Appendix D.
Resources on Performance Improvement

Resource D.1: Tools to Identify Root Causes

	"5 Whys"	Process Mapping	Customer Journey Map
Description	A simple approach to identifying root causes by involving people with hands-on experience	A description/picture of the step-by-step actions taken to accomplish an activity; used to identify missing steps and redundancies.	Identifies the consumer "touch points" (i.e., points where the consumer interacts with the organization) and what the experience is like from a consumer's perspective. Maps may be created for different types of consumers.
Key Steps	1. **State the problem.** For example: Callers who may be eligible for premium subsidies are not staying on the call to learn how to apply for subsidies. 2. **Ask "Why did the problem occur."** For example: The help line employees did not fully understand the benefits or how to explain them to callers. 3. **Ask "Why did the answer in step 2 occur?"** For example: Why didn't employees understand the benefits? The training was not sufficient. 4. **Keep asking why an issue emerged until the root cause is identified.** For example: Why was the training insufficient? Employees were put into their positions before the training was finished, then had difficulty scheduling time for the remaining classes. **Why?** Why were employees asked to assume responsibility for the help line before training was complete? The organization was growing and help line employee turnover was relatively high; as a result, employees needed to be rushed into positions. **Why?** Why was employee turnover high? Employees felt unsupported in their roles.	1. **Plan.** Develop a plan that includes the processes to be mapped, limits to the processes to be examined, level of detail needed in the map, and a format for the map. 2. **Form the process mapping team.** Select up to 10 team members, including the director or manager of the process, and people who understand and perform the processes well. 3. **Review documents.** Obtain and review documents that describe the processes to be mapped. 4. **Conduct the process mapping session.** Start the mapping process with the major steps or activities; then drill down within each major step to document the components of each step to the level of detail needed to identify potential problems. 5. **Review and revise the process map.** After a process map is developed, a larger group of employees should review and validate it.	1. **Identify the journey or process to be mapped.** For example: How a consumer learns about health plan costs and what is covered 2. **List points where the consumer interacts with the Marketplace.** Gather information through group discussions with knowledgeable staff involved with the touch points 3. **Describe each touch point.** Interview frontline staff and consumers to understand: What is the consumer's goal? What is the consumer doing? How does the consumer feel? How does the consumer interact (phone, Web, in-person)? How do they prefer to interact? What does the consumer expect to accomplish? What actually happens? 4. **For each touch point, identify the most important interaction from the consumer's perspective.** What most determines a consumer's satisfaction? Where do consumers abandon the process? Talk with management and frontline staff to identify these "moments of truth" for each touch point.
	Answers to the "whys" should be grounded in fact and not what might have happened.	6. **Create a future state map.** Create a map of an improved process.	5. **Identify metrics that will assess performance at each touch point.** This will be the gauge to assess the effectiveness of performance improvement interventions.

	"5 Whys"	Process Mapping	Customer Journey Map
Strengths	This method engages staff in identifying the root causes and is relatively simple to use.	Mapping out the steps allows the team to see redundancies in steps, missing steps, and other problems that may be barriers to optimal performance.	This consumer-focused method uses the mapping process to identify the parts of the consumers' experiences that may be improved, including their human interactions, services, and communications.
Weaknesses	This method is not recommended for more complex problems. However, the "5 Whys" can be helpful to use in conjunction with other root cause analysis methods.	This method can be challenging because it is a very detailed process. It often requires the use of a skilled facilitator to obtain the input needed.	It may not work for processes that a consumer would not know about.
Tools	Not applicable	Free mapping tools include:[xxvii] ▪ OpenOffice Draw: http://www.openoffice.org/download/ ▪ LibreOffice Draw: http://www.libreoffice.org/download/libreoffice-fresh/ ▪ Dia: http://dia-installer.de/download/index.html ▪ Sticky notes Alternative mapping tools are also available for purchase.	*See list at left.*

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Mind Tools. (n.d.). Root cause analysis: Tracing a problem to its origins. Retrieved from http://www.mindtools.com/pages/article/newTMC_80.htm

Georgia Leadership Institute for School Improvement. (2009). *Balanced performance improvement series: Leading a team through process improvement and process mapping*. Retrieved from http://dev.glisi.org/sites/default/files/pbm/BalancedPerformanceImprovementSeries-LeadingaTeamthroughProcessImprovementandProcessMapping_0.pdf

Marrelli, A. F. (2005). The performance technologist's toolbox: Process mapping. *Performance Improvement, 44*(5), 40–44. Retrieved from http://www.ispi.org/pdf/suggestedReading/ArticleFour_ProcessMapping.pdf

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Resource D.2: An Overview of Three Performance Improvement Methods

A number of improvement methods can be used—alone or in combination—to test, implement, and spread performance improvement interventions across the organization. This resource discusses three well-known improvement methods and two elements that these methods have in common.

