent a particular outcome.
To what extent are services being implemented as intended or contracted?	Performance Monitoring	Interim Monitoring. Interim feedback or direction to be provided in order to ensure delivery of intended services
How well are services being implemented, and what should be done to improve service delivery?	Formative Evaluation	Pilot Implementation. Time-period specific opportunity to redirect program implementation, based on initial findings
How well are the intended goals and objectives accomplished relative to theory of change or logic model articulated? Additionally, what were the successes, challenges, and solutions to problems that were achieved in the program/service implementation?	Process or Implementation Evaluation	Interim Assessment. Time-period specific opportunity to redirect program implementation, based on findings
For targeted outcomes, what impact did the program or service have on the targeted population that received it (without attributing causality)?	Outcome/Impact Evaluation, No Comparison Group	Summative Assessment.² Time-period specific opportunity to reallocate resources or scale-up implementation based on outcomes achieved

² Research questions that have a summative assessment purpose need to include an assessment of fidelity of implementation. These questions assume that the intervention was implemented as intended with a reasonable level of fidelity to well-executed practice.

Question	Appropriate Research Design	Decision/Action
To what extent did the program or services cause targeted outcomes to be achieved or not for the intended population?	Outcome/Impact Evaluation with Effect Sizes on Target Outcomes Compared to Control Group (Note: Randomly assigned comparison group controls for selection bias better than matched comparison group. Matched comparison groups are a viable alternative to random assignment.) ³	Summative Assessment. Time-period specific opportunity to reallocate resources or scale-up implementation based on knowledge that the program or service caused the change in outcomes.
To what extent did the benefits outweigh the costs of implementing particular programs or services, compared to standard service delivery?	Cost Benefit Impact Evaluation	Summative Assessment. Time-period specific opportunity to reallocate resources or scale-up implementation based on the intervention's causal effect on outcomes achieved
Over a longer-term period, what outcomes have been achieved or not achieved, for important sub-groups or controlling for demographic factors?	Longitudinal Population Study	Strategic Planning. Longitudinal analyses are useful in understanding trends with a target population over time to inform future multi-year planning.
What factors are associated with achieving desired target outcomes with a targeted population?	Correlational Analysis	Strategic Planning. Correlational analyses can be used for both short- or long-range planning to understand the extent to which certain factors are associated with a target outcome and population.

³ James Bell Associates developed a Research Design Decision Tree for Title IV-E Waiver Demonstration projects, which is a useful framework for considering approaches to conducting impact evaluations in child welfare. See below:

<https://www.jbassoc.com/wp-content/uploads/2018/03/Research-Design-Decision-Tree-Title-IV-E-Waiver-Demonstrations.pdf>

See also: James Bell Associates (2013). *Conducting randomized controlled trials in child welfare practice settings: Challenges and solutions*. Arlington, VA: Author. Retrieved from: <https://www.jbassoc.com/wp-content/uploads/2018/03/Conducting-RCTs-Child-Welfare.pdf>

Question	Appropriate Research Design	Decision/Action
Did the intervention or policy produce the intended, observed result for which other credible explanations are less likely?	Before/after comparison	Proof of Concept or Impact Evaluation. This could be a statewide policy change that applies to a target population, for which differences in outcomes before and after the policy application are examined.

Figure 1. Well-Built Research Question

Elements of a Good Question:	Your Question:
PERSONS OR PROBLEM: Who are the persons that your research aims to understand? Who are the persons affected by the problem you seek to solve?	
INTERVENTION: What main intervention are you considering? How do you want to help the persons identified?	
COMPARISON: What is the main alternative being considered, if any?	
OUTCOME What are you trying to accomplish, measure, improve, or affect?	
The well-built research question is:	
Type of Question/Study: How would you categorize this question? What is the best study design to answer this question?	
Time for Completion: What is the timeframe needed to conduct the study?	

PICO worksheet adapted from:

Richardson, W. S., Wilson, M.C., Nishikawa, J., & Hayward, R. S. (1995). The well-built clinical question: a key to evidence-based decisions. *ACP Journal Club*, 123(3), A12-13. Retrieved from: <https://acpjc.acponline.org/Content/123/3/issue/ACPJC-1995-123-3-A12.htm>

Guyatt, G. & Rennie, D., Eds. (2002). *Users' guides to the medical literature: manual for evidence-based practice*. Chicago, IL: American Medical Association Press, The Evidence-Based Medicine Working Group.

Duke University Medical Center Evidence-Based Workshop. (2004). *Well-built clinical question worksheet*. Retrieved from <https://mclibrary.duke.edu/sites/mclibrary.duke.edu/files/public/guides/pico-worksh.pdf>