

Justify Conclusions/Data Interpretation and Use

Why is this important?

Data interpretation is typically the role of the “researcher/evaluator” but involving stakeholders can lead to a deeper understanding of the findings, and more effective use of the data. If stakeholders agree that the conclusions are justified, they will be more inclined to use the evaluation results for program improvement. This module considers a process to interpret health workforce training data in collaboration with stakeholders.

STEP 1: Analyze and synthesize findings

Data analysis will be guided by the evaluation plan developed from your logic model and evaluation framework (detailed in Modules 2 and 3).

The analysis phase includes the following tasks:

- Organize and classify the quantitative and qualitative data collected. This includes the steps of cleaning data and checking for errors.
- Tabulate the data into counts and percentages for each indicator.
- Summarize data and include stratification if appropriate. At the trainee level you may stratify by trainee type, cohort, or practice site. For clinical data you may stratify by provider team, practice site, or patient demographics.
- Compare results with appropriate information. Depending on your evaluation design you may make comparisons over time using the same indicator, or may compare locations, practices, or cohorts of trainees. You may also compare results to established targets or benchmarks.
- If using mixed-methods analysis, take important findings from one source and compare to other sources.
- Present the results in an easily understandable manner, and tailor it to your audience.

Mixed-Methods Example

If you were asking these questions: Do trainees feel prepared to provide care to complex patients in a team-based environment? Do patients feel care is coordinated across team members?

A mixed-methods approach could pair the results from patient focus groups with results from trainee surveys on providing care in an interdisciplinary team-based environment. These results might also be paired with clinical outcomes for the patients such as patient blood pressure or depression screening scores.

Mixed-Method Analysis Example within health workforce training program: Transformed Primary Care through Addressing Social Determinants of Health

A health workforce training program has decided to focus on preparing students to address social determinants of health. The metric of interest for this program is assessing improvement of housing status, as the safety-net clinic has a large uninsured and transient population. As part of the program, evaluators are collecting data through a patient satisfaction survey, through focus groups with trainees at the beginning and end of the program, and through chart abstraction of the EHR. For the mixed-method analysis, they planned a pre-post quantitative analysis of the number of clinical training site patients who have “unstable housing” status. The focus groups with trainees provided information on resident experience in assessing and supporting patients without housing by connecting them to social work staff as part the interdisciplinary team. This was combined with data from surveys on patient experience accessing care and services. The combination of data sources will inform the quantitative data on “improved housing status.” If success is not as high as expected, the data from the student focus groups may indicate barriers, and the data from patients may provide information on ways the patients received assistance in improving access to housing. If housing status was not improved, patient feedback might indicate if other support was provided.

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STEP 2: Setting program standards

Articulate the values that will be used to consider a program “successful,” “adequate,” or “unsuccessful.”

Program standards are the metrics by which the evaluation results will be assessed after completion of program data analysis. Using the example of a program that is addressing social determinants of health, consider whether the result of a 5 percent or a 50 percent increase in patients who have stable housing is a meaningful result. The purpose of including stakeholders in setting benchmarks is to understand what the users of evaluation findings consider meaningful. A faculty member, student, and patient may have different interpretations of whether increasing the percent of patients who have stable housing is successful at a 5 versus 50 percent level. Including stakeholders in developing the benchmark at the outset of the evaluation will set the team up for consensus on interpretation of findings at the end of the analysis.

- Think about what informs the choice of benchmarks. In addition to the value and interpretation of results by stakeholders, consider the external context that may inform the development of the benchmark.
- What is the average performance at similar practices/organizations?
 - Are there standards that the clinic is being held to by external funders?
 - Are there preset institutional goals for the metric?
 - What is realistic to achieve in the timeframe of the evaluation?

What is the approach if there is no benchmark?

Not all evaluation metrics will have an external benchmark or even a baseline for which to compare results. In cases where there is no external benchmark, consider whether data collected from multiple clinical sites within the organization can be a reference point. For example, if using a provider or trainee satisfaction survey that was tailored to the organization, comparison with other organizations may not be available but comparison across departments or sub-groups may provide insights to the data. When benchmark data is not available, conversation with stakeholders becomes a more important way to build consensus on what is meaningful change during the project period, and what can be achieved with time and resources available.

Example benchmarks per objective

OBJECTIVE 1: Develop skills to implement, evaluate, and teach practice transformation and population health among trainees.

Program standards:

- 100 percent of trainees will complete a practice transformation or population health project.
- Trainees will rate their satisfaction with the program components an average of 7 on a 10 point Likert scale.
- Trainees will have improved one clinical measure during the population health project.

OBJECTIVE 2: Evaluate quality and cost of care within the clinical training environments used by the trainees.

Program standards:

- Improve practice-level measures for two clinical quality measures over a 2-year period.
- Review use and cost data for 20 percent of patients in clinical training environments and include as part of trainee data review for population health.