The method that best suits your Marketplace depends on the complexity and type of problem and the resources available for performance improvement. (To learn more about performance improvement, see *Handbook for Basic Process Improvement*. Available at: http://www.au.af.mil/au/awc/awcgate/navy/bpi_manual/handbook.htm).

Plan-Do-Check-Act

This simple approach is a four-step, rapid-cycle process for carrying out change:

- **Plan:** This step is covered in the root cause analysis (see section 3), where the team identifies the problem and its root causes as well as a metric for collecting data that will assess the effectiveness of a solution.
- **Do:** Generate possible solutions (process changes), then select the best solution from the list. Implement the solution on a small scale, such as with a few staff or in one department. Collect data to determine whether the solution worked. See exhibit D.2.1 to learn more about small tests of change.
- **Check:** Review and analyze the data; identify what you've learned.
- **Act:** Take action based on what was learned in the Check step. The action options are to:
  - Adopt the improved process if the aims have been met.
  - Adapt or change the intervention and repeat the four-phase process until the desired level of improvement is achieved.

Conducting Small Tests of Change (Exhibit D.2.1)

Research shows that testing solutions on a small scale is an important way to set up improvement efforts for success.[135, 136, 137, 138] When implementing large-scale improvement initiatives, start with a pilot test of the new approach or activity with a few people, if possible, and then evaluate and refine the initiative. For example, the team could implement a new initiative with a small group in one department or one geographic area to assess if it works before implementing a change throughout the entire organization or for all consumers.

This approach is ideal for testing improvements to a specific process on a small scale; it works best when specific problems are identified, and the team can implement improvements in a cyclical manner. It is not appropriate, however, if a large change is needed or when the root cause has not been identified. The PDCA approach is often a component of more complex performance improvement methods.

>> **Learn more:** About PDCA:

- QAPI. (n.d.). *PDSA cycle template*. Retrieved from http://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/downloads/PDSACycledebedits.pdf
- Gorenflo, G., & Moran, J. W. (n.d.). *The ABCs of PDCA*. Retrieved from http://www.phf.org/resourcestools/documents/ABCs_of_PDCA.pdf

Lean Management

Lean management requires expertise to implement. Organizations frequently hire a consultant to help develop an overall strategy for applying this method on a large scale and training leadership and staff. This method centers on five principles:

- **Identify value.** Specify what is important from the perspective of the consumer with respect to a specific product or service.
- **Map the value stream.** Identify the steps in the current process; then redesign the process so there are no unnecessary steps.
- **Create the flow.** Improve the flow in the steps or processes so that the steps occur in a tight sequence.
- **Establish pull.** Start with the customer demand and work backward through all the steps required to deliver the desired product to the customer.
- **Seek perfection.** Work to continuously improve, trying to achieve the perfect system for a given activity.

These principles can be applied to improving a specific process or embraced as a long-term strategy to maximize value and reduce waste throughout an organization. Types of waste include defects or rework, waiting, inventory, over-processing, overproduction, transportation, and motion.

Lean management is considered to be most effective when the goal is to create the greatest value for consumers using the least resources. However, Lean can be resource intensive and may require external experts for guidance.

>> **Learn more:** Read about Lean Management below in appendix D, resource 3.

Institute for Healthcare Improvement's Model for Improvement

This approach involves five steps:

- **Plan.** Form a team of the right people, setting aims, establishing measures, and selecting changes.
- **Develop and test on a small scale.** Use the PDCA cycle discussed to test change on a small-scale.
- **Implement, sustain, and control.** After learning from a small-scale test and refining the changes as needed, implement the change on a broader scale (e.g., for an entire pilot population or department).
- **Disseminate changes throughout the organization or system.** If the change is successful, then implement it to other parts of the Marketplace, or depending on the change, to other organizations.
- **Evaluate and pass forward.** Prepare evaluation reports; celebrate and reward successes.

The Institute for Healthcare Improvement's Model for Improvement approach takes PDCA further by incorporating steps to test the change on a larger scale then spreading it across a population or organization-wide. It may include incorporating other methods into the improvement project approach, such as Lean and other improvement methods, to identify and test improvements.

