Quality Improvement, Patient Safety & Efficiency in Outpatient Practice

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Acknowledgements

This manual was developed and created with the input and assistance of many contributors. To the author’s knowledge, at the time of writing this guide, a concise text on the quality and investigation process designed specifically for the ambulatory care setting did not exist. Therefore, this guide is intended to correct that and promote, encourage and facilitate the learning and application of a simple quality investigation method and provide tools for use in the outpatient setting. This guide was created as the Action Learning Project in the Patient Safety Leadership Fellowship program class of 2009/2010. The Fellowship program allows like minded people working in healthcare to come together to learn new concepts, tools, techniques and mental models around problem solving and improvement process which may then be applied to changing healthcare for the better in all settings of the healthcare delivery system including acute care, outpatient care, professional liability companies, patient advocacy groups and communities both here in the U.S. as well as abroad.

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HOW TO USE THIS MANUAL

The purpose of this manual is to provide guidance in quality improvement, risk management and patient safety, and is a teaching guide for outpatient and ambulatory care settings.

The goal of this manual is to provide information regarding quality concepts; why they are important (now more than ever) and how they can be used to improve care and service. Specific information is provided regarding:

- methods to employ best practices,
- techniques to prevent error,
- resources to enhance the culture of safety
- tools to understand, investigate and correct system failures and human factors contributing to medical or service related error.

Quality and investigation concepts have been widely taught and used in the acute care setting for years; however the concepts have not been fully integrated into the outpatient care setting this manual serves to provide that information.

This manual includes the “proactive”, prevention and patient safety focused approach to quality improvement. The tools included relate to tips for collecting data, diagrams for explaining the process, embedded web links to definitions and in depth explanations of terms and concepts to enhance the user’s ability to implement quality improvement, patient safety and risk management techniques.

The expected outcomes for users of this manual include:

- understanding care process in relation to quality improvement
- implementation of best practices
- preventing, detecting and correcting risk issues and medical error
- enhancing overall service outcomes and business practice.

This manual will allow the MPIE insured physician, with their practice manager, to develop and implement a quality program and conduct a quality improvement project which will satisfy the office activity requirement for the premium discount program.
INTRODUCTION

The evolution of quality improvement and patient safety in healthcare is impacting the outpatient care practice in new ways. A provider’s reputation, earning ability, and scope of practice are all becoming more dependent on the ability to deliver positive quality outcomes. Quality outcomes are also becoming a greater focus in both re-licensure and board certification.

Historically, a majority of healthcare was provided in the acute care setting however that model is changing and patient volumes are shifting to the outpatient setting. As a matter of fact, between 1995 and 2004, the number of outpatient visits rose from 414 million to 571 million.1

The Institute of Medicine (IOM) report, To Err is Human: Building a Safer Health System, released in 2000, was the impetus for enhancing quality outcomes and patient safety in healthcare. What had always been important in patient safety now became an imperative. The IOM report indicated that 44,000 to 98,000 people die each year from medical errors. Even at the lower number (44,000) it suggests that medical errors are the eighth leading cause of death, higher than motor vehicle accidents or breast cancer. The following data adds to this concern:

- One out of every seven outpatient care visits includes a medical error of some kind. Of those errors, 24% result in harm and 70% have the potential to cause harm.2

- Institute of Medicine report for 2006 stated that approximately 530,000 Medicare beneficiaries in ambulatory care clinics experienced a medication-related error in the year. 3

- In a study limited to ambulatory care, 59% of all settled malpractice claims involved diagnostic errors that caused patient harm. 4

- The five major causes of medical errors in primary care are: ordering medications, implementing lab tests, filing system errors, dispensing medications, and responding to abnormal lab test results. 5

4 Kairys J.A.: Top 5 causes of medical errors in ambulatory care. For the Business of Medicine, PRI-MED Patient Education Center, Jan. 2007.
5 Runny, loc.cit, p.36.
Quality improvement tools and concepts for the physician practice have been limited in development and primarily provided by commercial health insurance organizations, managed care or physician hospital organizations (PHOs) through pay for performance initiatives like the Blue Cross Blue Shield Medical Home project.

Improvement initiatives undertaken as a result of payment incentives have great potential benefits for the practice’s bottom line as well as for those patients suffering from the targeted disease state. Programs such as these have the capacity to reach many practices, so long as the practice participates with the initiative. The multiple program goals are often duplicative and focus on singular disease states (diabetes and asthma). This singular focus on certain chronic disease states limits the potential for widespread application of the quality improvement process across all aspects of practice management as well as to clinical care.

Outpatient care organizations require a different set of strategies for keeping patients safe. Unfortunately, the majority of patient safety benchmarks and improvement initiatives have primarily targeted hospitals which may not directly translate to the outpatient care setting. As such, this manual provides the resources and tools that will help providers and their staff improve care in their offices, clinics and centers.

This manual will provide answers to the following:
1. What is quality and patient safety in the outpatient setting?
2. Why should each practice have a QI plan?
3. How should quality improvement be measured?
4. How should improvements and achievements be evaluated for effectiveness?
5. How to integrate quality, risk management and patient safety concepts into everyday business practice to create system reliability and positive outcomes?

Welcome to the journey.............
Chapter One

PATIENT
SAFETY
SCIENCE

IYAD WYAD, YWAG WYAG
“If you always do what you always did, you will always get what you always got.”

J. “moms” Mabley
PATIENT SAFETY ORIGIN AND CONCEPTS

Patient safety science is made up of all sorts of acronyms such as: HROs, IOM, NPSF, FMEA, RCA, TJC, IHI and concepts that may seem foreign like: human factors engineering, error analysis, error reporting systems, safety design, the human-machine interface, and reliability theory. In this chapter the concepts and origin of safety science will be outlined; and the integration of patient safety and quality improvement will be described.

Historically, it was taught that the practice of patient safety meant being careful not to cause an error or harm. This understanding, however, is inadequate in today’s health care environment. According to the National Patient Safety Foundation (NPSF), a definition of patient safety includes the "avoidance, prevention, and amelioration of adverse outcomes or injuries stemming from the processes of health care itself." In order to effectively meet the intent of this definition, a basic understanding of how errors occur and how to prevent, detect and correct them through the use of quality improvement tools will be outlined.

The best place to start learning about safety science is with the seminal report To Err is Human: Building a Safer Health System, published by the Institute of Medicine (IOM). This resource provides a clear overview of the recent and ongoing epidemic of medical errors.

It is in the IOM report that we find the origin of the often cited estimate of how many Americans die each year as a result of preventable medical errors. The estimate is 44,000 to 98,000 preventable deaths per year. Many argue that this number is too high and others believe it is too low. It is not the number that should be the focus, but rather the prevention and improvement in patient safety.

“Even using the lower estimate of 44,000, medical error is the ninth leading cause of death in the United States — surpassing deaths due to motor vehicle accidents, chronic liver disease, alcohol- and drug-induced causes (combined), and a variety of cancers, including breast, stomach, and prostate.”

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The IOM report opened the eyes of many stakeholders regarding the dire condition of the healthcare delivery system. The report outlined a new era of accountability based on measurement and data to capture improvement. Measurement of errors is important as it is the key to risk identification and demonstrates the need for improvement through analysis and trending. Measuring or benchmarking outcomes data for the identification of trends and areas of overuse, under-use and misuse of health services may lead to a closer examination of processes and motivate change –for the better.

