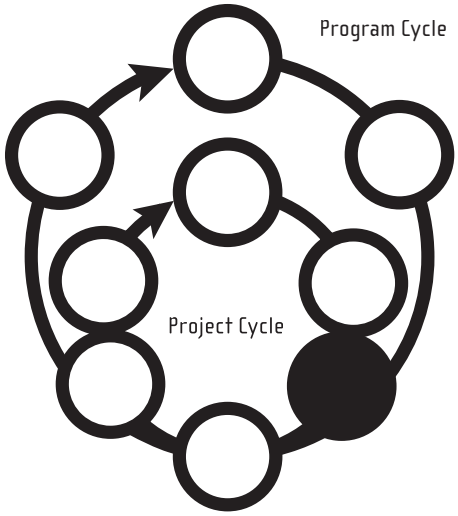
Project Step 3: Investigate the Process.



The Big Picture

After defining and documenting the aspect of care under review, project team members review the process from which the problem originated in order to understand how the problem evolved and why it persists. Identification of these problem areas and their underlying causes provides team members with the necessary information to help solve the problem.

What to do

- Understand the process.
- Identify underlying causes.

Snapshot of HIV Care

Everyone's a detective: "CSI: HIV Care Program"

After the area for improvement is identified and performance data collected, the project team sets off to identify where things may go wrong in the care delivery process. In this process, all team members can act as improvement detectives—critically investigating the current processes and identifying underlying causes. Techniques of investigation include developing flowcharts of process, identifying underlying causes, and brainstorming, but team members should be encouraged to be innovative in how they seek causes and possible solutions.

Using flowcharting to investigate the process for placing and reading PPDs identified two problems: HIV care providers were not sufficiently aware of the need to place PPDs and the patients were not returning to have their PPDs read, report JaneAnn Hall and Sandy Bergner of Hennepin County Medical Center, Minneapolis, MN. The project team then brainstormed the likely causes of these problems—a variety of scheduling problems with providers were identified. On the patient side, staff suspected the reason patients were not returning was because they did not fully understand the purpose of the PPD test or its importance.

Snapshot of HIV Care...*Continued*

In prioritizing the root causes, Hall and Bergner, say that HCMC staff determined that both issues were "integrally linked" and that both needed to be addressed by simultaneous improvement efforts. These efforts included the development of patient education materials and training nurses to place PPDs in the absence of physicians. These changes had been successful, with increases in both the number of patients receiving PPDs and having the read.

A quality improvement project team at the University of Pittsburgh Medical Center was formed to improve the process of prescription refills. Through their investigation, they found that many of their patients were receiving prescription refills but were not coming in on a consistent basis for medical visits or viral load monitoring. We found that "physicians were providing multiple refills on prescriptions, so patients didn't need to come into the clinic to see their physician and have their lab work done," reports Administrative Director Margaret Palumbo. Lacking adequate policies and procedures regarding refills exacerbated the problem.

The improvement effort included the development of a policy regarding refills (limited to no more than three), medical visits and lab monitoring frequency, and physician management of night and weekend call schedules. The new guidelines were communicated to patients through brochures and when they called in for their medication refills.

"While it was a difficult adjustment for patients and staff, after six months everyone seems to have adapted. As a result of this new policy, patient safety and retention in care has improved," Palumbo reports. "The percentage of patients who kept their quarterly monitoring visit increased from 68% to 95% over nine months."

The cause or reason isn't always so obvious. Often, project teams feel overwhelmed because they've identified too many possibilities, or systems that they can't control. Sometimes, reducing the number of people involved in the effort can help focus the brainstorming effort. Sheila Boyle, Process Improvement Coordinator at the Albany Medical Center, Albany, NY reports that during one brainstorming activity "we started out with a very large group and got a lot of valuable ideas, but there was an overload of perspectives. There were so many ideas flying around, it because difficult to decide on the next steps. Once we limited to group to only four people that we felt adequately represented the process being investigated, we had more focused discussions and arrived at more concrete solutions and ideas."

Conducting Fieldwork

Team members can also take their investigation out into the field to the places where care or services are actually delivered. One project team sent two team members to its clinic, pretending to be patients, to investigate the clinic visit process. Following the directions given to all patients, the team members actually got lost in their own facility because of errors in the instructions routinely given to patients. Only by walking through these instructions did they learn about a potential reason for patient visit delays.