>> **Learn more:** About Institute for Healthcare Improvement's Model for Improvement:

- Institute for Healthcare Improvement. (n.d.). How to improve. Retrieved from http://www.ihi.org/resources/Pages/HowtoImprove/default.aspx

- Scoville, R. & Little, K. (2014). *Comparing Lean and quality improvement* (IHI White Paper). Cambridge, Massachusetts: Institute for Healthcare Improvement. Retrieved from http://www.ihi.org/resources/Pages/IHIWhitePapers/ComparingLeanandQualityImprovement.aspx

Common Elements Among Improvement Methods

All performance improvement methods have at least two steps in common:

- Planning the intervention.
- Collecting and analyzing data.

Planning the Intervention

Developing a written plan can help the team think through how to carry out the improvement effort and ensure that everyone is on the same page. The team's plan should address:

- **Goals of the improvement effort.** Develop clear and specific objectives to help the team stay focused and prevent scope creep. See section 3, exhibit 3.2 for tips on developing SMART aims.
- **Team members.** Select individuals to work on the improvement effort with diverse backgrounds and skills and a wide range of perspectives. Small teams of six or fewer may work best and are generally easier to manage. Frontline staff members provide "insider" insight to the problem. They can also help to identify solutions that are doable and that their peers will be willing to adopt.
- **Leadership.** Consider how the team will involve the Marketplace's leaders to obtain resources and remove barriers to change.
- **Needed resources.** Document the resources that the team will need, such as:
  - Staff time for planning, testing the change, collecting and analyzing data, and implementing the change across the Marketplace.
  - Resources for training the improvement team.
  - Software for process mapping, data collection, and analysis.

Collecting and Analyzing Data

To monitor progress in implementing an improvement plan, your Marketplace improvement team has to be prepared to both collect and analyze data.

Collecting data. To determine whether a change has led to the desired improvement, the improvement team will have to review existing data or collect new data, typically both before and after implementing the selected intervention. Ideally, the team should identify data and data sources that are updated frequently and will provide information that is directly related to the improvement effort. Whatever the team decides to measure should help to answer these questions:

- Was the root cause of the problem eliminated?
- Did the process change meet our objectives?

The team may be able to use the same data that were used to identify root causes, such as existing call center and website metrics. See exhibit D.2.2 for some examples of Marketplace process improvement metrics that you may be collecting already.

If data needed for this purpose are unavailable, develop a data collection plan that is simple and doable.

Analyzing data. The focus of data analysis is twofold:

1. To compare the baseline data with data collected after each of the process changes.
2. To understand which of a number of factors is contributing most to a performance problem.

Having staff experienced in analyzing data with Excel or a similar spreadsheet program is a plus, but if no one with this expertise is available, there are resources available to help. See exhibit D.2.3 for resources and tips related to collecting data.

Here are some simplified steps for collecting, analyzing, and displaying data:

1. **Enter data into an Excel spreadsheet.**
   - Limit each row to data for one encounter only.
   - Include a column for every piece of data needed to assess effectiveness of the process change.
   - Since statistics are calculated for each of the data collection periods, include a column that indicates which data collection period the data belong to: baseline, process change 1, process change 2, etc.
   - Spot check the data to catch data entry errors and any illogical numbers.
2. **Calculate descriptive statistics for each data collection period.** For example:
   - For measures of time (e.g., minutes), subtract the start time from the finish time and calculate the mean or median.

Examples of Marketplace Process Improvement Metrics You May Be Collecting Already (Exhibit D.2.2)

- **Process cycle time.** Record the time customer interactions start and end.
- **Customer goal achievement.** Ask consumers at the end of an interaction if their need was met. If not, record the reason(s) why. Put the reasons into categories for data collection.
- **Achievement of key Marketplace functions.** Record if consumers were able to complete an eligibility application or health plan enrollment form by the end of an encounter. Ask assisters or call center staff to record if these tasks were successfully completed. If not, record the reason(s) why. Put the reasons into categories for data collection.
- **First-contact resolution.** Record calls or face-to-face interactions where the first person serving the customer was able to meet their needs. If not, record who the consumer was referred to and why. If the customer has made contact with the Marketplace previously to resolve the same issue, record how many times they have made contact. Call centers often capture this information routinely.