**SWISS CHEESE**

There is a common analogy used in patient safety whereby a slice of Swiss cheese is meant to represent a barrier to error and the holes in the cheese as gaps in the process where, when aligned, can cause error. Imagine each slice of Swiss cheese as a “barrier, or safety process” to prevent an error from reaching a patient. Imagine each hole represents an unintended weakness or failure in the process that could allow for an error to reach the patient. If four slices of cheese were lined up like dominos from end to end – would any of those holes line up? Many times they would and if they do these holes represent the trigger for an adverse event. These weaknesses (holes) in the delivery process are not constant in real life; the holes open and close at random. However, when the barriers set in place (procedures, technology, training, etc.) are not effective and the holes do line up that error or adverse event can cause harm to the patient (Figure 1). This concept of the Swiss cheese model of human error was first proposed in 2000, by James Reason, a Professor of Psychology. He proposed this image of Swiss cheese to explain the occurrence of system failures, such as medical mishaps.
The Swiss cheese model of how defenses, barriers, and safeguards may be penetrated by an accident trajectory

The model allows clarity around how major accidents and catastrophic failures tend to reveal multiple, smaller failures that lead up to the actual error. For example, consider an outpatient surgical procedure. The slices of the cheese representing barriers in the prevention of error might include the process of informed consent specific to the procedure, the time out process, signing the site verification, reviewing the medical record and checking the previously marked site against the consent form. Many more layers exist, however no single barrier is foolproof. Each barrier has “holes” hence the Swiss cheese. For the serious preventable error like wrong site surgery, alignment of the holes is an infrequent occurrence; however, even that rare occurrence is unacceptable.

Sometimes, in rushed, unusual or urgent situations, several holes in the slice of the cheese will line up. Often this is due to a breakdown or failure in established process. Normally, the slices of cheese and the location of their holes are independent, making the barriers more effective, as they are in constant flux depending on the variables of the situation.

Pressure for efficiency, interruptions, distractions or failures to perform safety protocols can all result in an accelerated lining up of the holes allowing for the error to reach the patient. This type of failure, when the holes line up more often than expected (failures in system design or failure in human performance), occurs more frequently than expected. In fact, many of the systems problems
discussed by Reason such as poorly designed work schedules, lack of teamwork, variations in the design of important equipment—are sufficiently common that many of the slices of cheese already have their holes aligned. In such cases, one slice of cheese (barrier to prevent harm) may be all that is left between the patient and significant injury.

ACTIVE FAILURES AND LATENT FAILURES

According to Reason, most accidents occur because of one or more of four types of failures:

1. **Organizational influences**—such as eliminating CPR training for office staff due to economic hard times.
2. **Unsafe supervision**—might include the delegation of prescription refills to a non-clinical staff member without physician review.
3. **Preconditions for unsafe acts**—could be an on-call system that resulted in a fatigued surgeon operating for more than a safe time frame due to multiple trauma cases.
4. **The unsafe acts themselves**.

The model also includes the concepts of active failures and latent failures. **Active failures** encompass the unsafe acts that can be directly linked to an accident, such as (in the case of aircraft accidents) pilot errors. Pilot error can be defined as a mistake, oversight, lapse in judgment, or failure to exercise due diligence by an aircraft operator during the performance of his/her duties. If the error occurred unintentionally, yet there was an intentional disregard for a standard operating procedure (or warning) the pilot's actions would be reviewed and action would be taken to address the system issues that allowed the error and the behavioral choices. In summary an active failure is often based on a behavioral choice and a conscious decision making process.

In contrast **latent failures** are not open and obvious (easy to see) whereby active failures usually are. A latent failure is one that is generally only obvious in retrospect if at all. Determining the contributing factors for the latent failure often requires a root cause analysis. (Root cause analysis (RCA) is a class of problem solving methods aimed at identifying the root causes of problems or events.)

An example of a latent failure in healthcare could be the similar packaging of two different prescription drugs that are then stored close to each other in a pharmacy. Such a failure would be a contributory factor in the administration of the wrong drug to a patient. Much research has led to the realization that medical error is usually the result of "system flaws, not character flaws", and that in a “Just Culture” both system causes and human factors are reviewed to determine appropriate action and risk reduction. (Refer to the chapter on Safety Culture for more discussion on system vs. human failures.)
HUMAN FACTORS (OR HUMAN FACTORS ENGINEERING)

**Human Factors** engineering is by far the most advanced area of patient safety in terms of system and product design. A leader in human factors is [John Gosbee, MD](https://www.mcllvaneagles.com/about). At the University of Michigan, Dr. Gosbee’s teachings focused on how there are inherent design flaws (ones that left the human component out of the design) in products and systems all around us. Human factors concepts help healthcare professionals understand the strengths and weaknesses of human, physical, and mental abilities and how these affect the systems design and failure opportunity. Human factors focuses on how people interact with tasks, computers or other machines and the environment, keeping in mind that humans have limitations and capabilities. It is these limitations and capabilities that are applied to the design of products, processes, systems and work environments to improve performance and reliability. This design also contributes to user satisfaction, while reducing operational errors and user stress. It is a unique field of study because it focuses on the relationship between humans, technology and the environment.

One of the most publicized human factors failure is the Heparin medical error that caused the death of 3 premature infants and injured 3 more. Unfortunately two years later this same failure occurred to a national media figure’s (Dennis Quaid) baby twins. As you can see in the photo below the bottles are similar. Both bottle labels use the color blue, for the 1000 unit dose, light blue, and the 10,000 unit dose, dark blue, - a mix up that easily led to a 1000 times overdose.

This is a good example of how a poor design contributed to human failure. From a human factors point of view the nurses or pharmacist had what is termed a skill based error which can be caused by a lapse in memory, an oversight, [change blindness](https://en.wikipedia.org/wiki/Change_blindness), [automaticity](https://en.wikipedia.org/wiki/Automaticity), fatigue, or time pressure all issues that contribute to failure and error.
To reduce the likelihood of human factors related errors many techniques have been implemented such as:

- Double check process for high risk medications
- Removing high does or toxic medication vials from standard bins
- Use of bar coding
- Use of CPOE
- Change in medication labeling

Another example of a human factors component in outpatient and inpatient healthcare settings may be the Wong-Baker FACES Pain Rating Scale.

![Wong-Baker FACES Pain Rating Scale](image)

This pain scale is often used in orthopedic and pediatric practices to ask the patient how much pain they are experiencing. This is a great way to ask about general pain severity that would be useful for patients with limited English proficiency as well as children. Humans have a very tuned sense for faces and emotions. This scale takes advantage of both with caricatured faces and somewhat extreme emotional representations. Thus, the human interaction with the design and environment results in a better outcome.

