

# Physician Office Quality Improvement: How to Examine Value and Waste in Your Office Process

An MPRO Self-Instructional Module

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Welcome to the MPRO self-instructional module (SIM): How to Examine Value and Waste in Your Office Process. The goal of this module is to assist physician practices to examine their office processes and determine when there is value and when there is waste.

Nurses completing this module are eligible to receive 2.0 nursing continuing education contact hours. This educational activity is provided by MPRO, which is an approved provider of continuing nursing education by the Michigan Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation. See slide 51 for details. The average time to complete this module is 120 minutes.

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## MPRO

- Michigan's Quality Improvement Organization
- CMS Contract for Medicare Quality Improvement
- Doctor's Office Quality- Information Technology program (DOQ-IT)



MPRO is Michigan's Medicare Quality Improvement Organization (QIO), as designated by the Centers of Medicare & Medicaid Services (CMS). MPRO works collaboratively with primary care physician practices to provide expert quality improvement consultation, evidence-based office improvement tools, patient assessment tools, and continuing education programs for nurses.

MPRO's current work with the physician office setting is also focused on the Doctor's Office Quality - Information Technology program (DOQ-IT). DOQ-IT is a national program funded by CMS to facilitate adoption of health information technology in physician offices. Through DOQ-IT MPRO provides free assistance to a limited number of primary care physician practices in the following areas: practice assessment of information technology readiness, guidance with electronic health record selection and implementation, as well as optimizing office efficiencies and use of technology to support care management and quality improvement.

Whether your practice has paper medical records, electronic health records (EHR), or is in the process of implementing health information technology such as an EHR; efficiencies in your office will be gained by assessing your current processes. You will be able to identify processes that are working well and address those processes that have room for improvement. This SIM will introduce several Lean quality improvement concepts for examining work flow processes.

## Objectives

1. Identify basic Lean quality concepts
2. Define value
3. Examine types of waste
4. Relate the benefits of eliminating waste



The first objective is to introduce some of the basic concepts for the Lean quality improvement methods.<sup>1,2</sup> It will also assist physician office staff in recognizing value-added activities and waste in your work, the second and third objectives. This SIM will also explore seven types of waste commonly found in work processes. Looking at these types of waste will help you and your co-workers to become waste detectives.

The benefits of eliminating waste (the fourth objective) will be integrated throughout the presentation. By recognizing the value-added steps in work processes, physician office staff can focus on the critical components of your work. Knowing what is important and figuring out ways to improve your work leads to improved outcomes. For example: at the end of the visit, the patient or customer should feel like their needs have been met, their visit proceeded efficiently, and they are satisfied with the care they have received.

<sup>1</sup> MacInnes RL. The Lean Enterprise Memory Jogger™ GOAL/QPC. Salem NH 2002

<sup>2</sup> Womack JP, Jones DT. Lean thinking: banish waste and create wealth in your corporation, Simon & Schuster, Inc. NY, NY. 2003

## 1. Lean Quality Concepts

- Definition
- Goals
- Guidelines
- Process mapping
- Resources



The first objective will discuss some basic Lean quality improvement concepts. The Lean concepts were developed in Japan and traveled to the United States through automobile manufacturing efforts to improve. These Lean concepts are readily applied to healthcare situations, particularly the physician office.

The next nine slides will give a very brief introduction to some of the Lean concepts including goals and guidelines. The importance of process mapping is stressed as a means to identify value and waste of physician office resources.

For further information on Lean, please refer to the references listed on slides 50 and 51.

## Lean Definition

A systematic approach to the identification and elimination of waste and non-value-added activities through continuous improvement in all products and services.



This is the definition of Lean.<sup>2</sup> Lean strives to eliminate anything that does not add value to a process. Furthermore, Lean provides tools to examine work processes to minimize waste and maximize work flow.

In order to evaluate our work and look for waste, we will examine work processes for examples of activities that add value and those that do not. By eliminating waste and activities that do not add value, work processes become more effective and efficient, thereby meeting customer expectations.

To identify the value in our work, we begin by mapping the work. That means that we make a diagram of the work flow of a process. After mapping your work activities, the office team examines those work activities for value and waste. This SIM will demonstrate the Lean method for examining work processes to identify value and non-value added activities.

For more information on a work process and how to map a work process, please review the self-instructional module (SIM) "How To Map Your Office Process." This SIM is located at [www.mpro.org/doqit/pogae/sims.htm](http://www.mpro.org/doqit/pogae/sims.htm).

<sup>2</sup> Womack, *op cit*

## Lean Initiative Goals

- Improve quality
- Eliminate waste
- Reduce lead time
- Reduce total cost



Lean thinking and a Lean Enterprise are outgrowths of quality improvement strategies used to improve production systems, especially in automobile manufacturing companies. However, these methods and strategies also work very effectively with healthcare and other organizations to improve quality, eliminate waste, streamline operations, reduce costs, and meet customer expectations.<sup>3</sup>

A lean initiative has four main goals<sup>1</sup>:

- Improve quality: “Quality is the ability of of your products and services to conform to your customer’s wants and needs.”
- Eliminate waste: “ Waste is any activity that takes up time, resources, or space but does not add value to a product or service.”
- Reduce lead time, which will reduce delays: “Lead time is the total time it takes to complete a series of tasks within a process.”
- Reduce total costs “Total costs are the direct and indirect costs associated with production of a product or service”

<sup>1</sup> MacInnis, *op cit*

<sup>3</sup> Martin K. On Lean Enterprise and its potential healthcare applications. *Jnl for Healthcare Quality*. 25(5) 2003..

## Lean Project Guidelines

- Leadership endorsement
- Consumes too many resources, lacks quality
- Distinct business case
- Process can be mapped
- Commitment to change
- Worth the time and effort



When beginning a quality improvement project there are several important considerations: First, the office leaders (administration) must agree that this is an important activity: to improve the way work is done. In other words, the project must have “buy-in” from the leaders.

Next, look for a process that uses a lot of resources (people, things, paperwork, etc.) and which has some issues or problems that do not put your office in the best light. These are things that lack the quality you would like to deliver to your patients.

There should also be a real business reason for doing this project. A business reason can mean that patients will be more satisfied, the office workers will gain more time to assist patients, the work will be more effective or easier to do, people will experience less frustration, etc.

Also, the process must be one that can be diagrammed or mapped. This is necessary so that steps or activities can be examined for value and waste.

