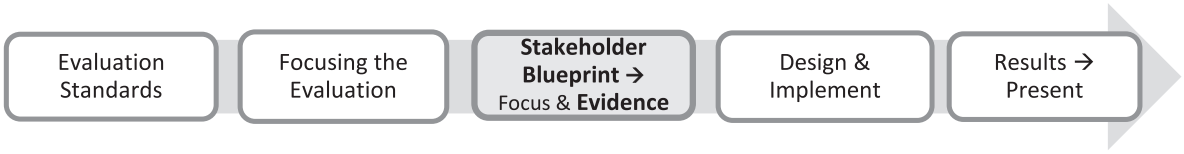

Blueprinting Evaluation Evidence: Data Sources and Methods

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The Challenge

Your residency program has shifted to a virtual interview process. This necessitates numerous changes, ranging from virtually introducing applicants to your program and meeting current residents to preparing faculty for the new interview process. Your program is proud of its track record of recruiting residents who are a good fit for the program and decides to keep the same overall method for ranking applicants. In preparing for recruitment, strong concerns were raised as to whether the virtual interview processes will continue to yield high-quality residents who fit your program as evidenced by: aligning their interests with the program's mission, having robust examination scores, embracing the values of the profession, being a good team member, and demonstrating a capacity to learn. Given this evaluation focus (ie, fit-for-program) and stakeholder-identified evidence (eg, aligned interests), what sources of data and methods of data collection do you need to evaluate your new virtual interview processes?

What Is Known

Data should serve the information needs of stakeholders (utility) while also being accurate, feasible, and fair/ethical.[1] Consider an adopt, adapt, and/or author (3A's) approach to data collection. Can you *adopt* data collection using existing surveys, performance data, and examination scores? Can you *adapt* an available tool to include items specific to your evaluation focus and evidence sought (eg, add an item on teamwork or alignment with mission to an existing rating tool)? Or can you *adapt* an available data set with a new analysis? For example, will you rate applicants' medical school leadership roles (as previously found leadership experiences correlate with a good "fit" with your residency mission) or analyze comments on interview rating forms? Your last resort is to *author* a new data collection strategy, *if* it is feasible (eg, realistic, cost-effective) and accurate (eg, valid, reliable). If you must author a new strategy, it should provide evidence that is not otherwise available.

DOI: http://dx.doi.org/10.4300/JGME-D-20-01274.1

Rip Out Action Items

1. Adopt or adapt an existing data collection method that matches the evaluation focus and stakeholder evidence priorities before authoring a new data collection approach.
2. Create a data collection blueprint to identify gaps and potential unnecessary redundancies in data collection approach.

How You Can Start TODAY

1. **Blueprint key evidence by data source and collection method** (see TABLE). Identify, then plot in an evidence blueprint, which existing data sources and collection methods provide evidence acceptable to all stakeholders.[2] Identify gaps in your blueprint. Are there any existing data sets that contain elements of interest (adopt) or that you can analyze (adapt) to meet the evidence gap?
2. **Search the literature.** A literature review can reveal other evidence to fill gaps. Existing tools and resources are often available and can be adopted or adapted to meet your evidence gaps.
3. **Consider the data source.** Rather than seeking additional data, can you use existing data that you have not previously considered? Going back to the example, have applicants from a particular medical school or with a specific set of experiences proven to be better aligned with your program's mission? Are residents more accurate raters of certain applicant attributes than faculty? Deliberate on the congruence between blueprint gaps and the feasibility, accuracy, and utility of obtaining information from each data source.
4. **Carefully consider a new data collection method.** What can you realistically do that will provide accurate information targeted to your blueprint gaps? Creating a survey is appealing but obtaining

TABLE
Example of Data Collection Blueprint for Evaluating Virtual Interviewing

Data Sources × Methods → Applicant's Evidence That Matters ↓	Existing Data Sources			Methods		
	Applicant Files and Contacts	Interviewer Rating Form Comments	Applicant on Time? Follow-ups?	Data Mining	Interview Rating Forms	Observe, Rate, and Track
Goals align with program mission	x	x	x		x	x
Informed about program	x	x	x		x	x
Team player	x	x		x	x	x
Contributes to quality, safety	x	x			x	x
Professional, timely in all communications	x		x		x	x

reliable data can be quite challenging.[3] Observational data can be analyzed, if prospectively tracked, to examine behaviors. In the virtual interview example, consider the communication between applicants and the program coordinator or tracking check-in times for virtual interviews.

5. **Check the data timeline to consider what data are to be collected from whom and by when.** Once you have your blueprint, you can assess its feasibility *before* you implement it. Are there gaps you can accept? Can you eliminate any redundant data source(s) or collection method(s)?

What You Can Do LONG TERM

1. **Use an evaluation model** to guide the evidence collection. For instance, the Kirkpatrick Model provides a useful framework to assure that your data goes beyond applicants' reactions. Do applicants demonstrate learning (eg, build on what was learned from websites in subsequent interactions) or change behaviors during the interview (eg, decreased anxiety)?[4]
2. **Look for ways to expand the evaluation team.** Your program coordinator has expertise in tracking and monitoring data collection. Senior or chief residents can help with data collection. Clinical competency committee or annual program evaluation members have experience in data analysis and interpretation. Formally trained medical educators can add their evaluation expertise.
3. **Increase repertoire of methods to collect and analyze data.** The blueprint approach can be applied to improve existing evaluations or to evaluate a new educational initiative. Seek out your sponsoring institution's education office and attend educational sessions through your professional societies for practical resources and training sessions to enrich your approach to data collection.

Resources

1. Balmer DF, Riddle JM, Simpson D. Program evaluation: getting started and standards. *J Grad Med Educ*. 2020;12(3):345–346. https://doi.org/10.4300/JGME-D-20-00265.1.
2. Simpson D, Riddle JM, Hamel DL Jr, Balmer DF. Blueprinting program evaluation evidence through the lens of key stakeholders. *J Grad Med Educ*. 2020;12(5):629–630. https://doi.org/10.4300/JGME-D-20-01015.1.
3. Gelbach H, Artino AR. The survey checklist (manifesto). *Acad Med*. 2018;93(3):360–366. doi:10.1097/ACM.0000000000002083.
4. Riddle JM, Halverson A, Barnes M. Getting the evaluation focus clear: a shared understanding of what is being evaluated. *J Grad Med Educ*. 2020;12(4):499–500. https://doi.org/10.4300/JGME-D-20-00701.1.

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