AMA | STEPSforward™

Starting Lean health care

Eliminate waste in the workday and equip the team to spend more time on patient care.

AMA IN PARTNERSHIP WITH SGIM Society of General Internal Medicine *Creating Value for Patients*

CME CREDITS: 1.0

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How will this module help my practice become Lean?

1. Descriptions of common Lean methods to help you select the right ones for your practice
2. Six steps to help implement Lean improvements in your practice
3. Answers to common questions and concerns about Lean thinking and methods
4. Case vignettes describing how practices are successfully using Lean techniques to organize workflows and provide better patient care

Increasing administrative responsibilities—due to regulatory pressures and evolving payment and care delivery models—reduce the amount of time physicians spend delivering direct patient care. By implementing Lean principles, physicians and staff are able to become more efficient as a practice by taking steps to eliminate waste, improve efficiency and add value for the patient. Lean thinking leads to cultural change, where all team members are empowered to identify sources of inefficiency and create innovative solutions to address problems.

Starting Lean health care
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Objectives
At the end of this activity, participants will be able to:
1. Identify a high–level champion and create an interdisciplinary improvement team
2. Utilize Lean tactics to identify sources of waste in clinic workflows
3. Empower front–line staff to make improvements or identify an improvement project
4. Select Lean methods of improvement, such as *5S*, *Gemba* or *process flow mapping*

Target Audience
This activity is designed to meet the educational needs of practicing physicians.

Statement of Need
In many practices, physicians and staff spend too much time on activities that do not add value to the patient. Some examples of waste in clinic workflows include the time a patient spends waiting during a visit, staff time spent waiting on the phone and staff time moving in and out of exam rooms looking for information. Waste not only causes frustration but also physical and emotional fatigue for physicians and staff. Implementing Lean in the practice can help eliminate waste, improve overall efficiency, and foster team cohesion. The Lean approach gives everyone the opportunity to identify sources of inefficiency and develop innovative solutions to address the problems. Enabling all team members to participate in the improvement process increases involvement, buy–in and ownership by everyone on the team. This module provides step–by–step solutions to identify and implement Lean improvements.

Statement of Competency
This activity is designed to address the following ABMS/ACGME competencies: practice–based learning and improvement, interpersonal and communications skills, professionalism, systems–based practice, interdisciplinary teamwork, and quality improvement.

Accreditation Statement
The American Medical Association is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Credit Designation Statement
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Claiming Your CME Credit
To claim *AMA PRA Category 1 Credit*™, you must 1) view the module content in its entirety; 2) successfully complete the quiz answering 4 out of 5 questions correctly and 3) complete the evaluation.

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About the Professional Satisfaction, Practice Sustainability Group
The AMA Professional Satisfaction and Practice Sustainability group has been tasked with developing and promoting innovative strategies that create sustainable practices. Leveraging findings from the 2013 AMA/RAND Health study, *Factors affecting physician professional satisfaction and their implications for patient care, health systems and health policy*, and other research sources, the group developed a series of practice transformation strategies. Each has the potential to reduce or eliminate inefficiency in broader office-based physician practices and improve health outcomes, increase operational productivity and reduce health care costs.

Disclosure Statement
The content of this activity does not relate to any product of a commercial interest as defined by the ACGME; therefore, neither the planners nor the faculty have relevant financial relationships to disclose.

Media Types

This activity is available to learners through Internet and Print.

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Introduction

What is Lean?

"Lean" is both a mindset and a method to engage physicians and staff in organizing their practice to run more smoothly. The focus of Lean is to eliminate waste, improve efficiency and add value for the patient.

Six steps to starting Lean:

1. Identify a high-level champion
2. Create an interdisciplinary improvement team
3. Empower front-line workers
4. Choose a starter project
5. Celebrate and spread
6. Sustain

1 Identify a high-level champion

Lean is fundamentally about culture change and therefore requires the buy-in of a high-level person, such as the Chief Operating Officer, Chief Medical Officer or lead physician for the practice. This high-level person serves as the champion for Lean improvement and should be dedicated to leading the effort. They should have sufficient authority and access to organizational resources to ensure that initiatives are progressing at the desired rate.

Q&A

Why is there an emphasis on waste?

Waste causes physicians and staff to spend time on activities that do not add value to the patient. Waste also causes physical and emotional fatigue for physicians and staff and contributes to frustration.