Frontline staff from different agencies and disciplines in the Dallas Family Access Network (Dallas FAN) traded places with each other to gain an understanding of the network's member agencies and staff. "A nurse working with a case manager and an outreach worker going to an administrative office learned a lot because of the perspective of someone who is from another agency. They gained a great understanding of what goes on behind the scenes at the other member agencies. Now everyone has a new perspective of what it takes to walk in their colleagues' shoes," reposts Betty Cabrera, Dallas FAN's Executive Director.

Snapshot of HIV Care...*Continued*

Other facility staff can become involved in the process through completing surveys or being interviewed by team members and reviewing the flowcharts and root cause analyses developed by the project team.

Project teams can also include consumers who can provide their perspective of being a client at the facility. The University of Miami School of Medicine, Miami, FL involved consumers in their investigation of low rates of follow-through with mental health referrals and appointments. They learned from consumers that because of the stigma associated with mental health services, consumers were reluctant to engage in these services. Their subsequent improvement project focused on dispelling this stigma.

Everything's connected

Usually the process of investigation leads to new insight about how care is delivered. It can also uncover other aspects of facility operations. For example, one quality manager reports that during one brainstorming session they discovered a problem within their purchasing department. "It turned out that the requests for supplies for the lab were being sent to the wrong supplier. No wonder we never had what we needed!" This process led to improvement projects relating to both staff training and changes in purchasing policies as well as with lab operations, which was the initial focus of the project team. "During this process, it was important not to point fingers at individual staff and to continuously communicate to the team that we had to keep focused on the process, not the person."

Understand The Process.

Preliminary analysis of performance measurement data and other information helped to identify problems. The data point out deficiencies but do not necessarily explain their causes. Further analyses are necessary to refine the team's understanding of the process and target potential problem areas that require improvement.

By definition, a process is a series of steps or actions needed to produce something or to achieve an end. For example, a series of steps are repeated each time a patient comes for an exam—a patient registers, waits to be called, checks in with the nurse, meets with the provider, is examined, has blood drawn, if needed, then, schedules a follow-up appointment.

A process is the basic level at which changes can be made to improve HIV care. Sometimes a relatively simple task requires several steps, any one or more of which may need to be changed.

Charting The Process

One of the best ways to understand a process is to draw a picture of it—and that's basically what flowcharting is. A flowchart shows the steps of any process in sequential order. Flowcharts can be used to illustrate a sequence of events, activities or tasks for processes ranging from simple to complex. There are many styles of flowcharts but most are drawn using a few common symbols.

Flowcharts help staff visualize the process so that it is easier to understand and easier to improve. Teams should take the time to construct a flowchart because it:

- Provides a fast and efficient way to understand the process.
- Identifies potential sources of problems and provides a clear frame of reference for pinpointing the part of the process that requires change.
- Enables the team to communicate to others what they are doing and why.

The flowchart is completed by the project team since each member typically understands part of the process, but not necessarily the whole process. By working together the flowchart has a greater level of detail and accuracy, and agreement is reached more easily. It is important for team members to use information that is based on fact and not anecdote.

To round out the information gathered during flowcharting, a project team may interview those who are affected directly or indirectly by the process. Questions may focus on issues that might hinder the process, for example, waiting time, room availability and preparedness, computer problems, location of patient charts, patient access, and adequacy of the length of time scheduled.

The Toolbox on page 108 provides a step-by-step guide for constructing a flowchart. An example of a flowchart is also included.

Real-World Tip
Gather Input.

The following steps are helpful in drafting and finalizing a flowchart:

- Brainstorm with those who are affected by the process under review.
- Create two flowcharts: one describing the current process and one outlining the desired improved process.
- Share a draft version of your flowchart openly with staff and gather their input; include graphic display to illustrate changes to staff.
- Interview patients or conduct focus groups with patients before finalizing flowchart.
- Measure the time for each step and indicate on flowchart.