Quality improvement work requires a real commitment on the part of leadership and the people doing the work. This means that the leaders and the workers in the office must be willing to change to make improvements. The project must be worth the time and effort it takes to examine current work processes and design improvement.

## Value in Process Mapping

- All value is the result of a process
- Mapping a process gives a clear picture of all activities
- Details activities as:
  - value-added
  - non-value-added



The previous slide mentioned mapping or diagramming how you do your work. Mapping your office processes gives you a clear picture of your work and how one activity or step flows to another. You may think you know your work processes, but that may be only your perspective. It may be your unique way of performing a procedure. Others may do the work differently, and another way may be better than the way you get the work done. Sometimes, when you map the process you are surprised to see what it really looks like.

Understanding where you are now (current state) will help decide the best opportunities for improvement, which will lead to your future (desired) state, or the way you would like to do your work.

Mapping out your work process can also help your team to recognize value-added steps from non-value-added steps. Understanding what adds value and what does not, can help you to eliminate waste from your processes. This will improve your office workflow and improve staff and customer satisfaction.

## Lean: Value Stream

Picture of how value is added to your services

- Use current state process flow map
- Examine work activities for
  - Value added activities
  - Non-value-added activities
  - Waste



Once your office has completed the process map of how you currently do the work, you are ready to examine the value stream in your work processes. A value stream is a summary of all the actions (steps or activities) that are required to complete the work. It refers to all the activities your office must do “to design, order, produce and deliver it’s products or services to customers.”<sup>1</sup> In manufacturing it means everything “required to bring a product from concept to launch and from order to delivery.”<sup>4</sup>

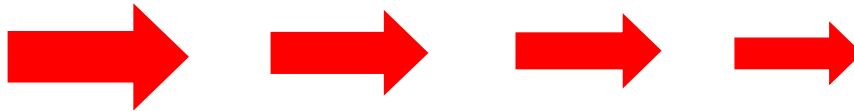
The office team will examine the work flow map to evaluate if each work step or activity adds value; does not add value, but is required; or is wasteful.

The goal is to focus our work on those things that add value, meet customer expectations, and allow us to work more efficiently and effectively.

<sup>1</sup> MacInnes, *op cit*

<sup>4</sup> Marchwinski C, Shook J. Lean lexicon: a graphical glossary for Lean Thinkers, 2<sup>nd</sup> edition. The Lean Enterprise Institute, Brookline MA 2002.

## Details Are Important



Drawing a work flow process map lets the team get down to the details of how the work is done.

If the details are not identified, then the opportunities to eliminate waste and improve work flow are missed. By capturing the different ways of doing things (variation) in your current state map you and your coworkers will find a “goldmine” of improvement opportunities.

Most offices have found many activities that demonstrate value-added work and of course, some that are not necessary and may be waste.

## Resources: Dictionary Definition

- Source of support or help
- Available supply
- Assets

Merriam-Webster



As noted earlier (slide 6 ), one of the Lean guidelines suggests examining a process that consumes too many resources. We will take a minute to review the meaning of “resources”.

The Merriam-Webster Dictionary<sup>5</sup> defines resources as a source of supply or support. It can also be defined as an available supply that can be drawn upon when needed, or the means available for a company to do their work, whether it is producing a product or providing a service. One can also think of resources as assets: things that are useful, or valuable possessions.

Some resources that you own are: your home, your car, your collection of books, etc. Other resources that you may have are your skill in interior design, or ability to write poetry, to sing, or to fly an airplane, etc.

<sup>5</sup> Merriam-Webster On-line, 2005-2006, <http://www.m-w.com> (Accessed 3-10-06)

## Resources: Definition

- People
- Time
- Things (paper, pens, supplies) inventory
- Facilities
- Capital investments



Resources may be defined as people, time, capital investments, facilities and inventory.

Listed here are some examples of how this list of resources may apply to the physician office:

- People: physicians, nurses, medical assistants (MA), receptionist, billing personnel, etc.
- Time: the time it takes to perform a physical exam, complete a prescription refill phone call, to arrange for a referral, etc.
- Inventory: the supplies that are used in taking care of the patients and your office business
- Facilities: the value of the building, the space your office occupies, the parking lot, etc.
- Capital investment: the value of the office machines and equipment, the computer system, examination tables, etc.

## Lean Summary

- Customer focused
- Improve quality
- Deliver maximum value, using least amount of resources
- Map the value stream in your work
  - Clear, simple picture
  - Check for value



Lean systems are focused on the customer's needs and expectations. Value must be focused on the customer's perspective. The questions to ask are "What is the customer willing to pay for?" and "Why should the customer choose you over your competition?" These simple questions set the foundation for the work that companies are doing to improve their products and services.

One of the Lean principles is to deliver the maximum value while using the least amount of resources. This is a very simple explanation of some of the many Lean concepts. Readers are encouraged to learn more by reading some of the resources listed on slide 50. You may also contact MPRO for a more extensive reference list.

Two of the important goals in Lean are to improve quality and to eliminate waste. This is to allow a company or physician office to deliver maximum value while using the least amount of resources.

To identify the value in our work, we begin by mapping the work. Then, we check the process map to see if there is value-added or no value-added. The next sections of the SIM will demonstrate how to examine work processes to identify value and non-value-added activities, as well as waste.

## 2. Value: Dictionary Definition

- Fair return or equivalent in goods, services, or money for something exchanged.
- Monetary worth

Merriam-Webster



Our second objective will focus on what adds value and what does not add value. The third objective will examine waste.

The Merriam-Webster dictionary defines value as a fair return or equivalent in goods, services, or money for something exchanged.<sup>4</sup> It further defines it as the monetary worth of something. Other synonyms for value are “worth,” “price,” “usefulness,” “worthwhile,” or “utility of something.”

How do you define **value**? What is important to you?

- Do you value the peace and quiet of driving home with soft music?
- Is it important to you to go out on a date with your significant other?
- Is it important to you to follow the latest clothing designers fashions?
- Do you think it is a waste of your money (resources) to go out to eat at a fancy/expensive restaurant?

<sup>5</sup> Merriam-Webster On-line, *op cit*

## Value: Lean Definition

The customer's perspective

- Willing to pay for it
- Choose you over the competition
- Meets customer's expectations



How do you as a customer of service define value? The Lean definition of value is whatever the customer would be willing to pay for, with the goal of wanting them to choose your office over the competition.<sup>2</sup> It is important to meet the customer's expectations, to meet their needs. So, value is the inherent worth of a product or service as judged by the customer.