Another area of human factors influence is in standardization of equipment, such as the choice to purchase digital thermometers in the outpatient care setting (i.e., a large multispecialty clinic picks a single manufacturer/product line, so that each office has the same digital thermometers). This is an example of a very basic application of a heuristic (loosely defined or informal rule often arrived at through experience or trial and error. Heuristics provide cognitive shortcuts in the face of complex situations, and thus serve an important purpose) form of human factors, that equipment is standardized within a system wherever possible. Standardization allows this clinic to share staff more easily as they will all be familiar with the technology no matter what practice they are in for that day. This same concept should be applied when considering large equipment purchases and patient care room design/layout. Each room is set up with the same equipment and supplies are in the same location for consistent functioning of staff.
In general, Human Factors engineering examines a particular activity in terms of its component tasks and then considers each task in terms of: physical demands, skill demands, mental workload, and other such factors, along with their interactions with aspects of the work environment (e.g., adequate lighting, limited noise, or other distractions), device design, and team dynamics.

Below is an example of an EMR design for the outpatient practice that did not take human factors fully into consideration.

*Lost in the Red Exclamation*

It was a typical busy clinic day. It was the end of day, which is the typical time available for test review and follow-up. The provider navigates through the EMR to one of 3 folders that may contain results or patient information that requires review. The provider opens the “results” inbox where all diagnostic tests and some referral results are automatically sent. The provider looks over the immense list of results, those from today, yesterday and even older. The provider sees, as you see above, bold results indicating new results, several results with red arrows and red exclamation indicators and a few with what appears to be a red exclamation and yellow arrow … the provider immediately begins to open and review those with the red exclamation and address follow up actions as they are most important. Once through all the red exclamation results the provider can now move on to the general review – for all the other test results. But it’s late and the provider is tired – believing s/he has addressed
all those results of high priority (as indicated by the red arrow and exclamation) the provider decides the rest can wait till tomorrow. The CT Abdomen result (which was positive) goes unread and slips down below the reading pane at the bottom of the window and goes un-reviewed for several days.

There are several human factors problems encountered in this system. First the EMR offers a special program to assist the provider to quickly identify abnormal results—the red arrow and exclamation point. This conditions the provider’s brain to look for/seek out results identified this way. The eye sees red arrow, red exclamation and the brain interprets that as important and addresses that now. All the rest of the reports thus are given a less important status in the mind of the provider—which is the logical conclusion behind the indicator pattern.

The EMR module that supports the assistive indicator function can only interpret numeric values on results—and determine if the numeric value falls outside (above or below) a recognized pattern of acceptable values and thus places the red arrow/exclamation point on that result.

The module cannot interpret the written word and therefore is unable to provide this assistive function to any result other than lab tests. Therefore the CT Abdomen result never had the benefit of the application of the assistive module, was never indicated as high priority (red arrow/exclamation) and in fact fell off the primary screen when it slipped under the reading pane.

The CT Abdomen was grossly abnormal and required immediate attention—there was a several day delay due to the conditioning affect of the provider’s mind of what was and was not important and the design that allowed the result to drop below the visual field without notice that it had not been read.

Thought to ponder: how might the above human factor failures of this EMR be corrected and if not corrected how can they be detected so and additional barrier can be applied?

There are many examples of poor product and system designs that do not follow human factors principles. Several may be seen at the Website of Human Factors Design Problems Case Studies: http://www.baddesigns.com/

To learn more visit the Human Factors Blog: http://humanfactorsblog.org/category/healthcare/
RELIABILITY THEORY AND COMPLEXITY THEORY

Safety science is based on the theory of reliability—**which is defined as failure free operation over time**.  

A complex system can be described as one that has many steps or variables acting within it. Health care delivery in the outpatient care setting certainly meets this definition. In the outpatient care setting, there exists huge variability in patients and circumstances, and the need to adapt processes quickly to meet the rapidly changing environment. Often there is greater reliance on trained and skillful professionals to use expert judgment in this complex environment. Complex systems exist in most all living systems to industries and infrastructures created by human beings. Complex systems found in nature would be for example: ant colonies or the climate, in human beings: the nervous systems or cells and in industries: nuclear power and aircraft carriers and social constructs such as the military and some would argue—healthcare.

It is particularly relevant to look at both the nuclear power and airline industries to relate to when looking for improvement models to adapt to healthcare. The reliability theory has been embraced effectively by these industries as they have demonstrated consistent improvements and reliable outcomes. Teamwork and communication are major factors in promoting reliable outcomes in operations and reducing the risk of errors for nuclear power, air and the military. Research tells us that applying reliability concepts as used in other high risk organizations (those that have the potential for high death or disfigurement rates if an error were to occur) would result in better patient outcomes, higher rates of patient safety and fewer malpractice claims. High reliability organizations are those that can consistently practice over time without error.

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**Applying reliability theory to health care has the potential to help reduce “defects” in care or care processes, increase the consistency with which appropriate care is delivered, and improve patient outcomes.**

The following is an example of a high reliability process around medication reconciliation in a high risk area of health care service: pediatric hematology/oncology. This practice measures at 95% to 100% reliability.

The key factors in building a highly reliable process that this example teaches are: the inclusion of family/patient into the process, several double checks with personal accountability and good documentation at each step in the process, use of an EMR and a clear policy and procedure to follow with each patient at each encounter.

---

9 *David Garvin, Harvard Business School*
**Med Reconciliation Process: Peds Heme Oncology/ BMT Clinic:**

1. **Patients/families** will be encouraged to bring ALL of their home medications to EACH clinic visit.

2. For outpatient visits, **clinic nurses** will take a careful med history and document all medications that the patient reports they are taking:
   a. Document on the **paper** medication list generated from EMR: “Medication Discharge Instructions”
   b. Document on the **paper** outpatient clinic visit sheet
   c. Please be careful to evaluate AND document patient’s compliance by checking appropriate box on the paper outpatient clinic visit sheet.

3. The **outpatient clinic physician / midlevel provider** will document in the EMR, “Document medication history”, any medication changes determined on the date of the outpatient clinic visit.

4. **Medication Reconciliation pharmacy technicians** will clarify incomplete medications or doses prescribed by non oncology/bone marrow transplant physicians and document those clarifications in the EMR: “Document medication history”.
   a. Medications/doses requiring such clarification will be placed in the file box named: **Non-oncology/BMT medications/doses that need clarification by medication reconciliation pharmacy technician**.
   b. Please include the name and location of the pharmacy or any other details that will help the med reconciliation technician clarify the medication order.
   c. Turn-around time for Non-oncology/BMT medications/doses that need clarification by medication reconciliation pharmacy technicians will be approximately 72-96 hours.
   d. Pharmacy (PH-2 pharmacist) will be responsible to fax these to the Medication Reconciliation pharmacy technician. Fax to on Tuesdays thru Thursdays between 8AM and noon:

5. The **phone nurse** will **ELECTRONICALLY** document in the EMR, “Document medication history” any medication changes that are communicated to the patient via phone calls. Examples include:
   a. Hold methotrexate starting March 17.
   b. Start mercaptopurine 25mg po each day at bedtime, (50% dose) starting on March 20.
   c. Stop filgrastim on March 22.
   d. Administer filgrastim 75mcg subcutaneously, one dose every 48 hours starting on March 31.
   e. Start Omnicef 300mg PO bid x 10 days, starting on March 22.
   f. Start diphenhydramine 25mg PO q 6 hours x 2 days, starting on March 23.