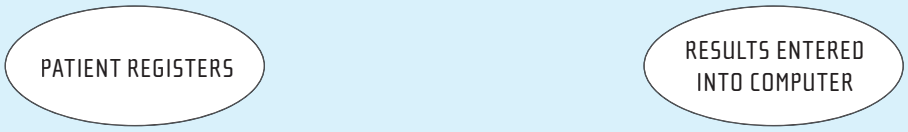
Notes

Additional Resource

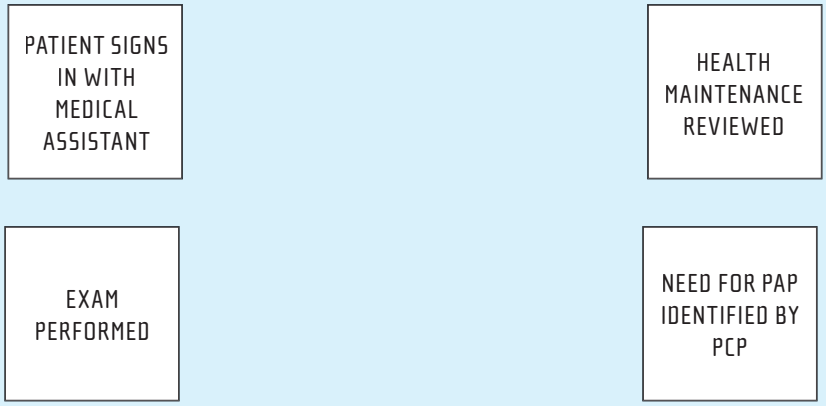
For guidance in teaching small groups about how flowcharts are used during process investigation, see the HIVQUAL Group Learning Guide "Flowchart" exercise. The exercise could also be used by project teams as a warm-up to creating their own flowchart. You can download this publication at www.hivqual.org.

Toolbox:
Flowcharting

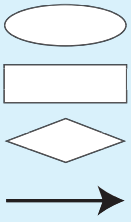
1. Decide on the beginning and ending points of the process. A team working on GYN care defines the beginning point when the patient registers at the clinic and the ending point when documentation of the results of the GYN exam are entered in the computer. There can be more than one starting or ending point.



2. Identify each step of the process. Describe the steps of the process under review and write each step on a 3x5 card.



3. Use common symbols. Try out the following symbols. You can change them if you find a better way to illustrate the concept.



Oval shows START or END point on a process diagram

Rectangle shows an activity in the process

Diamond shows a "YES" or "NO" decision

Arrow connects steps in a process and directs the flow

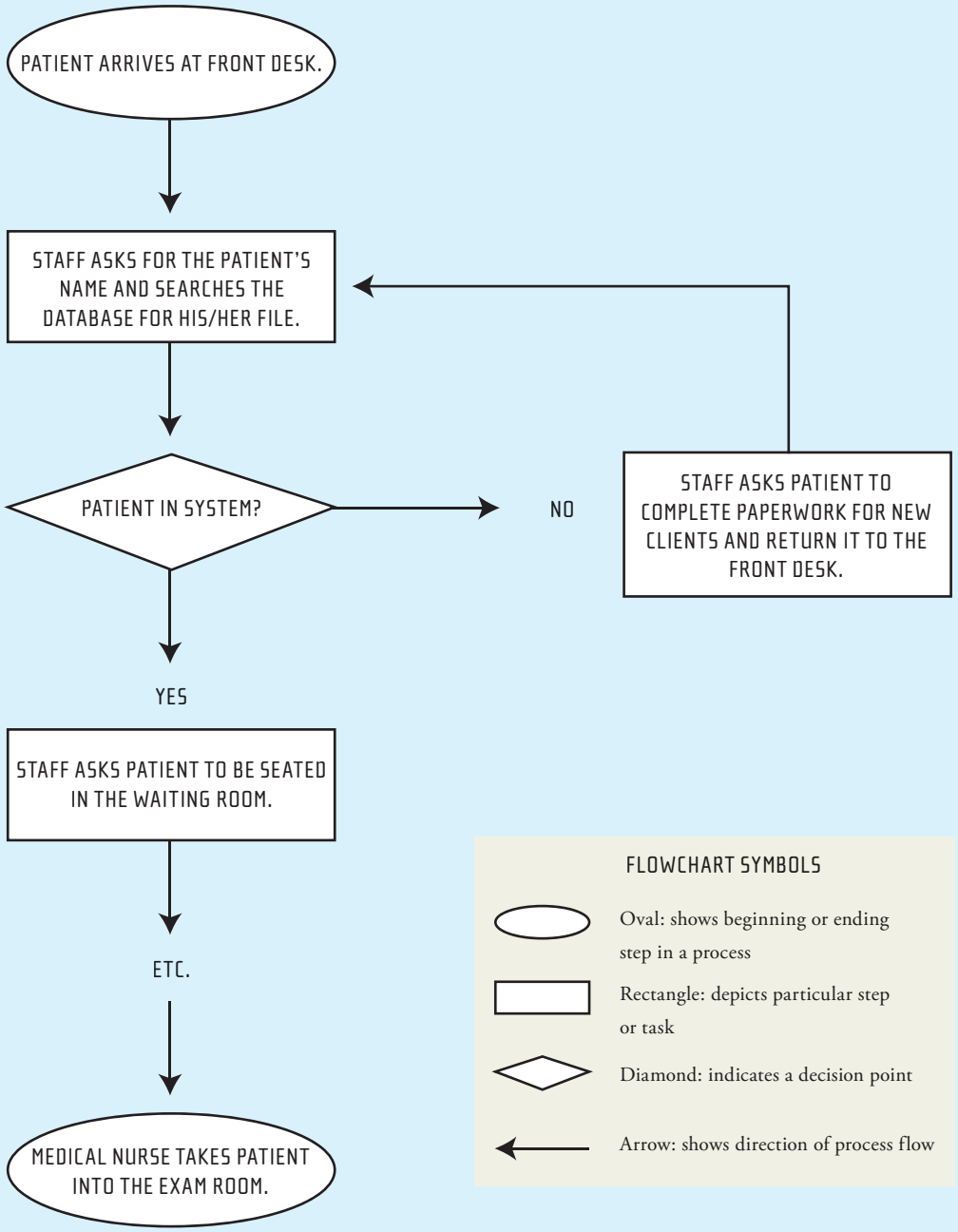
4. Place the cards in sequential order. Place the cards (with tape on the back) on a large piece of paper or a whiteboard and connect the steps with arrows. Usually on the first trial there are frequent changes.

