Risk Assessment Indicator Data Analysis Plan Notes

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In any data analysis plan there are two phases to the plan: 1) The initial data collection and analysis and 2) The validation of the data and its use to make certain that how the data are used is appropriate. Although this plan is geared to dealing with risk assessment indicators, the overall plan is applicable to any data analysis plan in general. The validation phase is not followed through in many monitoring systems, especially when it comes to licensing or regulatory compliance systems. It is hoped that this will change as the field moves forward with the building blocks of regulatory science.

Initial Data Collection Phase

There are several items to consider in developing the initial risk assessment indicator analysis plan. The first is to identify those indicators where outcome (O) or results data are available. By having both the risk assessment indicator (R) (process data) available and the outcome/results (O) available it will be able to determine if there is any type of relationship between the two. This has occurred for approximately 5 risk indicators already dealing with staff turnover, fiscal accountability, compliance history, complaints, etc. In the data plan, these correlations would constitute the first level of analyses. It would be more exploratory in nature to see where the relationships are.

Once the significant relationships are identified via the correlational analyses, the second step would be to either conduct a factor analysis or a regression analysis. This will be dependent upon the sample size and the number of risk indicators identified in step 1. If there are sufficient observations path analyses could also be done.

O = Outcomes or Results ***F = Factors***

R = Risk Assessment Indicators

Correlational Analyses:

	R1	R2	R3	R4	Rn….
O1					
O2….					

Factor Analyses:

F1 = R1 + R2 + R3 + Rn….

F2 = R4 + R5 + R6 + Rn….

F1 + F2 + Fn….

Regression Analyses:

O1 = R1 + R2 + R3 + Rn….

Lastly, the database can be an excel spreadsheet, csv formatted for SPSS processing. There would be outcome variables followed by the risk assessment indicators along the horizontal axis with grantees along the vertical axis.

<u>Validation Data Phase</u>

The validation data phase has four validations that can be performed

1. Standards Validation
2. Measures Validation
3. Outputs Validation
4. Outcomes Validation.

1. Standards Validation: with this validation the specific risk assessment indicators would be compared to the agreed upon research standards (Std) that have been accepted in the research literature as the go to standards. For example, in child care licensing the agreed upon standards in the field are the *Caring for Our Children* (CFOC) national health and safety standards. Specific rules would be compared to CFOC to determine how well they size up side by side. These analyses would be more qualitative than quantitative involving a content analysis to see where there is agreement and gaps in the standards. This could be done on a standard by standard basis or looking at the standards as a whole and expressed as a percent.

R1 x Std; R2 x Std; R3 x Std; Rn x Stdn, etc…..

2. Measures Validation: with this validation the key element is the reliability of the measuring tool. If there are sufficient data, a Cronbach Alpha could be generated to determine the stability of the tool. If there are not sufficient data to perform this level of analysis, then random portions of the the tool can be compared with other portions of the tool to determine

consistency. Or lastly, the scores on the risk assessment tool can be compared to decisions being made on the basis of the scores to determine consistency. For example, in the licensing research literature this is done when comparing licensing key indicator tools with comprehensive tool data collection and the respective licensing decision being made to conduct a full versus abbreviated inspection. Or in the care of risk assessment tools, where scores on the risk assessment tools are compared to the licensing decision making. If reliability analysis is not used via Cronbach Alpha, then correlational analyses would be appropriate, and possibly factor analyses.

3. Output Validation: with this validation comparisons are made between the target variable and a more standardized quality element in the research literature, such as licensing or Quality Rating and Improvement Systems (QRIS). With the case of risk assessment indicators and what is the ultimate grantee's success potentially looking at scores with the risk assessment indicators and comparing it to CLASS scores may be appropriate to validate. Correlational analyses would most likely be used here.

4. Outcome Validation: this is generally the most difficult validation study to perform because it involves obtaining specific outcome data either from the program (compliance histories) and the clients within the program, such as health & safety information (immunization status) or developmental outcomes (child development progress). This can be very labor intensive in order to collect these data. With risk assessment indicators it would be a deep dive into compliance histories dealing with injury data and developmental data and comparing it with the specific risk assessment indicators to determine if there are a specific group of risk assessment indicators that always statistically predict when grantees will perform less well when these risk assessment indicators occur. Regression analysis or potentially path analysis would most likely be used here.