Evaluation of the Research to Policy Collaboration Model

NCT03671434

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Statistical Analysis Plan

Sample Size Justification

Statistical analyses are all powered at least at a 90% level to detect effect sizes of 0.2 or greater (power analysis conducted with *Optimal Design plus Empirical Evidence*).

We aim to enroll a maximum of 300 researchers in the baseline period of this study. The target number of study participants in the full study is 80, including 40 researchers in the intervention and 40 researchers in the control group. This level of oversampling is required because not all researchers will complete all phases of the intervention and oversampling will combat attrition from study participation.

It is anticipated that around 300 researchers will be recruited for the RPC. We believe that at least ¾ (n = 225) of those may participate in the study at baseline, and approximately half of those individuals may complete the study (n = 112), which would over-sample for the current study.

Data Quality Plan

Participants will fill out the surveys directly, minimizing possible errors associated with manually entering data. The surveys will be deployed through *REDCap*, which has integrated data quality procedures, such as an approval routing process for any changes to an active survey to ensure it will not remove or alter existing data. The legislative coding will be completed by trained coders who meet an acceptable level of reliability ($\alpha = .70$). Thirty percent of the sampled legislation will be double-coded to ensure high-quality and reliable data.

Missing data will be handled with multiple imputation because this is best practice when data are not missing at random. This method will be guided by Lee and colleagues' approach to multiple imputation for multilevel data, which reduces and checks for biases in imputed estimates (e.g., tests for convergence and model fit) and suggests that there must be at least 50% complete data and incorporating auxiliary variables highly correlated with the imputed variable (e.g., outcome variables assessed at prior time points).

Data Analysis Plan

All data will be handled in accordance with the consent procedures and IRB protocol. Identifiers will be stripped from the data files for archival storage. Identifying information will be destroyed within three years of the end of the project. De-identified study data will be archived indefinitely. Identifying info will be destroyed within three years of the end of the project.

Analyses for survey outcomes for researchers and legislative staff follow similar patterns and will be conducted in *MPlus* or *SAS*. For researchers, logistic models will be used to model researchers' change from baseline in 1) knowledge of current lobbying restrictions, 2) belief that engaging with policymakers would improve their own research, and 3) level of policy engagement. For legislative staff, generalized linear models will be used to model the trial groups on how much congressional offices value URE for 1) conceptual, 2) instrumental, and 3) tactical purposes

For legislative offices, we will assess the impact of the RPC on both proposed and enacted bills. Since the continuity of relevant legislative activity may be inconsistent between short intervals due to Congressional recesses (e.g., 3-month survey timeframes), legislative activity will be analyzed and compared between two time periods: one-year before RPC implementation (baseline) and six months following RPC implementation (post-assessment). The indicators for evidence use in this

project will reflect having used research evidence language in legislation related to the wellbeing of children and families, as determined by trained coders, on which the office is listed as a sponsor or original cosponsor. This outcome is dichotomous: did or did not sponsor or originally cosponsor legislation that was coded as having used research evidence. Therefore, logistic regression analyses will assess use of research evidence. Given the cyclical nature of Congress, it is expected that overall legislative productivity will be different at baseline than at the post-assessment. Thus, the control and intervention groups will be compared to one another at each timepoint separately. They will be compared at baseline to establish if there is a difference in sample, perhaps due to self-selection biases. If there is no difference at baseline, we will compare the use of research evidence in legislation among control offices and intervention offices at the post-assessment time period. We will regress dichotomous post-assessment use of research evidence on group assignment. Similar logistic regressions will be conducted on the probability of an office writing 1) a bill related to the wellbeing of children and families and 2) a bill that did not include URE research evidence terms.