5. Conduct a quick investigation, if needed. At times the team might not sufficiently understand the entire process and need to gather additional input.

6. Identify and agree on key process areas. Step back and look at your diagram. Discuss what steps are problem areas based on team members' experiences. Circle those steps. Time can be wasted on working on "surface" problems, i.e. those you see versus those that give rise to the problem. For each problem identified, discuss likely causes and write them next to each problem. This method combines the flowchart with a cause-and-effect analysis.

Toolbox:

Flowcharting...*Continued*



Identify Underlying Causes.

Having completed the flowchart, the project team begins identifying potential barriers and the underlying causes of the problem(s). Underlying causes are the reasons a problem happens repeatedly. If the team can identify and eliminate underlying causes, they eliminate the problem. Conversely, if the team fails to correctly identify the underlying causes, they may only 'cover up' the problem and it will probably reoccur. In real life, a quality problem is embedded in a system with a myriad of interdependent steps. To fix just one cause might not fix the system barrier.

Identifying Potential Causes

During process investigation the project team generates ideas about potential causes of the problem, either through group discussions or brainstorming.

Brainstorming is defined as a technique to freely and uninhibitedly generate ideas using a group approach. It is a useful tool when a team needs to generate a large volume of ideas. The Toolbox on page 111 provides a step-by-step guide for brainstorming.

Mapping Underlying Causes

Once the underlying causes are identified, the project team maps the factors that influence the problem. The visual display is important to reach agreement among the team and to clearly communicate the causes of a problem to others at a care facility, especially the HIV quality committee, staff and stakeholders.

The team can use flowcharts by adding the underlying causes at each step or a cause-and-effect diagram. The Toolbox on page 113 provides a step-by-step guide for creating a cause-and-effect diagram and an example.

Additional Resource

For guidance in teaching small groups about how brainstorming is used during process investigation, see the HIVQUAL Group Learning Guide "Brainstorming" exercise. The exercise could also be used to help team members adapt an "anything goes!" attitude before embarking on their own brainstorming session. You can download this publication at www.hivqual.org.

Toolbox:
Brainstorming

Basic Steps for Brainstorming

1. Write the topic statement or question in a central location. It should be clearly defined and written where everyone can see it.
2. Review general rules for brainstorming. Basic ground rules include:
   - Go for quantity of ideas; do not censor your ideas or anyone else's.
   - Utilize free-association and building on previous ideas.
   - Record ideas as stated; do not edit—only clarify, if necessary.
   - Do not discuss or debate the merit of individual ideas.
3. Establish a time limit. 7 to 10 minutes is recommended.
4. Generate ideas with the group until time is up. Begin idea generation by going around the group, allowing one idea per person. Participants may pass if they do not have an idea. Ideas should be written down where everyone can see them. The process of generating ideas usually goes through several cycles. Later cycles tend to have a slower pace, but may result in the most innovative ideas. It is important not to rush the process.
5. Review and refine ideas. Discard any ideas that are virtually identical.

Brainstorming Example of Show-Rate for GYN Appointments

Background:

A project team investigates the show-rate for GYN appointments and presents their results to the quality committee: 51% for GYN appointments.