Meeting a customer's expectations might mean that their service is timely and efficient. You want to deliver service that exceeds their expectations, so they will choose your office over the competition. By providing service that exceeds the customer's expectations you will be increasing the likelihood that they will choose you, and that your customer satisfaction rates will be among the best.

An everyday example of value might be when you go out for dinner in a restaurant and you value efficient and courteous service in exchange for a fair price and tip. If you feel that you have not received good service you may be less likely to leave a good tip and may not return to the restaurant in the future. When you go to see your physician for an annual physical the things that you value are: to be seen at the time your appointment was scheduled, to have quality time with your physician, and to receive care that meets professional standards in exchange for payment.

<sup>2</sup> Womack, *op cit*

## Three Types of Value

1. Creates value
2. Creates no value, but is unavoidable
3. Creates no value and is avoidable



One of the basic Lean principles is to identify the value in all your products and services. Value must be focused on the customer's perspective. The questions to ask are "What is the customer willing to pay for?" and "Why should the customer choose you over your competition?" These simple questions set the foundation for the work that companies are doing to improve their products and services.

There are three types of value:

First, there are work activities or steps that add value to a process. An example of this would be recording the patient's history – the most recent weight and vital signs – or arranging a referral.

Second, some work steps or actions that do not add value for the customer but are unavoidable or required.

The third type occurs when some action or step is included in the work process that does not contribute to the outcome and is avoidable.

The following slides will explain these types of value.

## Value Test

*If we took this step away would it still provide value for our customer?*



By mapping out your processes you have an opportunity to critically evaluate your work activities. You can examine your work for which steps or activities create value and which steps do not.

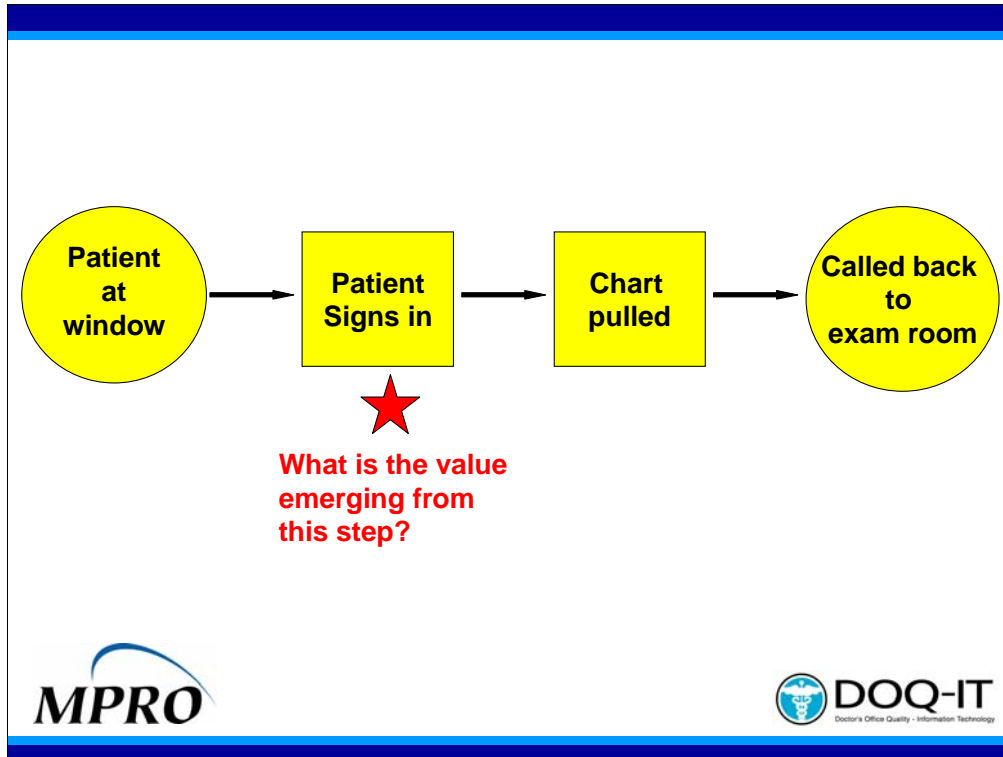
To test a process for value ask yourself: "If we could provide value without this step would the customer miss it?"<sup>2</sup> Many steps in a process are typically of no value to a customer, but are unavoidable with the current way we do our work.<sup>2</sup>

If the customer would miss the step then it is of value and should remain in place. If the customer would not miss the step then it can possibly be removed. Questions that you might ask are:

- Did this step or activity increase the time spent doing the work? Did it take me longer to do my work which made the patient's stay longer?
- Did it increase the use of supplies?

Both of these are examples of using resources (time and supplies).

<sup>2</sup> Womack, *op cit*



This shows a sample map of a typical check-in process in a physician practice:

- The patient presents at the window (circle or oval)
- The patient signs in (rectangle or square)
- The chart is pulled (rectangle or square)
- The patient is called back into the exam room (circle or oval)

Ask yourself: “What is the value emerging from each action step (action steps are in rectangles)?”

If you can provide value from this process without this step would the customer miss it?

What is the value of the patient sign-in? For example: If you took away “patient signs in” would the patient miss it? **YES!** Signing in gives the customer validation that the office knows that they are there.

## Non-Value-Added

Consumes resources but does not add value

- Some cannot be removed from a process,
- Some are **PURE WASTE**.



