

Quality Improvement Basics: Data Collection and Monitoring

Slide 1 Objectives

After completing this module, participants will be able to:

- Ask questions to help select appropriate measures for a quality project.
- Discuss data collection method options.
- Develop a data collection and monitoring plan.

Slide 2 Considering Your Measurement Strategy

Before you can develop a plan for data collection and monitoring, you'll need to be able to answer some key questions about your measurement strategy. Some of these will be familiar if you've completed the QI Basics Model for Improvement module.

- What is the problem you have identified and how do you know it is a problem? This helps you determine what you are trying to understand or achieve through the data.
- What can you measure that will help you evaluate if your interventions had an impact and if the interventions are being implemented as intended? It's only possible to evaluate an intervention if you understand how it's being implemented.
- Who is interested in this problem and what information or data will be most meaningful to them? As you think about the potential audiences for the data, what motivates them? What data analyses or measurements will tell a compelling story that empowers them to action?
- Are you able to collect the desired data?

You may find that you can jump a few steps in the process if you determine that the ideal metric is one that is already being collected and reported. It's also not uncommon for quality teams and goals to be focused on existing metrics that are reported to state or federal programs. For example, your organization may be evaluated on specific metrics and poor performance may have been the impetus for creating a QI team and prioritizing the metrics you are working on.

Slide 3 Data Collection and Monitoring Plan

With the previous questions answered, you're ready to start putting together a Data Collection and Monitoring Plan. Through the remainder of this module, we'll explore the questions laid out in the Plan, included in the Templates and Tools section of the QI Basics course webpage or through the QR code/link on this slide. You can use the tool in its current word processor format or translate it into spreadsheet if that better suits your needs.

Slide 4 Name and Define the Measures

To get started, you'll need to name and define the measure you'll be tracking.

- Measure name is relatively straightforward; however, you may want to consider including not only the formal name of the measure but also how you refer to the measure internally and any state or federal identifiers. For example, the formal metric name might be "Controlling High Blood Pressure" which has a corresponding NQF and CMS identifier, and the team might refer to it as the hypertension measure.

- And then clearly define the measure, pulling from the data specifications if they exist. Include the population of interest and any exclusions, and also define the numerator and denominator.

Slide 5 Data Collection Strategy

Your data collection strategy involves answering the questions who, when, how, and where.

- Who is collecting the data?
- When are they collecting it?
- How are they gathering it, and
- Where is it being kept?

For example:

- Is the physician entering data into the EHR during patient encounters?
- Is a survey vendor calling eligible patients once a week and storing the information in a third party platform?
- Are nurses completing paper checklists during daily rounds and turning them into the charge nurse?

The frequency with which you collect data, how much you collect at each period, and for how many periods, will all determine how much data you end up with. It can be difficult to know how much data you will need overall and at each time point. You will need to balance the need for enough data to identify a change in your process with the reality that there are limited resources for collecting data in terms of staff time and effort. You can conduct “trial runs” for a few time periods to see what kind of data you are getting, how much data and if there are any barriers or circumstances to collecting the data you had not anticipated.

Slide 6 Data Collection Methods

There are numerous ways you can collect data. Keep in mind that many will have trade-offs between the time they require and the level of detail they provide.

Tally sheets and checklists may be a quick method of gathering data depending on the level or amount of detail in the data you are collecting and for how long the data is being collected. An example of this is counting the number of instances when something occurs in a process, such as the number of patients asked to complete a screening questionnaire upon check in vs. how many questionnaires are actually filled out. This is a good example of quantitative data collection.

While information gathered in questionnaires or feedback interviews may involve a significant time investment to analyze, they may provide a much deeper understanding of your process or outcomes. This type of data collection is qualitative in nature as the data, for example, may describe patient observations and feedback about the care they received during an encounter.

There are several other methods, such as observations, daily reviews, and chart audits. However, one of the most efficient methods for data collection may be to determine what data you have already entered and stored in your electronic health record or EHR. Check with your IT department or an EHR super-user and determine if there are any reporting or data extraction tools that are part of or integrated into your EHR.

Slide 7 Sampling

Keeping in mind the purpose of measurement for quality improvement, depending on the situation, sampling may be an effective strategy to speed up learning and improvement. Sampling is collecting a portion, rather than all the data, with the expectation that it accurately represents the larger data set. You need enough data to make a sensible judgement about the process or system in question.

For example, if a public health official wanted to determine if an initiative to increase influenza vaccinations was effective, they would probably not need to collect data on every single person in the community to see if there was an impact. Instead, they may take a sample of clinics, and only during a portion of the flu season to assess whether a change had occurred. Consider your individual situation to determine whether it is necessary to collect or abstract data on every case, or whether a sample (which is a subset of the population that accurately represents the population as a whole) would be sufficient. There are often multiple considerations when deciding how and whether to collect sample data; it's a good idea to consult a data analyst or statistician who can provide guidance on this.

Slide 8 Baseline Performance and Goal

In your data collection and monitoring plan you'll want to capture your current or base performance – How are you doing now? If this isn't a measure you've collected before, that's alright and you can document that.

You'll also want to document what your performance goal is. Where do you want to get with this particular measure?

Slide 9 Monitoring Plan

So far, you've determined what data you're collecting, who's collecting as well as when, how, and where it is being stored. You know how you're performing currently and what your goal is. Now you need a plan for monitoring the data.

- Who is responsible for monitoring each measure? Monitoring is often a team activity, and rightly so, but it's important to identify who will ensure the team monitors the measure on a routine basis.
- How frequently will the data be monitored? It needs to be often enough that you understand the impact of any changes made. Keep in mind that frequency of monitoring may change over time. At first you may be looking at the data more frequently – possibly daily or weekly – and then as performance improves and related processes become standardized and other measures rise in priority, you may move your monitoring to a less frequent schedule – possibly monthly or quarterly.
- And for how long will you monitor the data? The reality is that to be effective, an appropriate duration of monitoring is often longer than we might like. But keep in mind that you typically will not only be interested in identifying if a change occurred, but also whether that change is sustained for a given period of time after the initiative has ended. For process measures, you want to evaluate if the process is being consistently carried out over time and for outcome measures, you want to evaluate the impact of the health care service or intervention on the health status of patients.

Slide 10 Data Display and Stratification

Finally, you'll want to determine how you will track and display data findings and what, if any, stratification will be applied. Guidance around data analysis and display methods are covered in more detail in other modules within this course, but the answers to these questions should be captured in the Data Collection and Monitoring Plan. For example, will the data be tracked on a trend line within a dashboard the team is monitoring? Or within a data table saved in the team's shared electronic file space? And for monitoring purposes, are you considering the data only in the aggregate or are there stratification factors that will be applied, such as looking at performance at the individual clinician level or stratifying patient outcomes based on race?

Slide 11 In Summary

- A team can consider key questions to help choose measures for their QI project, for example, what is our purpose in collecting data, what are we trying to understand, who will use the data and how?
- There are several data collection methods which vary in the type of information each method will collect and the resources needed to collect and analyze the data. Examples of data collection methods include observation, checklists, feedback, chart audit, collecting data from EHRs.
- Developing a data collection and monitoring strategy involves answering questions that will clarify the who, what, where, when, and how of data collection and monitoring activities.