Resources: Data Collection "How-to" Guidance (Exhibit D.2.3)

- *Collecting Evaluation Data: Direct Observation*. Available at: http://learningstore.uwex.edu/Assets/pdfs/G3658-05.pdf
- *Basic Tools for Process Improvement: Data Collection*. Available at: http://www.balancedscorecard.org/portals/0/pdf/datacoll.pdf
- *A Simple and Effective Way to Display Data: The Check Sheet*. Available at: http://www.qualitydigest.com/inside/six-sigma-article/simple-and-effective-way-display-data.html

Tips for Collecting Data

- Design small-scale data collections, testing the change for short periods of time under different conditions, such as high- and low-volume periods.
- Develop a spreadsheet using Excel or a similar tool for data entry. (See more on this point under *Analyzing data* on the previous page.)
- Think through the analysis plan before finalizing the data collection spreadsheet to make sure that all critical information will be collected.

- For measures of achievement, such as number of calls resolved with the first contact, calculate a percentage (e.g., number of calls resolved first time divided by the total number of calls).

3. **Display the data.** Options include:
   - Time series chart: Compares performance against a goal and identifies variation and trends.
   - Bar chart: Identifies patterns in data.
   - Histogram: Identifies the amount of variation in continuous data, such as time.
   - Pareto chart: A kind of bar chart that identifies the most important cause of a problem when there are a number of factors that contribute to the problem.

See exhibit D.2.4 for a list of resources for displaying data.

Resources: How to Display Data (Exhibit D.2.4)

USAID Assist Project: *Guidance for Analyzing Quality Improvement Data*

- Time series charts: https://www.usaidassist.org/resources/guidance-analyzing-quality-improvement-data-using-time-series-charts-0
- Bar charts: https://www.usaidassist.org/resources/bar-and-pie-charts
- Histograms: https://www.usaidassist.org/resources/histograms
- Pareto charts: https://www.usaidassist.org/resources/pareto-charts

National Quality Center: *The Quality Academy*

- Useful Quality Improvement Tools, Tutorial 14: http://www.nationalqualitycenter.org/index.cfm/6101/15791

ASQ: *The 7 Basic Quality Tools for Process Improvement*

- Templates (for data display): http://asq.org/learn-about-quality/seven-basic-quality-tools/overview/overview.html

Resource D.3: Understanding the Lean Management Method

Lean Management is a principle that focuses on reducing waste so that work adds value and meets the consumer's needs.[139] These principles have been used in the manufacturing industry for decades and more recently in health care.

- **Strengths of this method:** Focuses on reducing or eliminating waste in systems and creating or maximizing value through improving efficiency.
- **Weaknesses of this method:** Can be resource intensive and may require external experts for guidance; some of the techniques, such as the 5S phases (see below), can be more easily adopted on a small scale.

Key Principles

Identify value. Specify what is important from the perspective of the consumer with respect to a specific product or service. The aim is to meet the consumers' needs within an acceptable timeframe while adhering to price, cost, or resource estimates. Set goals for improvement such as zero defects or that a process should be completed within so much time.

Map the value stream. Identify the steps in the current process; then redesign the process so there are no unnecessary steps.

Create the flow. Improve the flow in the steps or processes so that the steps occur in a tight sequence. This will involve eliminating barriers that may slow down a process. The 5S phases may be used at this point as well.

- ***Sort*:** Sort steps and remove items or steps that are unnecessary or obstacles.
- ***Streamline*:** Streamline or straighten steps, and create easy access to information.
- ***Shine*:** Shine to keep the workplace clean and quiet to enable staff to work easily.
- ***Standardize*:** Standardize by creating guidelines and visual tools to keep the process organized.
- ***Sustain*:** Sustain by using training and discipline to optimize implementation of the new activity.

Establish pull. Start with the customer demand and work backward through all the steps required to deliver the desired product to the customer.

Seek perfection. Work to continuously improve, trying to achieve the perfect system for a given activity. Like the Plan-Do-Check-Act cycle, improvements are tested until the desired level of improvement is achieved. Collect data to see how close you are to attaining the improvement goal.

>> Learn more:

- Institute for Healthcare Improvement. (2005). *Going Lean in health care* (IHI Innovation Series white paper). Cambridge, MA: Author. Retrieved from http://www.ihi.org/resources/Pages/IHIWhitePapers/GoingLeaninHealthCare.aspx
- Lean Enterprise Institute. (n.d.). Principles of Lean. Retrieved from http://www.lean.org/WhatsLean/Principles.cfm
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- Mahalik, P. (n.d.). Learning to think Lean: Six steps with review points. Retrieved from http://www.isixsigma.com/methodology/lean-methodology/learning-think-lean-six-steps-review-points/
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