Question for Brainstorming:

What are the reasons for a low show-rate for GYN appointments?

Idea List:

- Staff do not give patient printed appointment card
- Patients unaware of appointments
- Lack of childcare for patients
- Staff give patient wrong appointment information
- Difficult to reach patients directly by phone due to wrong contact information
- Computer system taken down for routine maintenance
- Appointment cards do not include exact clinic address
- Reminder calls placed by someone patient doesn't know
- Computer can only print reminders for appointments within 3 months
- No procedure in place to reschedule broken appointments
- Remote location of clinic
- Only one appointment can be listed on appointment card

Prioritizing Underlying Causes

Not all underlying causes are equal. Prioritization helps teams determine which one of the underlying causes has the greatest impact on the HIV system and potential for improving the aspect of care under review. Teams answer the following question: "Which underlying causes of the problem should we focus on first?"

Prioritization of underlying causes is a decision reached through team consensus. Possible criteria for prioritization are:

- Underlying cause within control of the team
- Impact to consumers (client inconvenience versus 'pain' caused by the problem)
- Difficulty in solving the underlying cause
- Resources required for addressing the underlying cause (e.g., staff time, money or space)
- Impact on delivery system

Real-World Tip

Ask For Input And Eliminate Barriers.

Consider the following tips when identifying and prioritizing underlying causes:

- Don't wait for the perfect solution when you need to remove a barrier; try a solution as quickly as possible.
- Start by investigating 'low-hanging fruit'—those problems with the most impact and value.
- Consult staff which underlying causes are the most important barriers and ask how to eliminate them.
- Find out how similar HIV programs have successfully completed similar quality projects.
- Include consumers when investigating the causes.

The Pareto chart is a quality tool that can be particularly helpful during this step. The Toolbox on page 115 provides an overview of the Pareto charting process.

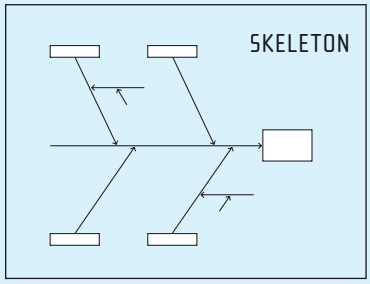
Notes

Additional Resource

For guidance in teaching small groups about how cause-and-effect diagrams are used during process investigation, see the HIVQUAL Group Learning Guide "Cause-and-Effect Diagram" exercise. You can download this publication at www.hivqual.org.

Toolbox:
Cause-and-Effect Diagram

The cause-and-effect diagram may also be referred to as an Ishikawa diagram, after the doctor who first developed it, or a fishbone diagram, after the diagram's structure that resembles the skeleton of a fish. The "skeleton" of a cause-and-effect diagram is shown below.

