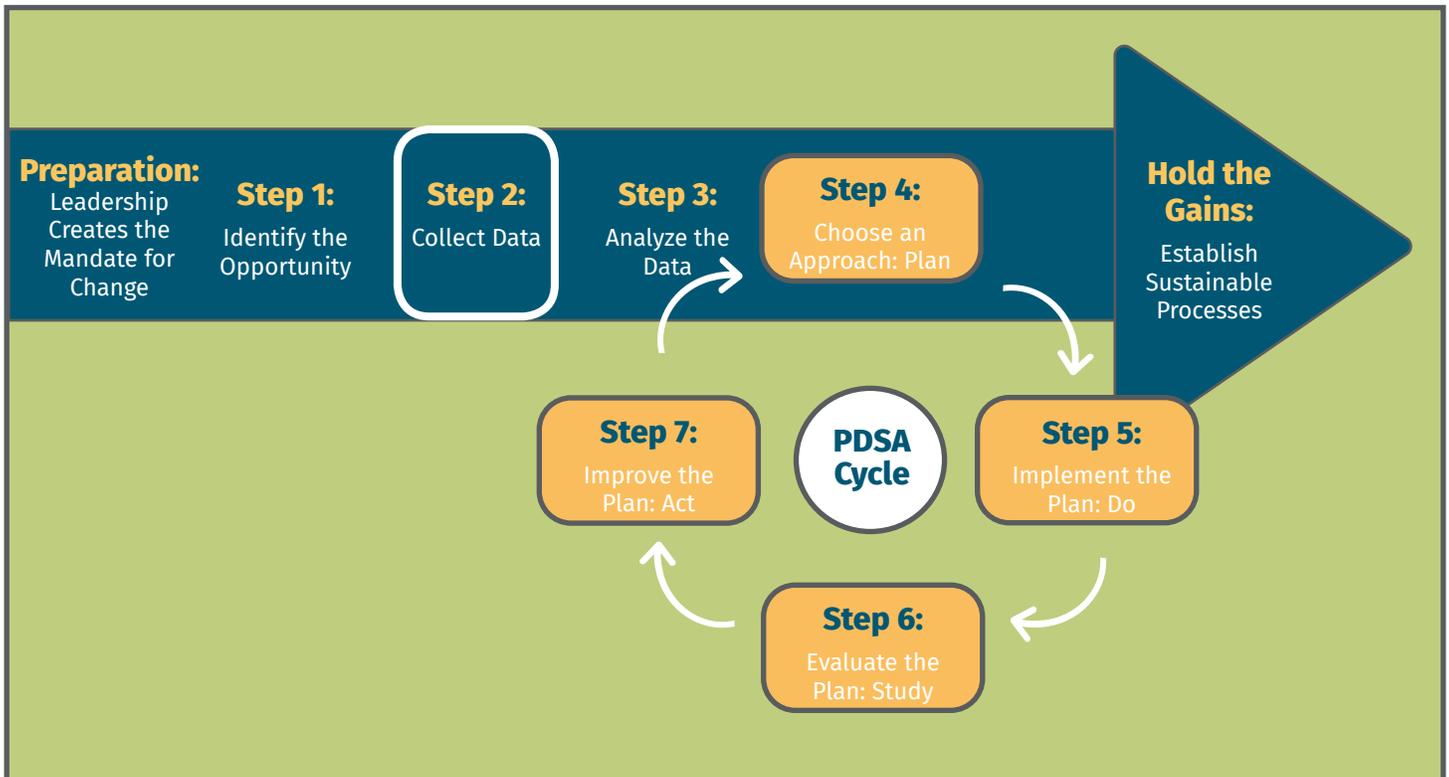# STEP 2: COLLECT DATA

THE QI APPROACH:

- **About this Step**
- **Suggested Activity Details**

About this Step

Purpose

One of the strengths of QI is that it is based on facts and data. Some data will be needed to gain an understanding of the issues with the current care system that are impeding optimal cardiovascular care. This step will provide the team with a foundation on which to proceed. It will also supply comparative data for evaluating the benefits of any changes the team makes.