Can you provide examples of waste that I might encounter in my organization?

Examples of waste include the time a patient spends waiting throughout their visit, staff time spent waiting on the phone, walking down the hall to a printer and moving in and out of the exam room looking for information, other staff members or supplies.

How do we eliminate waste?

The core concept of Lean is to use meticulous attention to every step in each process to determine which steps add value from the patient's perspective and which do not. The goal is to maximize value and minimize waste.

How can Lean improve the way my practice operates?

Lean thinking leads to a shift in culture where all team members are empowered to identify sources of inefficiency and innovative solutions to address these problems. Lean works best with the buy-in and involvement of everyone on the team.

Q&A

I am already way too busy. Why should I consider Lean?

A small investment, such as Lean improvements that emphasize better workflows and eliminating waste, can pay big dividends.

Do organizations use Lean to transform their culture?

At its most fundamental level, Lean is about strengthening the culture in your organization. Armed with the language and the techniques of Lean as a quality improvement vehicle, your practice can be more resilient and adaptable to future changes in the health care environment.

2 Create an interdisciplinary improvement team

For each Lean improvement initiative, bring together an interdisciplinary team from all areas of your practice. This may include reception staff, medical assistants, nurses, physicians and representatives from pharmacy, lab, radiology, administration, information technology and/or the business office. It is important that everyone understands from the beginning that the group's purpose is to work together toward a common organizational goal.

Q&A

Should we include patients on the improvement team?

As part of their Lean improvement approach, some organizations create a patient advisory panel to help identify processes that could benefit from modifications. Other organizations invite patients to be part of internal improvement committees. Seeing the care your practice provides through a patient's eyes can be incredibly valuable.

As a practice manager, I think this sounds great. How can I get my busy physicians to engage?

Get one team that is already high-functioning to commit to trying a project. At the end it would be unusual if other physicians and staff weren't intrigued and ready to engage.

3 Empower front-line workers

Successful Lean projects are usually chosen and designed by the people doing the work. The role of the champion and other leaders is to foster an environment where on-the-ground staff can succeed. Projects are more likely to fail when managers jump in and try to do it all without involving the people on the front lines. Staff can use the following worksheet to submit improvement ideas.

DOWNLOAD Team improvement idea worksheet

4 Choose a starter project

Although it may seem daunting, the best way to learn Lean methodology is to dive in. Work as an interdisciplinary team to identify an important process to improve. This first project should be small but meaningful.

You may consider a *5S* starter project, which focuses on clean and organized workspaces to promote productivity and efficiency and minimize stress. *5S* stands for *Sort, Straighten, Shine, Standardize* and *Sustain*. Fewer errors are made when tools and supplies are in a reliable location and when less time is spent looking for misplaced supplies or missing information. You might be surprised how much more work gets done when the workspace is uncluttered and reliably organized. Use *5S* to reorganize a supply room, team documentation area or workroom.

SORT: For each item in the workspace ask, "Does this have a function in this area? If we remove it, will it matter?" One tip is to tag each item with a colored sticker to indicate how often you use it. Green tags identify items that won't be used in the next 48 hours, but are used at least monthly. These items could be moved to a nearby storage area. Yellow tags are for items used occasionally, but less than once a month. These could be moved to more remote storage. Red tags are for unused, broken or obsolete items that should be discarded.

STRAIGHTEN: Organize materials so that they are easy to find and close to where they will be used. The goal is to not waste time looking for supplies or performing unnecessary steps. For example, it is helpful to have all exam room supplies in the same place in each room. Another possibility is to strategically place printers in exam rooms and nearby hallways to save time spent entering and exiting the exam room to pick up printouts. Small boxes, trays and a label maker are handy tools to assist with organizing the selected area.

SHINE: Make sure all the materials in the workspace are clean and in good working order.

STANDARDIZE: Make it easy to keep the workspace organized. Place all supplies in the same labeled location in each office. For example, in one clinic, standardized procedure trays are created daily and brought into the room when needed. Clear instructions are posted where the trays are assembled so the standard set up is simple for anyone to follow.

SUSTAIN: Develop routines and share responsibilities to make the *5S* activities a habit for all team members.

Q&A

We know we are spinning our wheels in our clinic. What sort of workflow processes might we tackle?