This process was shared with permission from the Helen De Voss Children’s Hospital, Grand Rapids, MI. Contributors: Lynn Stachel, Beth Kurt, Teri Allie, and Diane Sinsabaugh
Creating a robust and highly reliable medication reconciliation process in the outpatient setting is an important step toward sustainable quality practice and patient safety.

Medication errors are a top patient safety failure in the outpatient setting and it is a prime area of opportunity for improvement based on office assessment findings. A quality improvement project around medication reconciliation is encouraged.

Resources:
Various groups and organizations have developed, proposed, or recommended patient safety curricula. One such group is the US Department of Veterans Affairs, National Center for Patient Safety (http://www.patientsafety.gov/curriculum/index.html). These materials cover many safety topics including human factors engineering, evidence-based safety, root cause analysis, and health care failure mode and effects analysis. Course materials include slides, handouts, quizzes, and learning exercises. This web site provides an excellent collection of resource materials for you to learn more about patient safety. It also contains useful links to additional materials and web sites.

Another example of a web-based patient safety curriculum is the University of Michigan's Health System Patient Safety Tool Kit (http://www.med.umich.edu/patientsafetytoolkit/curriculum.htm). Materials available from this web site address a number of specific topics about quality and safe patient care. The content includes background reading, practical applications, and strategies for developing and implementing best practices. These web-based resources have been created for a wide variety of health care clinicians including those involved in patient safety initiatives.


IHI Collaborative: Redesigning the Clinical Office Practice. There are improvement initiatives supported by the Institute for Healthcare Improvement (IHI) that focus on disease states/conditions and look to apply concepts of HRO to these areas of clinical care delivery. Rather than focusing on reliability concepts for disease management this resource focuses on learning about quality and using tools to make improvements for risk reduction, patient satisfaction and loss control (decrease the likelihood of a physician being sued for malpractice).

ECRI Physician Office Fundamentals in Risk Management and Patient Safety The information provided in Physician Office Fundamentals in Risk Management and Patient Safety is appropriate for a wide variety of practice settings—ranging from the small, two-person practice to large group practices. Whether the practice is independent, hospital-owned, or system-affiliated, this guide is designed to meet any physician office needs.
Chapter Two

HISTORY OF QUALITY IMPROVEMENT & CURRENT METHODS

“It is important to distinguish between efficiency—doing things right—and effectiveness—doing the right things.”

Peter Drucker
ORIGINS OF QUALITY IMPROVEMENT

Quality management is not derived from a single idea or person. It is a collection of ideas, and has been called by various names and acronyms: TQM, total quality management; CQU, continuous quality improvement; SQC, statistical quality control; TQC, total quality control, etc. However each of these ideas encompasses the underlying idea of productivity initiatives that increase profit by improving the product.

Though most writers trace the quality movement’s origins to W. Edward Deming and Joseph M. Juran, the roots of quality can be traced even further back, to Frederick Taylor in the 1920s. Taylor is the “father of scientific management.” As manufacturing left the single craftsman’s workshop, companies needed to develop a quality control department. As manufacturing moved into big plants, between the 1920s and the 1950s, the terms and processes of quality engineering and reliability engineering developed. During this time productivity was emphasized and quality was checked at the end of the line. As industrial plants became larger, post-production checks became more difficult and statistical methods began to be used to control quality. This was called reliability engineering because it moved quality control toward building quality into the design and production of the product.

In the decades that followed World War II, the U.S. had no trouble selling everything made. This demand had the effect in the U.S. of driving industry to increase production, which resulted in less quality control. Some U.S. manufacturers became complacent, thinking that they could sell any product and that the consumer did not want or demand quality. The post World War II situation in Japan was just the opposite. The war had left the country devastated, and it needed to rebuild its means of production. In addition, Japanese manufacturers needed to counteract the shoddy reputation they had that products "made in Japan" were of low quality.

Japan began focusing on serious quality efforts. Japanese teams went abroad to visit foreign countries to learn how other countries managed quality, and they invited foreign experts to lecture in Japan on quality management. Two of these foreign experts were Americans W. Edward Deming and Joseph Juran. They each had a profound influence on Japanese quality processes, encouraging quality and design, built in, and zero defect programs. It took twenty years of concerted effort to revamp Japan's industrial system. The strategies used involved high-level managers as leaders, all levels and functions were trained in managing for quality, continuous progress was undertaken, quality circles were used, and the entire workforce was enlisted. By the early 1980s Japanese products, particularly automobiles and electronic products, were superior in quality to U.S. products. U.S. companies lost market share in the U.S. and in the western world to the Japanese and went in search of the Japanese secret. They found the Toyota Production System (TPS).
LEAN

The basis for the LEAN concept is focused on the elimination of waste to create value. LEAN is vastly used in healthcare for improvement. The LEAN concept is focused on the customer as the sole reason for production of the service or product. Therefore any use of a resource or expenditure that does not create “value” for the end user “customer” is considered wasteful and should be eliminated. Value is defined as any action or process that the customer is willing to pay for. LEAN acts as a subset process focused mainly on the seven wastes to improve overall customer value originally identified in the TPS. The seven wastes identify resources that are commonly wasted and are:

1. **Overproduction**- more product is produced than is required at the time.
2. **Unnecessary transportation**- each time a product is moved- damage, loss, or delay is a risk and it is a cost that is of no value.
3. **Inventory**- in any form represents a cash cost that has not produced income.
4. **Motion**- refers to the producer, worker or equipment and has significance for damage, wear and safety. For example if an office only had one digital thermometer and it was kept in the lab significant worker motion would be expended to find the thermometer and take it to each patient room.
5. **Defects**- extra costs are incurred to rework the part or production delays. This would be equal to a medical error where the process must be reworked or stopped altogether to ensure the “defect” does not reoccur.
6. **Over-processing**- when more work on a product occurs than is required by the customer also includes when a more precise, complex or expensive tool is used than is required. Possibly, in the case of a Dermatology procedure such as a more complex and expensive Mohs procedure rather than excisional removal of a malignant mole.
7. **Waiting**- when a product is not in transport or being produced it is waiting –which is of no value.

LEAN is a logically based concept and it makes sense and is easy to understand. In this manual some of the LEAN concepts and tools will be discussed and taught as they apply under the Plan, Do, Check, Act (PDCA) process for quality improvement.

SIX SIGMA

Another quality concept is Six Sigma which focuses on the removal of defects and minimizing variability. A defect is defined as any process output that does not meet customer specifications or that could lead to creating an output that does not meet customer specifications. Six Sigma differs from other quality processes in that it is focused on achieving measurable and quantifiable financial returns and is statistically based. It requires a strong commitment from leadership and creates a hierarchy among the staff who have achieved different levels of mastery of the concepts referred to by a belt level,
such as Master Black Belts, Black Belts, Yellow Belts etc. It is these staff members who lead the quality process and projects.

NEW TREND

A new trend is to combine LEAN and Six Sigma for the optimal benefit of the organization. It has been said that LEAN is more for human related process where Six Sigma is more for manufacturing or business process. Organizations that are heavy into Six Sigma find it difficult to take a process that requires improvement and move quickly to improve it. LEAN focuses on speed, elimination of waste, standardization, and flexibility/responsiveness and the philosophy and tools are applicable to “soft process” such as customer service. Six Sigma is a data-driven methodology that strives for perfection in the organization’s entire value chain. With Six Sigma, the entire organization is placed under the microscope. The methodology and statistical tools provide structure, discipline, and a logical progression for achieving breakthrough improvements. You can see that each process can have a place in the quality improvement process of healthcare as a business and in service delivery.