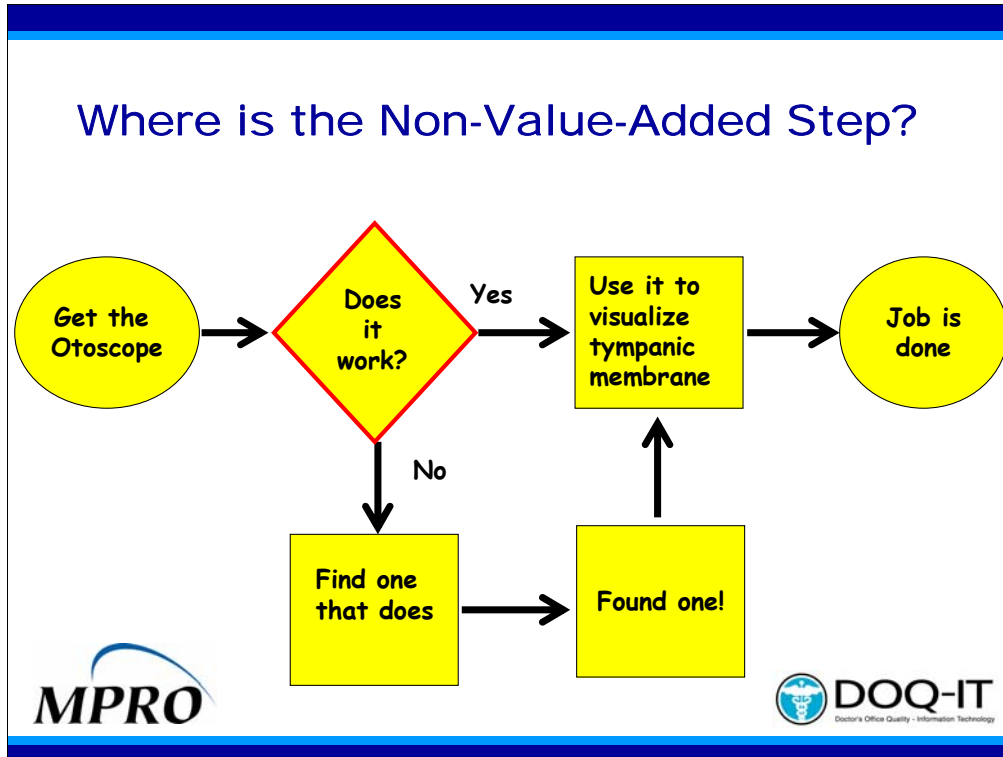
The next type of value are those work steps in a process that do not contribute value. From the customer's perspective, these steps or activities are things that they are probably not interested in paying for. These activities consume resources (people, time, supplies, etc.) but do not add value to the service.

Non-value-added activities can be sub-divided into two groups<sup>4</sup>:

1. Those that do not add value and are required. They are sometimes called "incidental work". A physician office example would be the non-value-added steps that cannot be removed such as signing a HIPAA (Health Insurance Portability and Accountability Act, parts of which address privacy and security of patient information) form. Would the customer miss it if we did not get their signature on it? Probably not; however regulations require that we must do this.

2. Those that do not add value and are not required. These are waste and can be eliminated. An example of this is walking to get a piece of equipment or a supply item that could be placed within reach. Sometimes, these are things that we have always done, but there is no benefit in doing them. A physician practice example of a necessary step that does not add value, is walking to the store room for supplies that could be kept in the exam rooms.

<sup>4</sup> Marchwinski, *op cit*.



Look at this process map. Can you identify the non-value-added step?

The process begins when you “get the otoscope” (oval, starting point). Then you move to “does it work?” (diamond/decision point). If “yes” it works, you “use it to visualize the tympanic membrane” (rectangle/action). Then the “job is done” (end point, oval).

If the otoscope does not work you must find one that does (non-value-added step), then “use it to visualize the tympanic membrane” (rectangle/action) then the “job is done.”

The step of having to find an otoscope that works is a non-value-added step. It requires extra work to find one that works. This adds time to the work process. In this example the office staff are spending resources on work that does not add value.

## Value Summary

### Value:

- A fair return in goods or services

### Non-value:

- Actions or activities that do not add value to the customer



In summary, value is anything that has a fair return in goods or services. Where there is a product or service there is value. The worth of a product or service is judged by the customer.

Non-value is any action or activity in a process that does not add value to the customer.

Some activities appear to be non-value-added. You need to look at these activities and decide if they are necessary to keep the process and outcomes intact. For example, obtaining the patient's signature on a HIPAA form. The patient may find that it is non-value-added but, it is mandatory that we do this.

Quality is the ability of your products and services to conform to your customer's wants and needs (also known as expectations and requirements).<sup>1</sup>

<sup>1</sup>. MacInnes, *Op cit*

### 3. Waste

- Exists in ALL work
- Exists at ALL levels of the organization!



Now we are going to discuss the third objective, waste and examine seven types of waste. Waste exists in all work and at all levels of the organization from the clerical staff to the physician. Waste is any activity that takes up time, resources, or space but does not add value to a product or service.<sup>1,4</sup>

If you stop and think about what you do, surely, you can identify times that you feel like you have “wasted your time.” Perhaps you were obtaining a patient’s signature and forgot one form so, you must call them back up to the window to sign again. The key to identifying the waste or non-value-added steps is to map your process and then examine it for value or waste.

The goal is to create the desired work environment where our office work and value would flow easily. We could do our work with:

- Fewer interruptions, stops, or waiting
- Meeting our patient’s needs
- Experiencing a balanced work load
- The best use of our resources, including our time
- A feeling of satisfaction that we did a good job

<sup>1</sup> MacInnes, *op cit*

<sup>4</sup> Marchwinski, *op cit*.

## Waste: Dictionary Definition

- To spend or use carelessly
- An unwanted byproduct of a process
- To damage or destroy gradually and progressively
- To squander

Merriam-Webster



Waste is non-value-added. It is simply a waste of time, people, or things. It consumes resources and does not add value to a process and is not something that the customer is willing to pay for.

Other definitions from Merriam-Webster include: to use, consume, or spend thoughtlessly or carelessly, to cause to lose energy or strength.<sup>5</sup> Synonyms include: misuse, throw-away, use-up, or dissipate.

Some everyday examples might include:

- Forget a key item for a recipe when you were at the grocery store, requiring another trip
- Failure to file your tax forms on time resulting in paying a fine
- Never change the oil in your car resulting in engine failure
- Leave your bicycle outside in the rain and end up with rusty spokes and poor performance of the gears or the chain that drives the wheels

<sup>5</sup> Merriam-Webster On-line, *op cit*

## Waste: Lean Definition

- Does not add value to the system
- Does not conform to customer's specifications
- Customer unwilling to pay you to do



The Lean definition of waste is: “any activity that consumes resources, but creates no value for the customer.”<sup>4</sup> Another explanation for waste is “Any activity that takes time, resources, or space, but does not add value to a product or service.”<sup>1</sup> It is anything that your customer would be unwilling to pay you to do. If some activity or step does not add value to the customer, it can be considered waste.

For example, running back and forth from the check-in desk to the file room to look at a chart instead of pulling it once is a waste of time. The customer would not be willing to pay for you to run back and forth to the file room. It would have been of value to pull the chart once and keep it on your desk for reference until you were finished with it.

<sup>1</sup> MacInnes, *op cit*

<sup>4</sup> Marchwinski, *op cit*

## Questions to Discover Waste

- Does this step add value to the process?
- Does this step add to the customer's satisfaction?
- If I removed this step would it be missed?



When evaluating your workflows for waste you need to ask yourself these questions. If a step can be removed from the process without decreasing the customer's satisfaction then it should be considered.