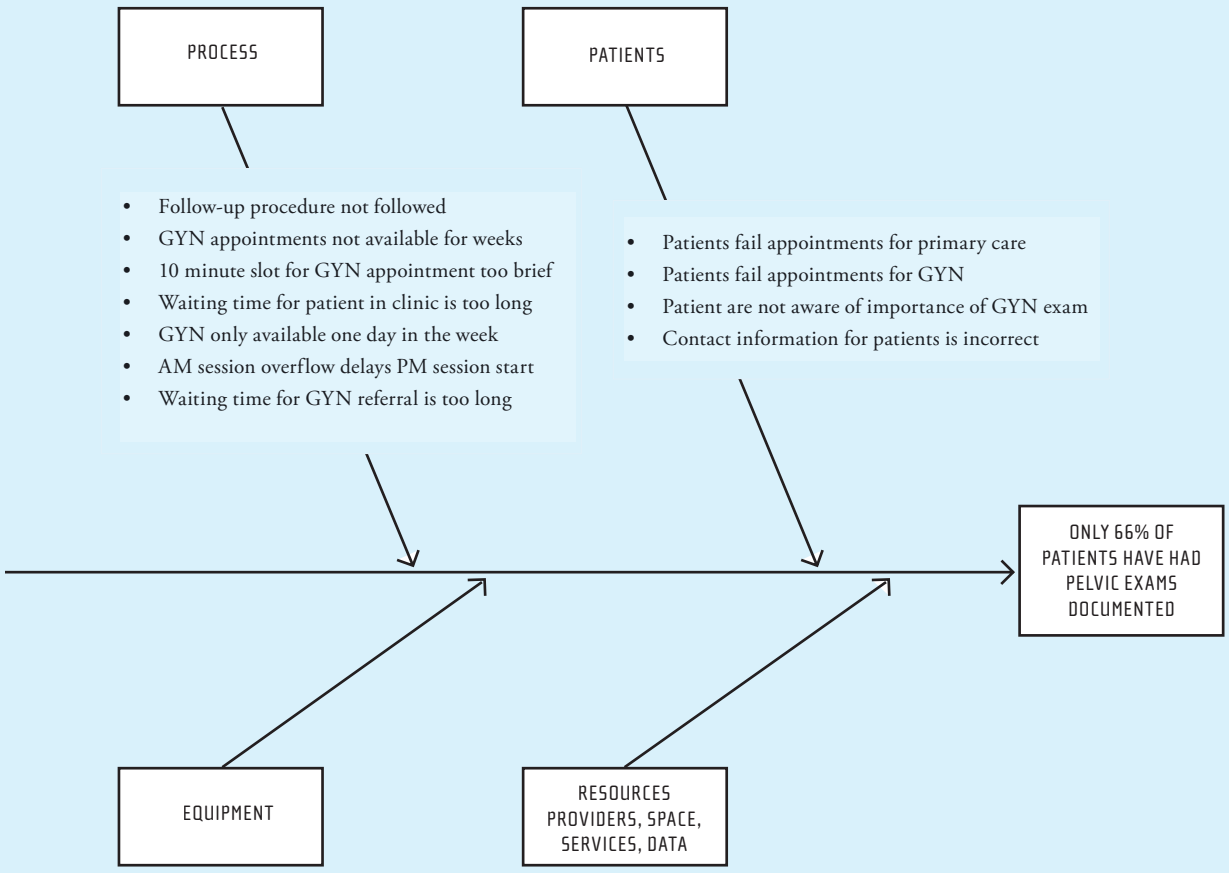


Basic Construction of a Cause-and-Effect Diagram

1. Draw the diagram's skeleton. Explain that the skeleton consists of a horizontal arrow pointing to the effect and additional arrows—representing causes—pointing to the horizontal arrow. Major causes can be separated into basic categories such as: Equipment, Environment, Procedures, People. These are only suggestions. A team should use categories that best fit their improvement needs. Others could be: Methods, Materials, Resources, and Measurement. Make them fit your problem.
2. Write the problem (or desired outcome) in the box at the end of the arrow.
3. Brainstorm potential causes and subcategories to fill in the "bones" of the skeleton if not done prior to this. Review the potential causes. Note how major causes typically have subcategories, identified by asking: Why does this happen?
4. Review and refine causes. This sets the stage to examine a few of the causes further and prioritize them.

Toolbox:

Cause-and-Effect Diagram...*Continued*



- Follow-up procedure not followed
- GYN appointments not available for weeks
- 10 minute slot for GYN appointment too brief
- Waiting time for patient in clinic is too long
- GYN only available one day in the week
- AM session overflow delays PM session start
- Waiting time for GYN referral is too long

- Patients fail appointments for primary care
- Patients fail appointments for GYN
- Patient are not aware of importance of GYN exam
- Contact information for patients is incorrect

- Due to new computer system, GYN appointments can not be made
- Computers are frequently down
- Phone lines are busy at certain hours

- 2 GYN sessions per week availability
- Only one room in use for GYN
- Provider is overbooked
- Provider is not able to speak Spanish
- Primary care providers are not providing pelvic exams
- Providers are not referring HIV patients to GYN department
- No routine reports by GYN department about frequency of patient visits

Toolbox:
Pareto Chart

DESCRIPTION	In any group of variables that contribute to a common effect, a relative few contributors ('vital few') will account for the majority of the effect while other contributors ('useful many') will have less impact. This principle is called Pareto or "80/20 Rule" which suggests that most effects are the result of relatively few causes, that is, approximately 80% of effects come from 20% of potential causes. To maximize your efforts, the team needs to identify first the 'vital few' and focus their efforts on those contributors.
USE	• Helps focus improvement efforts by ranking problems. • Allows project improvement teams to identify the 'vital few' causes of problems on which to focus their improvement efforts.
BASIC CONSTRUCTION	1. List response categories on the bottom horizontal axis in order of decreasing frequency, starting on the left side of the chart. 2. Mark the units (e.g., frequency, percent, cost, or time) on the left vertical axis. 3. Mark the right vertical axis from 0% - 100%. 4. Record the 'raw data' on the chart. 5. Construct a line starting from the top of the tallest bar to show the cumulative percentages.
PARETO CHART EXAMPLE	Which Adherence Interventions Work?