The most common approach for quality improvement in healthcare is then Plan, Do, Check, Act, (PDCA) model. Regardless of what method is chosen the ultimate goal of quality improvement in healthcare is to provide the right care for every patient, every time.

HEALTHCARE QUALITY IMPROVEMENT

The closest formal definition of quality comes from the Institute of Medicine (IOM) which has defined quality as the extent to which health services increase the likelihood of a desired health outcome and are consistent with current professional knowledge. Most agree that it is an integration of all functions of an office to achieve high quality of service through continuous improvement efforts of all employees.

Many people see quality as an abstract and vague concept, but in reality it is concrete and measureable, much like the vital signs of a patient. There are many useful techniques for improving quality and measuring improvements as discussed earlier in this section. Many of the concepts used in healthcare have been borrowed from other industries and adapted to medical care. Healthcare quality improvement spans many areas including attitudes, knowledge and skills. All are required to ensure that the multiple elements involved in care delivery within a medical practice are continuously improved.

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10 2001 report, Crossing the Quality Chasm: A New Health System for the 21st Century
The IOM has proposed six specific aims for improvement. Stating that healthcare should be:

**Safe** – avoiding injury from care that is intended to help

**Effective** – avoiding underuse or overuse of services

**Patient-centered** – providing respectful, responsive, individualized care

**Timely** – reducing waits and harmful delays in care

**Efficient** – avoiding waste of equipment, supplies, ideas and energy

**Equitable** – providing equal care regardless of personal characteristics, gender, ethnicity, geographic location, and socio-economic status.

It is from these six aims that improvement projects are often selected for ambulatory care.

**IMPLEMENTING QUALITY IMPROVEMENT**

Quality revolves around the concept of meeting or exceeding patient expectations applied to the services provided. Achieving high quality is an ever changing, or continuous process whereby quality management emphasizes the ideas of working constantly toward improved quality. It involves every aspect of the office: processes, environment and people. The whole workforce from the office manager and doctor to the staff must be involved in a shared commitment to improving quality.

Therefore, in brief, quality and total quality management (TQM) in particular can be defined as directing (managing) the whole (total) process to produce an excellent (quality) service.

TQM differs from other management techniques in the attitude of management toward the service and toward the staff. Previous management methods focused on the volume of patients and the cost of the service. Quality was controlled by using a retrospective method (post inspection), problems were solved by management and management’s role was defined as planning, assigning work, and controlling the office. Today quality management is focused on the patient and meeting the patient’s needs. Quality is proactive, controlled by prevention, i.e., quality is built in at every stage. Teams solve problems and everyone is responsible for the quality of the service. Management's role is to delegate, coach, facilitate and mentor. The major quality management principles are: quality, teamwork, and proactive management philosophies for process improvement.

Simply stated, quality improvement (QI) is a practical approach to get to best practices. Studies conducted by the Institute of Medicine over the past five years
1) **An organized approach to QI.** Improving quality does not happen by chance; it is planned and well thought out. All QI models emphasize an organized and systematic approach. Critical components or steps to implementing QI include:

- Identifying the symptoms;
- Diagnosing the problem;
- Identifying the root cause; and
- Exploring and selecting solutions/strategies for change.

2) **Improvement philosophy adopted by leadership and the entire organization.** All QI models emphasize the need for an improvement philosophy in an organization. It requires a mindset that admits there is likely a gap between what we provide and what we are capable of providing. The philosophy of improvement needs to infiltrate all levels of the organization and needs to be strongly supported by senior leadership. Organizational goals and resources need to clearly reflect an improvement philosophy through allocation of time, people, money, external resources and internal interest. The improvement philosophy is open to other ways of doing things and learning from others outside the organization as well as from within.

3) **Proactive risk containment approach.** QI is a proactive approach to reducing risk; this approach proactively identifies potential areas of risk and eliminates or reduces them before they affect systems of care and patient outcomes. This is the opposite of a "reactive" approach where responses to risks or problems occur after the problem/risk or “defect” has already happened.

**FOUNDATIONS OF QUALITY IMPROVEMENT**

There are three well known and agreed upon foundations of quality improvement. As various QI models continue to develop, other foundations are emerging as well. These three principles are present in virtually every QI model.

<table>
<thead>
<tr>
<th>The foundations to improve quality are:</th>
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<tbody>
<tr>
<td><strong>Focus on the customer;</strong></td>
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<tr>
<td><strong>Be process oriented; and</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Have business decisions driven by data.</strong></td>
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</table>

1) **Customer focus.** A common definition of quality is meeting or exceeding customer expectations. We need to understand the meaning of customer. Understanding who one’s customers are and what their expectations are is fundamental to achieving customer satisfaction. Most people think of a customer as the ultimate purchaser or user of a product or service. For example, patients in
outpatient care are customers. Patients and caregivers/family are external customers. Other external customers of a physician’s practice include referral sources and third party payers.

It is also important to think about coworkers as internal customers. Every employee in a company has internal customers, people to whom work is handed off. Another internal customer of every employee is the practice manager and the physicians. It is equally important to achieve internal customer satisfaction as it is external customers. Failure to meet the needs of, and expectations, of internal customers can result in a poor-quality product or service.

2) **Process orientation.** The second foundation of QI is to look at all the work done as being part of a process. Healthcare processes and systems are very complex. Processes can be long and detailed. Often, many different disciplines are involved throughout a healthcare process. Virtually everything done is part of a larger process.

Quality improvement focuses on the PROCESS - including all of the steps leading to the end product or outcome. In doing so, identification of areas for improvement and areas of proficiency are sought out so that they can be replicated. **Quality improvement looks for barriers in a process and assumes if something is not happening according to plan that the process or system may be flawed, rather than immediately assuming staff are at fault.** All processes ultimately are conducted in a larger system. A systems perspective is key to QI. This means looking at an organization as a whole, and ensuring consistency and alignment of plans, processes, measures, and actions across the organization in a fully and interconnected manner.

3) **Data driven.** The third foundation in QI is regarding the use of data. Specifically data that is used to demonstrate outcomes and drive action. When data is used to define improvement a common reference point is established. Defined measures can bring clarity around focus and goals. Effective systems depend on the measurement and analysis of performance. Many types of data and information are needed for performance management. Such as, data regarding health care outcomes, administrative, payer, and satisfaction results.

In using data for QI purposes, one must:
- Keep measurement for QI simple.
- Don’t use “gut” reactions, use quantitative measures.
- Ask “**What data are we currently collecting that can be used?**”
- Ask “**Can data be collected concurrently?**”

QI is a factual, data-driven approach for the purpose of monitoring and evaluating performance to aid in continuous improvement. If changes in care practices do make a difference one must then ask “why”. If not, one must ask “why not” and attempt to identify what other variables are playing a role.
Bibliography


Steven Spear and H. Kent Bowen. *Decoding the DNA of the Toyota Production System*. Harvard business review September–October 1999

Steven Spear; *Fixing Healthcare from the Inside, Today*; Harvard business review September–October 1999
As many as [44,000 to] 98,000 people die every year in America’s hospitals from preventable medical errors. Many more people are injured. No other industry would allow an error rate that high.”