There are however, certain requirements that we must maintain in our processes that cannot be removed even though the customer probably would not miss them. An example is obtaining a patient's signature on a HIPAA form.

## Waste in Healthcare

***“The national numbers for waste in healthcare are between 30% and 40%, but the reality of what we’ve observed doing minute by minute observation over the last three years is closer to 60%.”***

*- C Jimmerson*



Consider the above statement by MS Jimmerson<sup>6</sup> and think about your office. These percentages are pretty high. Do you think that you could find 30% waste in your office work activities? Can you think of some of the activities in your office that are waste?

An example of waste would be escorting a patient to the examination room and then having to walk down the hall to pick up a gown and then walking back to the examination room to give it to the patient. It would be more efficient and save resources to have the gowns stored in the exam room, thus saving time and steps.

<sup>6</sup> Panchak P Lean Healthcare: It Works. [www.industryweek.com/currentarticles/asp/articles.asp?ArticleId=1503](http://www.industryweek.com/currentarticles/asp/articles.asp?ArticleId=1503). Accessed 12/23/03

## 7 Types of Waste

- Correction
- Inventory
- Wait Time
- Motion
- Space
- Processing
- Complexity



These are the most common types of waste found in the physician office setting. This list is comparable to the Lean list of Correction/Defects, Inventory, Waiting, Motion, Transport/Conveyance, Extra Processing and Overproduction.<sup>1,2,4</sup>

Next, we will take a closer look at each of these types of waste. These titles are “convenience tags” to quickly convey the central point. What you will notice as we move through the description of each is that some examples fit into more than one category. The important point is to understand how frequently waste happens.

As we review some of these categories of waste, some of the examples may be familiar to you.

<sup>1</sup> MacInnes, *op cit*

<sup>2</sup> Womack, *op cit*

<sup>4</sup> Marchwinski, *op cit*

## Waste of Correction

Anytime something needs to be:

- Double-checked
- Fixed
- Re-worked



Waste of Correction is the first type of waste. Defects are aspects of our service (or products) that do not meet specifications or our customer's expectations.<sup>1</sup> This can cause customer dissatisfaction.

When we need to correct things it creates waste. Sometimes there are checks built into the work we do, so that we double-check ourselves or someone else checks the work that we have done. This is a form of inspection that adds work and time to a process, but does it add any value? When things do not turn out as we expected or do not work properly then they need to be fixed. Is there a way to prevent defects, to prevent things from breaking or not working properly? Re-work means that the work has to be done over again. Perhaps we made a mistake on a form or we put the wrong date on an appointment card, and we must fix that mistake. This results in redoing the work and using more resources (employee time and paper forms or appointment cards).

Pay special attention to this area of waste. As you examine the process work flow you may uncover some details of waste of correction that show previously unknown inefficiencies. Find the factors that contribute to this form of waste.

<sup>1</sup> MacInnes, *op cit*

## Waste of Correction: Examples

- Calls to office because the patient can't remember provider's instructions
- Missed preventive care service:
  - Pneumococcal vaccine administered
  - Regular dilated retinal exam for patients with diabetes



Here are some examples of waste of correction that could be happening in your office.

An example of re-work is when a patient calls back to the office to clarify when she should use heat and when to use cold on her sprained ankle. This requires time of the receptionist and of the triage nurse. Another example may be that the physician forgets to write a prescription while the patient was in the office.

Failure to carry out preventive services is another form of correction. Does your office staff forget to offer a pneumococcal vaccination to a 65 year old patient when they are in the office for their physical exam? Or, does your office ever fail to check for the most recent dilated retinal exam for a patient with diabetes, then must follow-up with the patient at a later date?

## Waste of Inventory

- Excessive stock
  - Supplies
- Unused machines/equipment



Waste of inventory refers to any excess materials, stocks, etc. that are not directly required for our current work.<sup>1</sup> When we have too much inventory or stock supplies it adds to the costs of storing. If the storage room is very crowded with supplies and equipment, then it may take extra time to move things around and find the needed item. In addition, overstocking ties-up money, so that it is not available for other items or for earning interest.

Machines or equipment that are rarely used require storage and add to the clutter around the office. If a file cabinet is not being used regularly then it can be moved from the main work areas or eliminated. This can open much needed space for other uses, or to ease the movement of people, saving steps. Reducing the number of items in your work area to only those things that you use regularly creates efficiency.

<sup>1</sup> MacInnes, *op cit*

## Waste of Inventory: Examples

- Control of exam room supplies:
  - Too much of one thing
  - Not enough of another
- “Stash” of any sort:
  - Out-dated forms no longer used
  - Expired sample medications



This lists some common examples of waste of inventory in offices:

•Supplies: An office may have too much of certain supplies and not enough of another. It is important to have control of your supplies and monitor them closely. For example, it is the Medical Assistant's (MA) job to stock the exam rooms every morning before the patients arrive. If the MA continues to put more and more tongue depressors in the exam rooms, you could have a lot of tongue depressors in the exam rooms but think that you need to order more because the stock room is empty.

•Stash: An office may accumulate old forms that are outdated and no longer used. Excess inventory adds to disorganization which leads to waste in time, energy, and resources. Another example is expired sample medications. It is amazing how quickly these can pile up. Then, when a medication is needed for a patient, you find that it has expired.

## Waste of Waiting

- Long waiting lines (queues)
- Excessive non-productive time
  - Idle time while waiting
  - Bottlenecks



Waiting can be challenging to most of us. Waiting in line is also known as having queues. We may become frustrated waiting in line at a favorite restaurant or at the airport to pass through security. Waiting results in idle time.

In Lean, this refers to the periods of inactivity in a process that occurs because another activity does not deliver on time.<sup>1</sup> Let's use an every day example to clarify this. Think of people waiting in line at the grocery store check-out. If three of the check-out clerks are on break, this creates a bottleneck (or a log-jam). There are too many people trying to go to the two remaining check-out lanes. The flow of people through the check-out process is slowed considerably. The people in the check-out lines have idle time. People and shopping carts back up in the aisles. This interferes with other customers filling their shopping carts. Those waiting in line and those trying to shop become frustrated, upset and very dissatisfied customers.

In work processes, waiting time is a waste of resources because our productive time is decreased and work can back-up, and patients (or even other office staff) can be made to wait.