Ask your staff where they would like to start. Examples of small but meaningful starter projects include: decreasing the number of steps in the patient registration process, decreasing wait times for appointments, reducing faxes between different offices or departments and improving inbox management.

Do we need to hire a Lean consultant?

Many organizations hire a Lean consultant to assist with organizational culture change and large-scale improvements. The consultant makes sure all employees are taught the language and the methodology

of Lean, and that they are engaged in change events that impact their work. On the other hand, it is not necessary for every practice to hire a consultant or facilitator to begin to develop a culture of Lean thinking. This module was intentionally created for practices and organizations that want to move to a Lean way of thinking to improve efficiency with their existing resources.

How can we find time to do a *5S* project?

Many groups will close their office for a half day or bring their staff in on a Saturday morning to rigorously clean out and organize their workspace. This is often accompanied by some fun team-building activities. Others will conduct Lean improvement during a dedicated morning or evening session on a weekday. Hopefully, the time investment will be worthwhile because your team will be able to work more efficiently.

How many changes should be made at a time?

It is usually best to start small and implement one change at a time. This way you can determine if your change is having the desired effect.

Additional common Lean tools and tactics:

- An ***A3*** is a one-page visual display of the process improvement project being undertaken. The *A3* document provides a snapshot of the activity to keep all stakeholders and supporting leadership informed. *A3* can be used to track the progress and success of a Lean project or initiative.

- ***Gemba*** means "the real place" in Japanese. It reminds Lean thinkers and leaders that work is happening in exam rooms, waiting rooms and on the floors, not in offices or conference rooms where many leaders and decision-makers spend their time. *Gemba* encourages and supports team-oriented and front-line-driven improvements.

- ***Go and see*** is a tactic that starts with observation on the front lines where work is done. ***Go and see*** can help you use *Gemba* principles. Learning from staff who most intimately know the work often yields practical solutions to interdisciplinary challenges. Leaders who *go and see* observe a process and understand how the outcome is really achieved, rather than simply trusting what the written procedure says.

- A ***Kaizen event*** brings together front-line workers and leaders to map and analyze a process, then work together to redesign or improve the process. Involving all stakeholders helps the new process take hold after the *Kaizen event*. The purpose of these events is to make proactive, incremental changes, leading to greater sustainability and ongoing improvement.

- ***Quick wins*** can be accomplished locally by a single person or a team that identifies waste and makes a change to reduce or eliminate it without a *Kaizen event*, in-depth Lean analysis, resources or the support of the Lean champion. *Quick wins* can energize and involve members of the team. Celebrate even the smallest *quick wins* that are accomplished by the team.

- Visually map a process from beginning to end using a ***process map*** to help the team identify what work is actually being done and where opportunities for improvement may exist. *Process mapping* is most frequently used to identify key process steps, sources of waste and changes that could result in creating the ideal workflow.

Use this toolkit to visually map process flows in your own practice. Creating a customized process map will help your team identify what's working, and where opportunities for improvement may exist.

DOWNLOAD Process map toolkit

5 Celebrate and spread

Share how you've improved processes with others in your practice. This helps build a team culture and strengthen connectedness. Small celebrations of success will contribute to an atmosphere of camaraderie within the practice.

It's also important to note that not all solutions will work. It is okay to try an improvement and discover that it doesn't work or is not a good fit for your practice. This is not a failure. In this case, a team can celebrate the problem-solving and learning process.

6 Sustain

The final step in Lean improvement is to make the improvement stick. You can encourage lasting change by naming the new process and making it part of standard work for everyone involved. Remind staff of the improvement with visual systems that reinforce the new process, such as a checklist or flow diagram at the point-of-work. For example, if the improvement was creating an expanded rooming process for the nurses or medical assistants in the practice, name the new process "Advanced rooming." Make sure that every clinical assistant's computer has a list of the advanced rooming tasks to remind them how to properly perform each step. **Team meetings** can also be used to reinforce new processes by providing an opportunity for regular check-ins that continue to celebrate success and identify additional improvements.

Q&A

How much baseline and post-intervention data should we collect to assess the impact of our changes?

These are small tests of change, not publishable research studies. For small interventions, such as putting a printer in every room, you may only need to measure for a day or a week pre- and post-intervention to determine if this saves clinicians time. In some instances a simple survey of your staff can be enough to demonstrate measurable improvements.

We are a small organization without a budget for data analysts. How can we do all of this measurement and still take care of patients?