Well-planned and careful data collection results in:

- A common framework for understanding and analyzing a system
- Data that is convincing to others when the team recommends changes
- A sound basis for decisions
- Methods that will tell the team whether improvements have occurred
- Skills to collect data for monitoring and making further improvements

In Step 2, the team will learn how well the system flowcharted in Step 1 actually performs in meeting cardiovascular care within the scope of your improvement effort.

Step 2 is intended to be an informal information gathering, not an extensive study. Teams that collect more data than necessary run the risk of getting bogged down by their experience (or lack of experience in data collection). Mountains of data do not necessarily provide any more information than a simpler approach may provide.

Some people will come into this step with a preconceived notion of what the root cause of a problem is. The data they collect should either support their hunch or provide a different explanation in an objective manner.

Step 2 is not just about gathering information but also serves to help develop "systems thinking." This is an important step in QI but is often a difficult concept for even highly focused professionals to grasp.

Creating a data collection plan and actually collecting data can be a lengthy process, especially if you haven't done it before. You will likely need multiple team meetings and/or offline work to accomplish this step.

As a part of each meeting, you'll want to make sure to:

- Discuss next steps
- Review the meeting record and task assignments
- Evaluate the meeting and make changes to improve the meeting process where indicated
- Set a tentative agenda for your next meeting

Objectives

- Identify what information the team will need to know to improve cardiovascular care and what data will supply that information
- Set clear data collection objectives. For each objective, identify:
  o **The most appropriate data collection approach**
  o **A representative sample of the population identified**
  o **The most appropriate data collection tools**
- Design and test ways of gathering the data
- Develop a detailed work plan and initiate data collection
- Document your data collection and analysis processes - this task is often neglected, but can be very useful for later reference

Preparation for Team Work

- Convene the Team Leader, Sponsor, Clinical Leader and/or a clinical information expert to identify a list of available data sources and to determine how best to identify the patients who will be within the scope of the improvement effort (i.e.: adults between 18-65 with known cardiovascular disease as defined by…, or all adults 18-65 with diagnosed heart failure).
- Compile a selection of data collection tools for the team's review and discussion.
- Plan for a way to display the high level flow chart of the current process for easy viewing and reference.
- Review the flowchart of the current process that was outlined in Step 1.
- Review the Suggested Activities (below) and prepare to present to the team.

Overview of Suggested Activities

1. Review the Step 1 meeting records and provide an overview of Step 2
2. Determine your data collection objectives
3. Identify an appropriate collection methodology and likely data sources for each objective
4. Gather, modify, or create data collection tools to fit the methodology
5. Assemble a data collection plan
6. Plan for how you will pilot test the data collection methodology
7. Collect the data and monitor the collection process

Suggested Activity Details

During the QI Team meetings...

1. Review the Step 1 meeting records and provide an overview of Step 2

- Review the Step 1 meeting records, including the final versions of the opportunity and mission statements, with the team.
- Describe the purpose and objectives of Step 2.

2. Determine your data collection objectives

- Most teams collect too much information, wasting precious time and resources. Specific data collection objectives should help the team focus on only what minimum information is needed to be believable among the team.
- Start the process of forming general, overall data collection objectives by focusing on the following three questions:

  ○ **Does the current system/process meet everyone's needs and expectations?**

  For instance, clinicians and health plans want to know that each patient is receiving guideline care, cardiovascular risk factors are reduced, and people with cardiovascular risk or disease practice good self-care. Patients want their interactions with the care system to be efficient and caring, know that they can receive help with developing good self-care skills, and make the changes that will give them the best possible quality of life.

  ○ **What are the barriers and problems with the current system/process?**

  Besides learning how the current system/process is working, the team will need to know the reasons for any inadequacies in that system. The objectives here could include:

  1. Identify the main problems with the current system/process

  2. Determine where in the system/process the problems occur

  ○ **What are the attitudes toward potential change?**

  Change is always difficult. A team can collect data about their patients and care system/process problems, and develop an excellent plan for improvement, but find unexpected resistance when implementing the changes. To understand and prepare for people's reactions to change, consider collecting this information. *Objectives here might include learning how clinicians and staff feel about:*

  1. Using the EHR for creating a patient registry, using it as a database, or using it to gather other relevant patient information

  2. Using flowsheets or other formats within the EHR or other potential changes in documenting and tracking patient information, which may include best practice alerts

  3. Delegating part of the care process to other care team members

> **TIP:** When collecting information about why problems occur, keep focus on the processes involved, not the people. Otherwise this step can be reduced to unproductive blaming and finger-pointing, causing fear and distrust that can undermine the team's efforts. Problems are typically due to faulty processes, not the people working within these faulty processes.