<sup>1</sup> MacInnes, *op cit*

## Waste of Waiting: Examples

- Patient waiting for provider
- Provider waiting for patient to get ready
- Waiting to use a piece of equipment
- “Work-in-process”



The waste of waiting is not an unusual event in many physician offices. Take a look at the first and second bullets. Most people can identify with these common types of waste. It would improve patient satisfaction if their waiting time could be decreased. Look at why the patient is waiting. It may be that the provider is chronically behind schedule or the patient appointments are over-booked. Additionally, office efficiency would improve and the physician would be happier if the patient is ready in the exam room when the physician is prepared to see the patient.

Sometimes waiting can be a result of bottlenecks, like several patients waiting to check-out when the check-out clerk is also taking care of the phone lines. Waiting to use a machine, like the electrocardiograph machine or the fax machine results in lines and idle time.

“Work-in-process” is another form of waiting. Are there piles of “stuff” waiting for someone in the office to take care of them? Are there medical records to re-file, labs reports to file, order forms to complete...when you have time. Find out what these piles are, why they are there, and who they are waiting for. Piles of stuff are signs of a bottleneck or a broken process. They are “goldmines” of opportunity for process improvement.

## Waste of Motion

- Inefficient/unorganized movement
- Inconsistent work methods
- Poor office layout
- Poor ergonomics



The fourth type of waste is waste of motion. Waste of motion is any type of unnecessary movement. All of us have forgotten something while shopping and had to walk half-way across the mall or the grocery store to get the item we forgot. This is wasted movement. For an example of working with maximum efficiency of movement, watch a window washer on a big building. They wash and swipe the window with fluid movements that do not waste time or energy.

Inconsistent work methods may cause one person to take extra steps when another can do the same job with less movement and obtain the same result. Compare a novice nurse doing a dressing change with a more experienced nurse. Thus, there is real value in examining our work processes to uncover the best way to do our work activities.

An unorganized office layout could contribute to waste of motion. How many miles do you walk during a regular day at your office? Are you taking extra steps, needing to walk around equipment, or working in a congested area that requires reaching and stretching to pick-up supplies?

Ergonomics involves designing work space and equipment to maximize human abilities and productivity. This involves the study of efficient position and movement in our daily activities. Workers making movements that are straining, stretching, excess reaching, etc., are examples of movements that do not fit with the way our bodies are designed. Ideally designed equipment is based on human engineering and reduces user fatigue and discomfort.

## Waste of Motion: Examples

- Hand-offs
- Excess movement of people,
  - Long walking distances
  - No requisition forms at back desk
- Excess movement of information



Some physician office examples of waste of motion are:

•Hand-offs. One staff member starts a project but does not finish it. They hand it off to another staff member who must orient him or her self to the assignment, taking up more time to rework the project. One example of a hand-off in the physician office is when one person does the stocking, another orders supplies and another restocks the storage room. Each person must share information with the others to make this process run smoothly. Otherwise, there will be an over supply of some things, some things that cannot be found in the storage room and insufficient supplies of needed items.

•Excess movement of staff. When staff must move to complete a job, one should look at how the number of movements or steps could be reduced. Do you need to go to the other side of the room to use the fax machine? Do you need to go down the hall to make a copy of something? There could also be extra movements looking for supplies, or moving stacks of papers to find a lost form. Waste of motion could also be filling out extra forms.

•Excessive movement of information. An example would be writing information on a sticky note until you feel like you have the time to pull a patient's chart and document the information in it. Another example would be that you are unable to locate a chart because someone did not file it in the correct place or it got left on the physician's desk.

## Waste of Space

- Poor office layout
  - Excess walking
  - Looking for resources
- Inefficient storage



The fifth type of waste is waste of space. Sometimes the physical layout does not allow for efficient work flow.

Sometimes space is being occupied by unnecessary supplies or equipment, and that space could be used for more efficient work flow.

Space can be wasted by clutter and those piles of “stuff” we keep. Look for areas of bottlenecks or log-jams. Where do you find people waiting? Perhaps, with a redesign of the office space these bottlenecks can be eliminated.

We can improve our workflow efficiency through organization. The goal is for our work space to make it easy to do our job. If your work space seems cluttered or disorganized ask “Does this item need to be kept here?” Ask “How often do I use this?” If we do not use it often, then it may be possible to store it elsewhere. This will decrease congestion and make it easier to do our work. Reducing clutter, eliminating unnecessary items, and organizing materials, makes it easier to do our work.

## Waste of Space: Examples

- Office space evolves leading to:
  - Extra steps
  - Inefficient storage
- Exam rooms not stocked or standardized
- Missing equipment or supplies



Some examples of waste of space in the physician office are noted here.

At times the office has added space or equipment without preplanning the geographic aspects of the work. For example, adding a fax machine. It may have been placed in an available spot, rather than where it would be easily accessible without interfering with the receptionist's work area.

Another waste is space that is being occupied by unnecessary supplies or inefficient layout. Sometimes things are kept in the midst of our busy work area when they are rarely needed or no longer used.

If exam rooms are not routinely stocked, or if items are not stored in the same location in each room, then office staff must search different spots for the supplies they need. Standardizing the location of items contributes to efficiency in caring for patients as well as in re-stocking rooms. One of the symptoms of this waste is the illusion that more space is needed when the real issue may be an inefficient process flow.

Keep the waste of space in mind when you are mapping out your process. Space can also be wasted by clutter and those piles of "stuff" we find in our work areas.

## Waste of Processing

- Unnecessary steps
- Missed steps
- Unnecessary work
- Misunderstanding directions



Waste of processing is the sixth type of waste. Waste of processing means adding unnecessary steps that do not create value, or missing important steps or pieces in the work flow that cause rework or correction.

Sometimes this happens because of communication issues, not understanding customer expectations, or the use of repetitious forms or approvals. Anything that requires extra handling, extra inventory, or seems like extra work should be examined. Ask yourself “Why are we doing this?” or “Is this step really important?”

You are probably beginning to see some similarities with the other types of waste that have been described. That’s okay because waste often manifests itself in more than one form. What we call it or which category we list it under is less important than recognizing it.

## Waste of Processing: Examples

- Unnecessary work
- Sorting
- Testing
- Work-arounds



The way to recognize waste of processing is to examine the process flow map in detail. Some reasons that waste of processing occurs are:

- Lack of communication
- Redundant approvals
- Stop-gap measures (work-arounds) which become part of the permanent process
- Un-defined customer requirements

In the physician office, some examples of processing waste are:

- Redundancy: several office staff ask the patient the same questions. One classic example is asking them about the medications they take. Patients get frustrated with this repetition.
- Sorting: in some offices, the receptionist answers all incoming phone calls and then forwards the calls to the triage nurse, or to the billing area or to the appointment secretary. The receptionist is like a personal telephone answering machine that does not require “push 1 for\_\_”
- Work-arounds: Do you routinely plug in the automatic blood pressure cuff because the batteries are not replaced regularly?