Small, informal measurements are often sufficient. Having patients take a simple survey can give you a lot of information. For example, if you want yes or no feedback from patients about a new process give each patient a poker chip and have them place it in a "Yes" or a "No" basket on their way out of the office.

AMA Pearls

Leaders as facilitators

Lean improvement requires that leaders shift their approach from being managers who design new processes to facilitators who support problem-solving and encourage staff to take action. Successful facilitators ask, listen and support the team. Lean thinking shifts leaders from a stance of "command and control" or "design and deploy" to one of discovering and empowering.

Common vision

Develop a common vision for Lean improvement that rallies leaders and employees around a shared purpose. Examples of unifying statements include, "The needs of the patient come first" at Mayo Clinic and "Our promise to patients: We will know who you are and will be ready for you" at Borgess Health.

To set their common vision, ThedaCare™ in Appleton, WI, developed a guiding narrative around a fictional patient named "Lori." Lori is a middle-aged woman caring for her aging mother, her husband and her children. Lori's needs help focus the work of the organization. For example, in designing a new Lean process to pre-register patients by phone the staff considers the impact this process will have on Lori.

Common language

The counterpart to a common vision is a common language. In crafting a common language, some organizations have coined their own terms that suit their Lean improvement activities. For example, "flow-stopper" could be used to describe any activity that impedes patient flow. Many organizations adopt the nomenclature of Lean, including the tools that are outlined in this module, such as *5S*, *A3*, *Gemba* and *Kaizen event*.

Flow stations

Several clinics have developed "flow stations" as a result of their Lean analysis of work and waste. In a flow station the physician, nurse and/or medical assistant sit next to each other rather than in individual workspaces in separate rooms or down a hallway. The nurse/MA is the "flow master" responsible for directing non-visit-based work to the physician in manageable batches. Forms, phone calls and emails are broken down into small blocks that can be addressed in the short intervals between patients throughout the course of the day. This "in flow" Lean approach reduces the inherent waste in unused down time and enables the physician to finish work earlier. Some organizations report that their physicians finish their work 30 minutes earlier when using the flow station configuration.

Workload balancing and cross-training: team rather than task orientation

Workload balancing means optimizing task distribution and maximally utilizing the people in a system to improve workflow. Cross-training of roles allows flexibility, so that when the demand varies workers can "flex," or adapt, to prevent breakdowns in the flow of work. For example, if three nurses on a team can each room patients and do phone work (e.g., triage, advice calls, etc.) they can quickly shift work to meet the needs of the practice. When the need to room patients is high, all three could focus on rooming. If the phones are unusually busy, they can adjust from one nurse to two nurses answering phones.

Work conceptualized as team-oriented rather than task-oriented is easier to flex. In the team-oriented example above, all three nurses see their roles as supporting the work of the entire team. In a task-oriented approach, one of the nurses may see herself as the desk nurse who is only responsible for triage and advice, whereas the other two may see themselves as responsible only for rooming patients. Team-oriented work makes the whole team function more efficiently and with greater cohesion, allowing them to more easily and efficiently meet patient needs.

Stop the line

Front-line staff see hazards in the system that may not be apparent to leadership. For example, in a Lean environment, an assembly worker who sees a defect is empowered to "stop the line," or to shut down the whole assembly line system. The line does not start again until supervisors come to the scene and the defect is addressed. Practices can encourage clinicians and other staff to report near misses or other safety concerns. While an immediate stop may not be feasible in many health care situations, reporting defects for leaders to respond to is still a critical responsibility of front-line workers.

Group recognition

Recognition and reward in a Lean culture is often at the group level, rather than at the individual level. With Lean improvements, the focus changes from producing volume (e.g., the number of patients seen) to producing value (e.g., the number of patients who have all of their needs met).

Situational awareness

Pilots need to see all of the essential data on their control panel at a glance. Health care workers can also benefit from being able to quickly view all crucial information. Line-of-sight and visual cues are ways for staff to access this crucial information to help a clinic's efficiency. For example, when the nurse can see the status of each of his exam rooms from his station he will know when a room is free and act on this information to room another patient.

Visual management system

A *visual management system (VMS)* is a tool to promote situational awareness. A *visual management system* uses symbols, colors and pictures instead of text to more quickly and reliably create situational awareness. With this type of system, staff have unmistakable visual cues in their work environment so standards and activities are obvious and a high level of performance is maintained.