3. Identify an appropriate collection methodology and likely data sources for each objective

- The team will need to identify the best source of the information (from individuals, medical records, etc.) and the best method of obtaining the data.

- Common data sources and collection methods include:

  o **Existing information:**

    Billing information and lab data are often overlooked sources of useful information. However, it may not be accurate, current, readily available, or in a usable format. Have a team member investigate the availability and reliability of this type of patient data.

  o **Check sheets:**

    Data collection does not have to be high tech. A check sheet is a quick and easy way to capture repeated occurrences like the number of clinic visits in a week or the number of patients receiving a specific service. Data is entered simply by placing a tally mark for each occurrence in the appropriate category. Obviously, this will work best for a smaller number of occurrences. If you are working with a large group of patients, this will not likely be your best choice.

  o **Audit forms:**

    This is a more complex form capturing multiple items from single occurrences. Use this method when you want detailed information. An example is a chart audit form that collects data such as a patient's lipid profile, their blood pressure over time, and dates of service. If there is an EHR in place, this is the type of information that should be readily available, however, retrieval is highly dependent upon how it is entered into the EHR. Seeking assistance from someone well-connected with how the EHR works and how to retrieve data will be very helpful.

  o **Surveys:**

    A survey is a good method for collecting subjective information such as satisfaction, attitudes, beliefs, and behaviors. Surveys can also collect objective (i.e.: factual) information such as risk factors and descriptions of the population like age and gender – although age and gender could also be pulled from the EHR. If you are conducting a survey, aim for a response rate of at least 33% to ensure the results are believable. This is not a research study so ensuring statistical significance is not important. What is important is that the key stakeholders will believe the data reflects what is intended. Rather than aim for a specific percentage, ask key stakeholders what would be believable for them as a guide. Online survey platforms (e.g. Survey Monkey, Qualtrics, others) make it easy to conduct surveys by e-mail and still maintain anonymity unless the person responding wants to identify themselves. These platforms also provide simple data analysis (e.g. frequencies) and visualization (e.g. tables and graphs).

> **TIP:** Keep your data collection short and simple. A handful of indicators may tell you what you need to know. Collecting data on everything will bog you down and may even jeopardize your improvement effort.

4. Gather, modify, or create data collection tools to fit the methodology

- Many tested and reliable data collection tools already exist for chart audits and patient or staff surveys. Chances are, these tools will serve your needs. Avoid revising or adapting validated tools, as you may compromise their reliability.

- If the tools you need do not already exist, the team will have to design them. Whether designing or adapting a data collection tool, keep it simple and easy to understand. If you have access to someone in your organization who is an expert in data collection, seek their input early on in the process.

- Make sure to draft instructions for the data collection processes. Writing instructions that mean the same to all users is difficult, so it is important to pretest the instructions by having a few people use it. It is important to do this before a broader pilot to ensure the instructions and the process is clear and well thought out.

- Writing out data collection instructions may also raise some issues. For instance, if you are doing a retrospective chart review, how far back in the chart do you audit? How do you verify a diagnosis? What deadline for return do you give a survey? Is an incomplete survey still usable? Issues like these often become apparent only when you actually begin collecting data. That is why it is important to pretest your entire data collection process.

5. Assemble a data collection plan

- The data collection plan will describe all the steps, assign responsibilities, identify the resources needed, and set timelines.

- Drawing up a detailed data collection work plan will help you track the team's progress and determine what resources you will need, how much time the data collecting will likely take, and who should be involved. A workplan will also document your process for future reference.