## Waste of Complexity

- Many steps in a procedure
- Many decision points
- Frequent “hand-offs”



Complexity is the seventh type of waste for physician offices. It is the opposite of simplicity. Not many people would use simplicity to describe the inner-workings of their office. Complexity is similar to “over-production”. It has extra steps that may not be necessary to do the work. It may be hard to know what to do next, or difficult to follow the process. In other words, it is hard to get to the desired outcome smoothly and efficiently.

When you do your process flow map, if you notice that you have a lot of decision points (diamonds) or many branches, it is probably a complex process and may have wasted activities or steps. Try to discover why there is complexity in the process and how it became so intricate or convoluted. One root cause of this complexity may be lack of understanding about the process. This could be a knowledge boundary (one is not sure how to do the work or what the job requires) or a role boundary (a lack of understanding of where one’s job begins and ends).

Frequent hand-offs (passing work from one person to another) can lead to complex work flow processes. Each person can add their own “twist” to the work resulting in different steps that are individualized to different people. In addition, when there are frequent handoffs the chance for error increases.

## Waste of Complexity: Example

- Patient's call gets forwarded around the office to several people
- Patient interacts with multiple staff
  - Receptionist
  - Nurse or Medical Assistant
  - Physician
  - Billing person
  - Appointment secretary
  - Referral coordinator

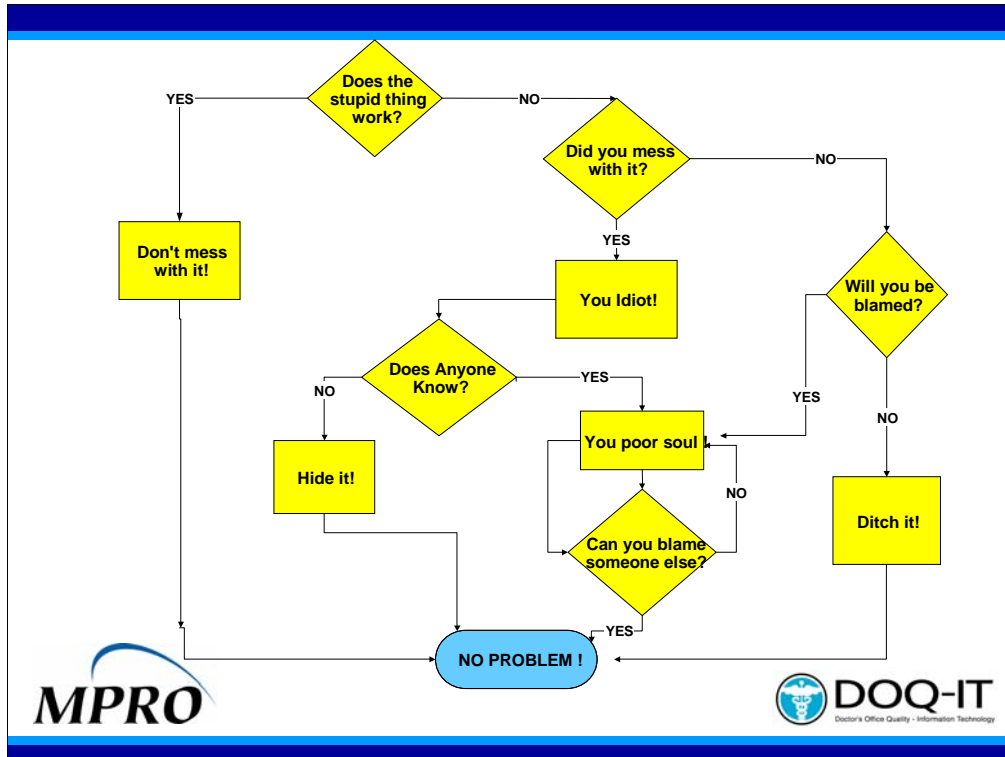


Complexity often shows itself as extra steps that may not be necessary in order to do the work and reach the desired outcome. Complexity can also lead to wasted resources.

One example of complexity is when a patient telephones the office for a prescription refill. What seems like a simple request may require a number of actions such as the following steps for the office nurse:

- Return phone call to the patient.
- Obtain patient's pharmacy phone number
- Check the patient's medical record, verify date of last physician visit, review the medication list, and the list of allergies.
- May then need to check with the physician
- Then, calls or faxes a prescription to the patient's pharmacy

Complexity may manifest itself as multiple hand-offs: the patient is greeted and receives some part of their care by multiple people in the office. During one office visit they may encounter more than five office staff members: the receptionist, the MA, the nurse, the doctor, the billing clerk, the referral coordinator and the check-out clerk.



This may be a familiar slide. This is a classic example of complexity.

Look at all of the waste! Time is wasted in rework because of trying to hide or ignore the problem.

## Summary: 7 Types of Waste

- Correction
- Inventory
- Wait Time
- Motion
- Space
- Processing
- Complexity



In summary, there are seven types of waste as listed here. When you are mapping your current state in your office, you will want to get down to a level of detail that reveals waste. Waste is anything that does not add value to the process, anything that does not help create conformance to the customers specifications (needs and expectations) and anything the customer would be unwilling to pay for. Waste consumes valuable resources.

Some of the reasons for this waste can be related to doing things the way we have always done them and refusing to examine other possibilities. In addition, we are human, and there may be many reasons for human errors that can lead to waste. Some of these human reasons are:<sup>1</sup>

- Lack of knowledge, skills, or abilities
- Mental errors, or loss of memory
- Sensory overload
- Mechanical errors
- Distractions

Waste can also be related to machines (the copier makes fuzzy copies), process methods as we have discussed throughout this SIM, or environmental issues such as noxious surroundings (fumes, noise, heat/cold, lighting).

<sup>1</sup> MacInnes, *op cit*

## Value and Waste Summary

- Map current processes
- Look for value added vs. non-value-added
- Capture all of the waste
- Work redesign to:
  - Eliminate waste
  - Increase value
  - Continuously improve



We have talked about how to recognize value-added vs. non-value-added steps in your work process map and explored how to identify waste in a process.

After mapping your work process, ask if each step adds value. Value is something that the customer would be willing to pay for.