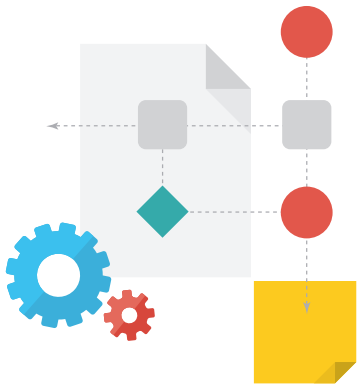
Example 1: A clinic call center
A *visual management system* at a call center might include a yellow screen if an incoming call hasn't been answered in 30 seconds and a red screen if the call hasn't been answered in 60 seconds, alerting all, including managers, to the need to pick up the call.

Example 2: A clinic
In a clinic, a *visual management system* might be a whiteboard listing physician schedules, staff schedules and roles on a daily basis, how many patients are on each physician's schedule and any indications that a physician is falling behind on patient visits and may need assistance. Similarly, a patient's status during their visit and which team member or service they are waiting for can be communicated to the entire care team with flags outside an exam room door or colored dots in the electronic health record (EHR).

Example 3: An office setting
In a clinic administration office, a *visual management system* might be a list of key problems and the status of work on each item. In a storage room, a *visual management system* would include labeling what supplies belong where and when applicable the label will have a corresponding picture of the item. Some clinics and organizations line their halls with data about every aspect of their work, including financial, quality and satisfaction metrics. These data are regularly reviewed and used to drive further improvements. For example, leaders and their direct reports make weekly data rounds in these hallways to talk to front-line workers and strategize how to make processes better.

Conclusion

Lean approaches can bring about cultural change. Becoming a Lean organization has several advantages, including: reducing or eliminating waste of time and/or resources, improving overall efficiency and fostering team cohesion. The information in this module will help you identify opportunities for Lean improvements and learn how to enact them in your practice.



STEPS in practice

1 How's it working in Ann Arbor, MI?

The Taubman Urology Clinic at University of Michigan Health System has been using "Lean in daily work" for over three years in clinics and call centers. With this approach, they track, post metrics and solve problems to create value for patients. Interdisciplinary teams at all levels of the organization are invested in "Lean in daily work." Teams huddle daily with their supervisors to call attention to and solve problems. The medical director's "standard work" includes weekly leadership walks to engage with staff and support their progress. Clinical and clerical staff members can actively engage in this culture of continuous improvement by using "Everyday Lean Ideas" (ELI) worksheets to propose improvement ideas.

DOWNLOAD Team improvement idea worksheet

Using ELIs has required a shift in the manager's role from primary problem solver to coaching the team to solve problems. The ELI system works because of the assumption that the workers actually doing the work are in the best position to improve it. With ELI, front-line workers identify problems and waste, investigate root causes and propose solutions to test.

The ELI form is quick and easy to submit. Department managers are committed to giving rapid feedback on proposed ideas. Many suggestions are endorsed on the spot as "Just Do It;" others may still need manager involvement or Lean intervention to resolve and implement a solution.

Electronic tools are used to document and track the ELIs. This allows the information and learning points to be shared internally to the Urology Clinic as well as widely throughout the organization.

Examples of ELIs that have been implemented include:

- Placing a list of physicians' glove sizes in each procedure room, enabling the medical assistant to set up the room with the correct gloves for the specific provider each day.
- Creating a "concierge card" that travels with the patient during their visit. The card lets the provider know who (family member, friend, neighbor, etc.) has accompanied the patient to the visit, and after the visit the card serves as a reference for the patient by listing the name and role of everyone from the practice who participated in his/her care that day.
- Posting signage on restroom doors near the entrance to the multispecialty facility to alert Urology patients to report directly to check-in before using the restroom. This makes it easier to collect urine samples needed for a visit.

Many of the ELI suggestions are simple and low cost, but collectively they have contributed greatly to the effectiveness and efficiency of the clinic's operations.

2 How's it working in Appleton, WI?

Walk into any clinic in the ThedaCare™ system in central Wisconsin and you will see walls lined with data that is organized around the True North compass, with the points of the compass being quality, employee engagement, productivity and the customer experience. Metrics on these four points are captured at every level, from the particular area (lab, call center, provider) to the clinic, the division and up to the corporate level. Each zone of the clinic has its own 6 feet by 6 feet data board that displays run charts of metrics under each of these categories

of the True North compass. Even patients are part of the measurement focus. The percentage of no-shows and patients who arrive on time are tracked and reported on graphs in the waiting area.