Ilene Corina, Patient Safety Advocate
IT'S THE RIGHT THING TO DO

The quote on the opening page of this section refers to the staggering number of people that die every year from preventable medical error. As staggering as this number is it does not include medical errors resulting from care provided in ambulatory settings, outpatient surgical centers, physician offices and clinics, home care, retail pharmacies and nursing homes. Imagine what the number might be if all these sites of care delivery had been included? Even when using the lower estimate of 44,000 lives lost, the number still exceeds those that die from motor vehicle accidents (43,458), breast cancer (42,297) or AIDS (16,516).

How do healthcare providers understand the significance of a number of preventable deaths this large? Possibly, the best way to embrace this number and to motivate improvement is to break it down to the number one: 1 son, 1 daughter, 1 mother, 1 father, 1 child -- all one too many.

Business cases are what must be built to answer the “why” questions that frequently accompany a change or improvement project. There is ample information available to support the business case for quality, actually, much more than expected. Below are selected topics that will be useful in explaining the urgency behind the need for improvement, as well as motivate and gain the support of providers and staff to adopt a quality improvement philosophy. For the purposes of this manual, the business case for quality is built on interrelated aspects of the following three areas: patient safety, financial wellbeing and regulatory compliance.

PATIENT EXPECTATIONS OF SAFETY

The first area of focus for the business case for improvement is patient safety. Busy office schedules, concern with productivity and dwindling budgets mean scant resources for quality improvement projects or staff training. Yet, there is an expectation by patients, payers, regulatory entities and others that the care provided in the office is safe and designed to prevent harm from reaching the patient.

A November 2004, poll found that 34 percent of the American public say that they, or a close family member, have experienced a preventable medical error. Of those, only 11 percent report they or their family member sued the healthcare professional or institution. Seventy percent of those who have experienced a medical error said that their doctor did not tell them a mistake had been made.\(^\text{11}\) Patients expect their healthcare provider to be truthful about errors and to learn from their injury/event to prevent it from happening to another patient.

Eighty percent of U.S. doctors and half of nurses surveyed said they had seen colleagues make mistakes, but only 10 percent ever spoke up. Fifty percent of nurses said they have colleagues who appear incompetent and 84 percent of physicians and 62 percent of nurses have seen co-workers taking shortcuts that could be dangerous to patients. Doctors and nurses do not talk about these problems because “people fear confrontation, lack time or feel it is not their job.”\(^\text{12}\) If the care provided or observed in the ambulatory practice is dangerous all staff must speak out for patient safety.

The Vital Smarts series *Silence Kills: The Seven Crucial Conversations® for Healthcare and Dialogue Heals*, Maxfield, Grenny, McMillan, Patterson, Switzler, [http://www.silencekills.com/Download.aspx](http://www.silencekills.com/Download.aspx) are resources that teach healthcare providers about the risk of not speaking up and how to speak up when patient safety is at risk.

Since that 2005, original series on *Silence Kills* a new study has been published titled *The Silent Treatment: Why Safety Tools and Checklists Aren’t Not Enough to Save Lives* [http://www.silenttreatmentstudy.com/](http://www.silenttreatmentstudy.com/). The study found that the effectiveness of safety tools is undercut by undiscussables and every day, healthcare professionals are making calculated decisions to not speak up—even when safety tools alert them to potential harm. More information regarding this aspect of patient safety can be found in the next section on Just Culture.

**BENEFITS OF IMPROVEMENT/GOOD BUSINESS SENSE**

Industries in the U.S. have had a strong focus on quality improvement since the late 1970s and 80s. They realized the value that improved quality leads to decreased costs, less rework, fewer mistakes, better use of time and positive outcomes. Also not to be left out in the value equation is the avoidance of costly safety violations and even more costly malpractice actions. Improved quality ultimately leads to better products and services, and in the case of healthcare, better patient outcomes.

Healthcare reform changes, the shift toward increasing the delivery of services to the ambulatory care setting and pay-for-performance initiatives (like the BCBS Medical Home initiative) will mean outcomes and reimbursement will be linked, thus quality initiatives will not only be the “right thing to do” but a financial imperative. Research also shows a correlation between staff satisfaction (decreased turnover, better care) and patient satisfaction (referrals and loyal patients help increase volumes).

The Center for Medicare & Medicaid Services (CMS) and other payers are increasing their focus on quality improvement and healthcare outcomes. Additionally, as baby boomers age, consumers are becoming increasingly sophisticated in their knowledge of healthcare and expected outcomes. These are

\(^\text{12}\) Survey 80 percent of doctors witness mistakes; but only 10 percent report errors or poor judgment, *Reuters*, January 26, 2005.
all strong forces for organizations to focus on quality improvement. Table 1 lists the many benefits of investing in patient safety initiatives.