STEP 3: Interpretation of findings and making judgements/recommendations

Judgments are statements about a program’s merit, worth, or significance that are formed when you compare findings against one or more selected program standards. As you interpret data and make recommendations, be sure to:

- Consider issues of context.
- Assess results against available literature and results of similar programs.
- If multiple methods have been employed, compare different methods for consistency in findings.
- Consider alternative explanations.
- Use existing standards as a starting point for comparisons.
- Compare actual with intended outcomes.
- Document potential biases.
- Examine the limitations of the evaluation.

The interpretation process is also aided by review of findings with stakeholders. Presenting the summarized data to stakeholders helps validate the conclusions and may offer new insights to the results. Most importantly it creates buy-in of the findings and any action steps to follow.

Engaging patients in interpretation

Patient perspectives and satisfaction are one component of assessing ability to meet the Three Part Aim. Not all health workforce training programs will include patient experience data, but those that do may be curious about how to involve patients in data interpretation. Sharing results with patients may be part of your project plan to include diverse stakeholder perspectives. Information might be shared through live presentation at a patient advisory group or patient advisory council meeting. Alternatively, summary results could be included in an infographic and posted at clinics or included in a patient newsletter. Although the latter option would limit direct feedback, it conveys that the organization values communication with patients, as well as its research and quality improvement efforts. For more information on patient advisory groups see the [Patient and Family Advisory Council Getting Started Toolkit](#).

Interpretation Guide

Example: Transformed Primary Care through Addressing Social Determinants of Health

Outcome of interest: Assessing trainees' role in addressing social determinants of health through improved housing status of patients.

POINTS TO CONSIDER IN INTERPRETATION OF DATA	SPECIFIC EXAMPLE FROM A HEALTH WORKFORCE TRAINING PROGRAM
Consider limitations to the data. Check data for errors.	The housing status data are pulled from an EHR. Consider limitations such as: <ul style="list-style-type: none"> • Are patients included if the status is left blank? • Are only those patients who saw a physician included? For example, if patients came in for lab tests or immunizations only, were they excluded? Was the analysis limited to subgroups (e.g., cases with complete data, patients receiving medical services)? Ensure that your findings and interpretation are limited to the data available and are not overstated.
Consider issues of context when interpreting data.	Were there changes in housing availability at local shelters or other policy changes that would affect the ability of increasing stable housing during the time period of study? Were there changes in the relationship with the local housing director, and collaborative meetings with community partners that would affect how trainees interacted with clinic to support housing for patients during the program period?
Assess results against available literature and results of similar programs.	Are there studies on the ability of interdisciplinary primary care teams to address unstable housing? Is there related literature that might be useful for reference? For example, similar studies conducted in other practice arrangements, other medical settings, etc.?
If multiple methods have been employed, compare different methods for consistency in findings.	How does patient reporting of housing status compare in the EHR to information collected through a log maintained by practice social workers? To what extent do the results from the EHR and provider logs tell a similar or different story about patient housing status?
Consider alternative explanations.	If findings are different between EHR and social work log, explore underlying reasons.
Use existing standards as a starting point for comparisons.	Use standards for discussion but consider how the patient population or the program may be different from the standard. In the case of housing, standards may not be available, but the program may compare health outcomes between those with unstable housing to those that have achieved stable housing in the program.
Compare actual with intended outcomes.	If program goal was improvement of 50 percent, but 10 percent was achieved, use the mixed-method analysis of patient survey and student focus groups to explain the difference. Explore any unintended outcomes of the program.
Document potential biases.	For example, noting that students only worked with women and children because of the clinic hours.
Examine the limitations of the evaluation.	Document the time frame, sample size, missing data, and resource constraints that may limit data interpretation.

RESOURCES

- Patient and Family Advisory Council: Getting Started Toolkit. Created by Meghan West and Laurie Brown, Skunks Team. BJC Healthcare. Available at: http://c.ymcdn.com/sites/www.theberylinstitute.org/resource/resmgr/webinar_pdf/pfac_toolkit_shared_version.pdf
- AHRQ Health Information Technology Evaluation Toolkit. Available at: <https://healthit.ahrq.gov/sites/default/files/docs/page/health-information-technology-evaluation-toolkit-2009-update.pdf>
- IDRE Statistical Consulting Group Web site. Available at: <http://www.ats.ucla.edu/stat/>

TOOL 5.1

Justify Conclusions Worksheet

Source: CDC Program Evaluation for Public Health Programs: Self-Study Guide

	QUESTION	RESPONSE
1	Who will analyze the data (and who will coordinate this effort)?	
2	How will data be analyzed and displayed?	
3	Against what standards will you compare your interpretations in forming your judgments?	
4	Who will be involved in making interpretations and judgments and what process will be employed?	
5	How will you deal with conflicting interpretations and judgments?	
6	Are your results similar to what you expected? If not, why do you think they are different?	
7	Are there alternative explanations for your results?	
8	How do your results compare with those of similar programs?	
9	What are the limitations of your data analysis and interpretation process (e.g., potential biases, generalizability of results, reliability, validity)?	
10	If you used multiple indicators to answer the same evaluation question, did you get similar results?	
11	Will others interpret the findings in an appropriate manner?	