Once a week the clinic leadership team does walking rounds to review metrics and discuss improvement strategies within a particular area. Each data set is rolled up to the clinic manager who reports data to regional leadership along the True North framework. In addition, once a month the physicians, nurses, MAs, reception staff and quality improvement specialists meet to review quality data and identify improvement strategies within their area.

3 How's it working in Rolla, MO?

"Lean workflow and workspace redesign are the most progressive and innovative initiatives we have accomplished in the last several years." – Randall Huss, MD, President, Mercy Clinic, Rolla Division

The team at Mercy Clinic Family Medicine in Rolla, MO, knew their current processes were broken, but it was hard to visualize changes to the way they did their daily tasks in their work environment. During a retreat, providers, managers and nursing staff went through a Lean value stream mapping exercise for each process that makes up a patient care episode. This helped the team see the waste and inefficiencies in the way they were used to practicing.

After redesigning their practice workflow in their current environment, their new building was intentionally designed with Lean principles to include just-in-time inventory, standardized room designs and pods to eliminate wasteful steps. At first there was some resistance to the new layout, such as co-location of provider and support staff. Resistance disappeared once the staff moved into their new workspace. Providers were able to contrast the quiet environment with their former noisy offices and experience the ease with which they could turn around and talk to their nursing team and get things done rather than having to text everything back and forth.

The new clinic layout included a printer in every exam room. Despite initial concerns, it has not been a problem for IT to support so many additional printers. The nurses in particular appreciate having printers in the exam rooms because it saves them time entering and exiting the exam room to retrieve patient orders and visit documentation.

The team designed the clinic layout to make it easy to walk back and forth among the clinical areas to talk to a colleague or get a curbside consult, which occurs frequently. Clinician lounges offer another opportunity for providers to interact, especially at lunch, which helps strengthen Mercy Clinic's culture.

4 How's it working in Boston, MA?

At Harvard Vanguard Medical Associates in Boston, MA, "measurement IS the magic." The location of 7:30 a.m. weekly clinical operations meetings is appropriately named "Mission Control" because it is wallpapered with whiteboards filled with diagrams, metrics, workflow analyses, ongoing project status reports and overall schedules. During these interdisciplinary team meetings, improvement specialists, physicians and nurses tackle a list of open improvement issues—reviewing the status of each and identifying barriers to improvement, responsible parties and expected due dates. They review the status of recent "Rapid Improvement Events" (one- to two-week intensive Lean activities) as well as long-term projects.

One Rapid Improvement Event involved optimizing the automated phone triage system. Formerly, the only option was "Press 1 for medical advice." The team reviewed data and quickly learned that most calls were for refills, followed by appointments and then medical advice. As a result the team decided to reorder the automated options accordingly, so now "option 1" connects the patient to someone who can assist with refills, "option 2" is for appointments and so on. This enables Harvard Vanguard to more quickly get the right calls to the right people to quickly meet their patients' needs when they call.

The pursuit of standard work is the cornerstone of Harvard Vanguard's Lean philosophy. For every work process, there is a clearly defined series of steps completed by those who do that specific work. Their standard tasks for

all roles built into larger processes have been mapped. For example, patient form completion starts with medical secretaries when the patient arrives in the clinic, moves to LPNs when the patient is taken to the exam room for their visit and ultimately the physician completes any final work and signs off. To help all staff members standardize their processes, team members periodically observe each other in an informal peer-to-peer audit. If the worker gets the process right, the auditor shows a green card. If the standard work is completed incorrectly, an orange card is shown. The purpose of the audit is not to scold workers but to identify how consistently a process actually occurs and whether a member of the team needs assistance or additional training.

Harvard Vanguard's commitment to Lean process improvement has benefitted the whole team. They have achieved greater efficiencies by eliminating waste, and they are able to provide better, safer care to patients.

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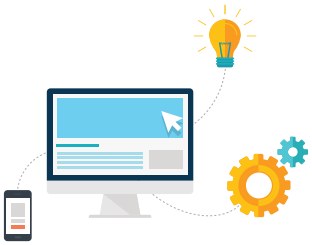

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