<table>
<thead>
<tr>
<th>Areas</th>
<th>Impact of Patient Safety Lapses/Failures</th>
<th>Impact of Patient Safety Initiatives</th>
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<tbody>
<tr>
<td><strong>Patient</strong></td>
<td>• Potential or Realized short or long-term harm</td>
<td>• Averted harm</td>
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<tr>
<td></td>
<td>• Lack of complete and concise education</td>
<td>• Fully informed decision making</td>
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<td></td>
<td>• Lack of person-centered care</td>
<td>• Patient as a partner in health team</td>
</tr>
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<td></td>
<td>• Decreased trust in the healthcare system/providers</td>
<td>• Maintains or restores trust in healthcare system/providers</td>
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<td></td>
<td>• Propagates negative scrutiny of the healthcare field and providers</td>
<td>• Promotes cycle of positive attention and reinforcement of safety behaviors</td>
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<tr>
<td><strong>Financial</strong></td>
<td>• Decreased profit margins</td>
<td>• Decreased costs</td>
</tr>
<tr>
<td></td>
<td>• Increased direct and indirect costs</td>
<td>• Prepared for pay-for-performance</td>
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<tr>
<td></td>
<td>• Threat to organizational survival</td>
<td>• Increased capacity and infrastructure</td>
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<td></td>
<td>• Lost reimbursement potential</td>
<td>• Maintain or increase reimbursement</td>
</tr>
<tr>
<td><strong>Clinical</strong></td>
<td>• Compromised quality of care</td>
<td>• Improved clinical quality indicators</td>
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<td></td>
<td>• Reduced organizational performance</td>
<td>• Increased adherence to care guidelines</td>
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<tr>
<td></td>
<td>• Promotes variability in service delivery</td>
<td>• Provides better patient care</td>
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<tr>
<td></td>
<td>• Increased inappropriate care</td>
<td>• Increased workflow efficiencies</td>
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<tr>
<td></td>
<td>• Costly duplication of services</td>
<td>• Enhanced process design</td>
</tr>
<tr>
<td><strong>Technological</strong></td>
<td>• Illegible and incomplete orders</td>
<td>• Decreased medication errors</td>
</tr>
<tr>
<td></td>
<td>• Increased potential for errors due to use of paper chart</td>
<td>• Supports coordinated care management</td>
</tr>
<tr>
<td></td>
<td>• Records availability problems</td>
<td>• Optimized access to clinical data</td>
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<tr>
<td><strong>Culture</strong></td>
<td>• Promotes a “blame” culture</td>
<td>• Increased ability for electronic ordering</td>
</tr>
<tr>
<td></td>
<td>• Increased fear of error disclosure</td>
<td>• Fosters a culture of safety</td>
</tr>
<tr>
<td><strong>Legal/Insurance</strong></td>
<td>• Consumes additional resources pursuing litigation defense, paying settlements and awards</td>
<td>• Avoids exposure to liability</td>
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<tr>
<td></td>
<td>• Contributes to cycle of provider anxiety and litigation stress</td>
<td>• Promotes provider well-being, purposeful care</td>
</tr>
<tr>
<td><strong>Legislation/Regulation</strong></td>
<td>• Potential sanctions and litigation</td>
<td>• Increased documentation accuracy</td>
</tr>
<tr>
<td><strong>Human Resources</strong></td>
<td>• Increased recruitment costs of scarce human resources</td>
<td>• Reduced insurance premiums</td>
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<tr>
<td></td>
<td>• Comprised employee morale</td>
<td></td>
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<td></td>
<td>• Reduced patient and family satisfaction</td>
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<tr>
<td><strong>Measurement</strong></td>
<td>• Threatens transparency and accountability</td>
<td>• Increased provider and patients satisfaction</td>
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<tr>
<td></td>
<td>• Reduced provider and system feedback</td>
<td>• Increased provider-patient communication</td>
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<td></td>
<td>• Delays patient safety improvement</td>
<td>• Higher productivity with efficient process</td>
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<td></td>
<td>• May compromise HIPAA requirements</td>
<td>• Eases provider recruitment</td>
</tr>
<tr>
<td><strong>Marketing</strong></td>
<td>• Tarnished reputation and brand identity</td>
<td>• Enhanced surveillance and monitoring</td>
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<tr>
<td></td>
<td>• Decreased public confidence</td>
<td>• Prepared for public reporting</td>
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<tr>
<td></td>
<td>• Decreases new business initiatives</td>
<td>• Enhanced benchmarking and goal setting</td>
</tr>
<tr>
<td><strong>Accreditation/Stakeholders</strong></td>
<td>• Increased regulatory costs</td>
<td>• Increased patient confidentiality</td>
</tr>
<tr>
<td></td>
<td>• Duplication of efforts and messages</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Uncordinated safety requirements</td>
<td>• Builds good will and reputation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Elevated brand image and differentiation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increased revenue by drawing new patients</td>
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</table>
THE TIME HAS COME: REGULATORY ATTENTION AND PAY-FOR-PERFORMANCE INITIATIVES

Regulatory efforts to improve safety have in the past largely focused on hospital care; in fact, 12 of the 16 Joint Commission National Patient Safety Goals are considered "not applicable to ambulatory care." The Affordable Care Act will change this singular focus and the way ambulatory medicine is practiced. It is already happening; there is now a governmental focus on the quality of care provided in ambulatory care and by the healthcare providers that practice in this setting.

The Centers for Medicare & Medicaid Services have shifted toward “value-based purchasing” which focuses on payment for quality of services rather than the quantity or consumption of resources. In 2006, CMS instituted the Physician Quality Reporting Initiative (PQRI). In 2011, that name changed and the program is now called The Physician Quality Reporting System. For 2011, the System allows physicians who choose to report quality data on Medicare patient’s to receive an incentive payment equal to 1.0% of their total estimated Medicare Part B Physician Fee Schedule (PFS) allowed charges for covered professional services furnished during that same six month reporting period. In addition, a group practice may also potentially qualify to earn Physician Quality Reporting incentive payment equal to 1.0% of the group practice’s total estimated Medicare Part B PFS allowed charges for covered professional services in the reporting period. Beginning in 2011, physicians will also have the opportunity to earn an additional incentive of 0.5% by working with a Maintenance of Certification entity. In 2009, more than 200,000 healthcare providers reported data to CMS through the PQRI.13

The information submitted to CMS through the PQRS will be used to provide reports back to the physician on their performance. Later in 2011, CMS plans to expand the data currently available to the public via the Physician Compare website. This website provides a wide array of information on physicians in order to assist Medicare (and non-Medicare) recipients to select their providers of care. Currently the Physician Compare website shows whether a physician/practice reports data through the Physician Quality Reporting System. The website expansion is mandated in the Affordable Care Act to occur by 2013 and will include information such as:

- Whether providers choose to participate in an effort to encourage electronic medication prescribing (eRx incentive program).
- Information on the quality of care received from physicians and other healthcare providers profiled on the site.
- Information on the patient experience to assist consumers in learning more about providers.14

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14 Ibid.
The Physician Quality Reporting System represents the on-going steps toward a pay-for-performance model that also incorporates peer pressure participation in the quality of care reporting system. Physicians that do not participate in the PQRS may find that consumers will not choose them for their care. Likewise, if physicians do participate or score poorly on their quality outcomes or patient experience it may negatively affect their market share as consumers may choose to take their care to colleagues that have higher scores. This model of pay for performance and public reporting represents a focus on accountability on the part of the provider in the provision of high quality care in order to attract consumers covered by the largest healthcare payer in the U.S. —the Government.

For 2011, the quality reporting set comprises 200 clinical quality measures, which are supported by the National Quality Forum, the American Medical Association and others. The PQRS established 14 measures groups to look at specific areas of clinical care around disease states such as diabetes, asthma, kidney disease and several others. Within these 14 measure groups are individual measures that are comprised to make the group. To participate an individual physician must be eligible, and must select three measures groups relevant to their practice and the majority of their patient population. If submitting as a group then one measures group is required. All reporting is done through a data capture method either as claims-based or registry-based reporting. CMS has made it very easy to participate and participation potentially increases reimbursements.

CMS added two structural measures that practices must implement in order to participate in PQRS, they include the use of electronic health records (EHRs) and electronic prescribing systems. CMS is using PQRS to create incentives for physicians to use information technology to improve quality and safety.

While physicians may not receive an immediate return on investment for participating in pay for performance, it is important to consider participation in a strategic manner. In the future, nonparticipation may result in exclusion from new networks or health plans.

**A CHANGE IN FOCUS- RESEARCH**

Despite the fact that the vast majority of healthcare takes place in the outpatient, or ambulatory care setting, efforts to improve safety have mostly focused on the inpatient setting. However, a body of research dedicated to patient safety in ambulatory care has emerged over the past few years. These efforts have identified and characterized factors that influence safety in office practice, the types of errors commonly encountered in ambulatory care, and potential strategies for improving ambulatory safety.

There are several quality improvement initiatives and tools designed for the ambulatory care setting which provides evidence of this swing in focus over to outpatient care. Third-party payers, medical professional associations,
employers, and private quality and safety improvement groups have initiated many efforts to improve quality. These efforts are in hope that offering financial incentives for public reporting and adherence to best practices will reduce the cost and increase the quality of healthcare in the U.S.