- Some of the factors to consider when completing a work plan include:

  - **Objectives (the specific questions the team wants answered)**
  - **Description of how the population was identified**
  - **The sample size and sampling strategy used and why**

    See Focus On: Selecting Your Sample *on next page*

  - **Description of the data collection tool(s) to be used**
  - **Instructions for the data collectors to follow**
  - **How the collection instrument and instructions will be tested**
  - **How the data will be analyzed and displayed**
  - **Who will perform each step**
  - **The timeline for each step**

- To plan for all of these factors, you may find it useful to flowchart your data collection process step-by-step.

6. Plan for how you will pilot test the data collection methodology

- Plan to test the methodology on a few individuals or samples to ensure that it can be done as you intended.
  You need only test the data collection approach on a few cases, but omitting this step can result in problems, if not complete failure.

- Things to look for when pilot testing include:

  - **Unclear meaning of questions**
  - **Variability or inconsistency in responses**
  - **Unexpected results**
  - **Difficulties in answering the questions or completing the forms**
  - **Excessive time or resources needed to complete the form or questionnaire**
  - **Poor fit to your data needs and objectives**

- Modify the methodology, tools, and even data collection objectives if necessary.

- Retest after making your alterations. If you find you cannot obtain the data you want, you may need to revise the data collection objectives.

Focus On: Selecting Your Sample

Considering your sample and sample size will need to be part of your workplan. Here are some suggestions for how to select your sample.

Identify people meeting your criteria.

- There are several methods for identifying people with cardiovascular disease. Some methods are more accurate than others, but none are error-free.
- Select a slightly larger sample size than needed to accommodate the inevitable discards.
- If using the list for a survey, verify the diagnosis first. Patients can become alarmed when asked about their cardiovascular disease when they have not been told they have the disease.
- It is also imperative to follow HIPAA rules for contacting patients. For QI, it is generally not necessary to go through your Internal Review Board for approval, but some organizations may require it for QI as well as for research projects. It is important to check this out at the beginning of your process.
- Generally, any data collected for QI purposes will be de-identified and aggregated when it is reported so no personal information will be shared as part of the process. But you will want to identify people at the outset to ensure you are collecting data on people directly connected to your QI work.

Determine the sample size.

- A sample is a group to represent your target population. If selected randomly, a relatively small sample should be representative and yield the same results as if the entire population was studied.
- For the purpose of this data collection, the general rule of thumb for the optimum sample size is at least thirty –OR– five percent of your total population (whichever is lowest).

Select a random sample.

- The goal of sampling is to obtain a representation of the population. It is extremely important that the sample is random, which means that each case in the population has an equal chance to be in the sample.
- Random sampling helps avoid bias. Bias is defined as any influence or condition that distorts the data or interferes with generalizing from the sample to the population. This sampling strategy should ensure that each patient with cardiovascular disease has an equal chance of being selected to be in the sample.
- To select a random sample, pick from a list of patients (even one listed in some order such as alphabetically) by numbering each patient, then using a random number table to select the sample, or pull numbers from a hat.
- Check your sample to make sure it is indeed representative. For instance, look at the distribution by gender, age and type of cardiovascular disease to see if they are about the same proportions as the whole population.

7. Collect the data and monitor the collection process

- Put the work plan into action:
  - **Finalize the data collection objectives and approach based on the pilot test**
  - **Train everyone involved in the data collection**
  - **Monitor your progress as soon as the collecting begins**
  - **Address problems as soon as they arise**
  - **Avoid the urge to collect more data than the team truly needs**
  - **Document the data collection process so it can be repeated to collect comparative data following your improvements**

> **TIP:** STEP 2 should not be a lengthy process, taking a few days to collect the data. Once data collection begins, monitor it closely and address all problems immediately. Look at the data being collected to verify that it is what you want and will meet your objectives. Also try to analyze the test data as you would the real thing (see Step 3).

ACCELERATED QI OPTION

The purpose of Steps 2 and 3 is to answer the question "How will we know if a change is an improvement?" The only information absolutely essential to the team is how well you are currently providing the care specified in your guidelines and Aim statement. Therefore, you can limit Step 2 to a chart audit that will give you the baseline data you need to target improvements and to measure how well the improvements actually improved care.