Then, examine your process for waste using the seven types of waste to assist you.

It is important that you map your current process first, capturing all of the detail of the current work, noting value, non-value and waste so that you can later improve your processes.

## Questions to Ask

- Did my work activity
  - Save time
  - Involve a good deal of walking
  - Provide satisfaction
  - Limit re-work
  - Increase efficiency



The questions we can use to examine how we do our work are listed here. You may think of many additional questions to guide you in eliminating waste. This way you can concentrate on those activities that add value to your patients and to your work.

“When work flow is achieved, cycle times and lead times are reduced greatly, freeing resources to perform important tasks often ignored when workers are focused on correcting mistakes, resolving customer complaints, inspecting the work of others, obtaining multiple approvals, and so forth.”<sup>3</sup>

<sup>3</sup> Martin, *op cit.* page 2

## 4. Benefits of Finding Waste

- Improving the efficiency of work-flows
- Savings of time, energy, and resources
- Increases staff and customer satisfaction
- Potential for increased revenue



This is the fourth objective of the SIM: the benefits of finding waste. Throughout this SIM we have noted the important benefits of examining a process for waste, especially the seven types of waste. By identifying and removing waste from your work flow you will be improving efficiency.

You will not have wasted time, energy, or resources and this will certainly increase staff and customer satisfaction.

There is great potential to increase your office revenue by removing waste and increasing efficiency because of the savings in energy, time, and resources.

## Benefits of Eliminating Waste

- Recognize value in your work
- Meet customer expectations
- Manage your work
- Reduce costs
- Improve outcomes



By eliminating waste in our work we can focus on the value that we are providing to our patients and to our colleagues. We will feel that we are in control of our work and that we have met our own expectations as well as those of our patients. We will experience less frustration because we have eliminated many areas of waste that made our work more cumbersome, repetitious and challenging.

We will go home at night feeling satisfied that we have done a good job and that we were able to make a difference. We will feel less overwhelmed and more in control of our work. We will have coordinated work efforts that maximize our efforts while eliminating back-ups.

The cost of operating a physician office should show a benefit from the improved efficiency, reduced rework, decreased or absent waiting and other savings from eliminating waste. We will be able to control our costs through minimizing /eliminating waste.

Another major benefit is improved outcomes. We will have an improved process for providing care. Our patients will go home happier because we have cared for them with efficiency following standard guidelines.

## An Important Thought...

***“We get brilliant results from average people managing brilliant processes....***

***We observe that our competitors often get average (or worse) results from brilliant people managing broken processes.”***

- Taichi Ohno



This quote is attributed to Taichi Ohno of Japan, one of the leaders in Lean concepts. It speaks volumes for the value of process improvement.

Recall the earlier slide which quoted the amount of waste observed in healthcare processes as very high (30-40% and even up to 60%). This waste consumes valuable resources and by its very nature does not add value to the patient's experience in our offices.

Following Lean concepts, examining value and eliminating waste can produce quick results. Errors and waste are typically cut by one third to one half. And finally, our patient outcomes will be improved because we will be using value based processes to care for them.

The next few slides will list resources and references for your quality improvement work and contact persons at MPRO. Following these are directions for completing the nursing continuing education contact hour requirements.

MedQIC: [www.MedQIC.org](http://www.MedQIC.org)

- Improvement strategies and actions
- Effective tools and resources
- Improvement stories
- News features
- Search engine



MedQIC is a national knowledge forum for healthcare quality improvement. It is Web-based resource funded by the Centers for Medicare & Medicaid Services to empower the healthcare community to deliver the right care to every Medicare beneficiary, every time.

MedQIC provides effective and timely quality improvement tools, literature and resources for healthcare professionals. This resource provides information for physician offices as well as hospitals, nursing homes, and home health care.

From this site you will be able to:

- Download quality improvement resources
- Access a national directory of professionals
- Get first-hand information from experts and peers
- Receive updates on the latest resources

You will need to register to use this site. All MedQIC resources are non-proprietary and available at ***no charge***.

## References

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- Backer, LA. Strategies for better patient flow and cycle time. (2002, June). *Family Practice Management*. [www.aafp.org/fpm](http://www.aafp.org/fpm)
- Womack JP, Jones DT. *Lean thinking: banish waste and create wealth in your corporation*, Simon & Schuster, Inc. NY, NY 2003



Listed here are some references which may be helpful to you and your team as you embark on mapping your work flow processes and examining value and waste in your processes.

## References (Cont.)

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- [www.lean.org](http://www.lean.org)



You may find these references helpful in learning about Lean methodology and in your quality improvement work.

## Continuing Education (CE) Contact Hours

- Answer the post test questions
  - Minimum passing score = 73%
  - Minimum correct answers = 19/26
- Complete the evaluation
- Print your certificate

Thank You for Reading This SIM



Now that you have completed reading the “**How to Examine Value and Waste in Your Office Processes**” SIM, you may proceed to take the Post Test. If you think that you might need to refer to the module during the test, do not close the module; leave the module open or save it to your computer.

1. Select **Post Test** under “How to Examine Value and Waste in Your Office Processes”.
2. Complete the Post Test by selecting the best answer. Keep the Post Test open while you refer to the learning module. Once you have completed and submitted the test, you will be able to review your responses to each question and learn which of your responses were correct.
3. Click on “**Continue**”
4. Review your responses. If you fail to get 19 correct, you may retake the quiz. If you passed, click on “**POGAE2006**”.
5. Select **Evaluation** and complete this section.
6. Click on “**Continue**”.
7. Select **Print Certificate**. A certificate will print if you passed the test and completed the evaluation.
8. If you have difficulty with any of these steps, please contact the MPRO helpdesk at (248) 465-7450.
9. If you have any questions regarding the continuing education contact hours, please contact Carol Grubba at (248) 465-7337 or [cgrubba@mpro.org](mailto:cgrubba@mpro.org).

## Additional Information

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For additional information about MPRO QI materials and services, please contact Diane Dewey or Angela Vanker as noted on the slide.

MPRO would like to acknowledge the contributions of Kathleen Carter, RN, BSN; Angela Vanker, MPH; and Marie Beisel, RN, MSN, CPHQ in completing this self-instructional module.

The next self-instructional module "How to Set the Stage for Improving Your Office Processes" will introduce the team to goal setting and why change is important, especially if your office is considering an electronic health record.



MPRO offers free nursing continuing education contact hours. To find out what's new visit [www.mpro.org/continuing\\_education/index.htm](http://www.mpro.org/continuing_education/index.htm).