These efforts include:


- **Physician Practice Improvement Models**:

  - **Ideal medical practice model** - was developed to promote delivery of high-quality, patient-centered, collaborative care; unlimited access and continuity; and high efficiency in primary care practices—no matter how small. So far the national demonstration project supported by the Physician’s Foundation for Health Systems Excellence is showing patient satisfaction is high with patients reporting they receive the care they want and need exactly when and how they need it. Concepts related to this model have evolved into the Ideal Medical Home ( “Medical home” refers to a healthcare model in which the primary care practice is the basis for a broad spectrum of care including preventative and curative treatment and to coordinate referral based care.) [http://idealmedicalhome.org](http://idealmedicalhome.org)

  - **Redesigning the Clinical Office Practice** – developed by the Institute for Healthcare Improvement (IHI) to redesign processes in physician practices to improve quality and productivity as well as patient and provider satisfaction. [www.ihi.org/IHI/Programs/InnovationCommunities/RedesigningtheClinicalOfficePractice.htm](http://www.ihi.org/IHI/Programs/InnovationCommunities/RedesigningtheClinicalOfficePractice.htm)

  - **TransforMED** – is a not-for-profit practice redesign initiative of the American Academy of Family Physicians (AAFP) to improve access, counseling and coaching, preventive care, care coordination and chronic disease management with in medical homes. Uses technology and a team approach to eliminate barriers to access and focuses on whole-person care. [http://www.transformed.com](http://www.transformed.com)

  - **ACP Center for Practice Innovation** – American College of Physicians (ACP) develops redesign strategies for small to medium-size practices with goals to improve clinical quality and assess the impact of quality improvement on patient satisfaction, safety, practice economics, and adoption of health information technology. [http://www.acponline.org/running_practice/quality_improvement/projects/cfpi](http://www.acponline.org/running_practice/quality_improvement/projects/cfpi) Earn Free CME for participation in ACPs web-based QI programs.
GROWTH IN OUTPATIENT CARE

A vast majority of health care takes place in the outpatient or ambulatory care setting. For every 8 people hospitalized 217 visit a physician's office, and more than half of those visit primary care physicians. Trends in healthcare delivery models indicate a continued growth pattern for the movement of care delivery from inpatient models to the ambulatory setting.

As mentioned previously, efforts and resources to support, develop and improve patient safety have been primarily focused on the inpatient setting. However, this focus is rapidly changing and the cost (financial and market share) will drive greater participation in quality improvement and risk management.

COST OF NOT IMPROVING

The social cost of medical error is enormous, estimated to be between $29 and $38 billion per year, with about $17 billion of those costs associated with preventable errors.

An area of significant risk and cost in the ambulatory care delivery system is medication administration. “It has been estimated that for every dollar spent on ambulatory medications, another dollar is spent to treat new health problems caused by medications.” (See the section on High Reliability for information on medication error prevention)

As demonstrated by the diagram on the next page “Indirect Costs of Patient Safety Violations” have in addition to legal costs, preventable adverse events that are likely to result in substantial personal, regulatory, and marketing costs which may impair profitability and compromise organizational performance.

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17 Kohn, Corrigan, Donaldson, Editors; Institute of Medicine, To Err is Human; Building a Safer Health System, National Academy Press, Washington DC, 1999.
POLITICS OF PATIENT SAFETY

Healthcare reform is all over the news. We frequently hear that the health system is broken, costs are too high, litigation is rampant which ties back to one of the reasons costs are so high. In a recent healthcare debate, Rep. Bruce Braley used the reports from the Institute of Medicine to point out the need for emphasis on patient safety. Regardless of his motives or what others thought of his comments, just the fact that he turned, for a split second, the health care crisis toward patient safety and away from it being a money issue was a significant new message. Maybe the answer to this crisis lies in funding and supporting quality improvement as it is a proven method to improve patient safety. Improving patient safety does not always mean lower costs but it certainly would result in fewer medical errors which may lower malpractice litigation related costs and decreases the financial burdens of caring for the sequela that follows medical error.

Resources:


“We’re going to hurt each other— it’s a fact of life, a cost of doing business. Current social perspectives toward our inherent human fallibility have substantially hindered efforts to make the world a safer place to live.”
David Marx, Author
Whack-a-Mole
WHY WE MAKE MISTAKES

Humans are fallible beings prone to make errors. Understanding and accepting fallibility as a reality is the first step toward building a safer healthcare culture. Most people know what an error is when seen or made. Yet, numerous definitions and terms for error exist in the literature. For the purposes of this manual the following definition of a medical error is offered:

A **medical error** is simply “the failure of planned actions to achieve their desired goal” 20

Further definitions of types of medical errors are:

A **near miss** (close call, almost error) is defined as “any process variation that did not affect an outcome but for which a recurrence carries a significant chance of a serious adverse outcome.” 21

A **sentinel event** is defined by the Joint Commission as an unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof. Serious injury specifically includes loss of limb or function. The phrase “risk thereof” includes any process variation for which recurrence would carry a significant chance of a serious adverse outcome. These events are called “sentinel” because they signal the need for immediate investigation and response. 22

With a common definition of medical error established the examination of why we make mistakes can now occur. The book “Why We Make Mistakes” – *How we look without seeing, forget things in seconds, and are all pretty sure we are way above average* by Joseph Hallinan can help shed light on the science behind the cliché “To err is human”.

According to Hallinan, when something goes wrong the cause is overwhelmingly attributed to human error. Once a human is blamed, the inquiry usually stops there. But it shouldn’t – at least not if elimination of the error is the goal. Why the human was allowed to make the error or how the system or device failed to prevent the human from making the error must be investigated.

Humans while fallible are often not at fault for errors. This is due to the fact that all humans have systemic biases in the way they perceive the world around them. For example right handed people, are prone to turn right when entering a new building even though it may not be the best route. Also most people show a preference for the number 7 and color blue. Expectations can

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21 Ibid
also shape how the world at large is perceived and the way humans act in it as well. The affect of these biases occur largely outside of human consciousness and are difficult to correct.

TAKE THE GOOD WITH THE BAD

Many of the qualities that allow humans to do so many things well contain flip sides that predispose to error. The first area is the ability to quickly size up a situation; within a tenth of a second after looking at a scene usually its meaning can be realized. Unfortunately much of the details are missed with this rapid fire analysis. The problem this causes is that humans don't think anything was missed- instead the thought is “we've seen it all”. Upon review this is not the case and this type of error is called a visual error.

Some visual errors are intentional –like movies –seeing each individual frame would detract from the experience instead seeing many frames in fast sequence allows for the rapid fire experience that creates enjoyment of “motion” pictures. This can, however, be dangerous when it is a radiologist looking at x-rays for signs of cancer or a TSA agent screening luggage for bombs... and they miss quite a lot of what they are looking for.

HINDSIGHT BIAS

Hindsight bias comes up quite a lot in the medical malpractice field– it is often referred to as being 20/20....What is being referred to by hindsight bias is the “misattribution of blame”, it is one reason the same mistakes are made over and over again and learning from experience doesn't occur. In hindsight, our understanding is always much better because the factors involved in the error are obvious looking back– even though they sure don’t seem that way at the time of the error.

When looking at the cause of an error it is imperative to look at the environment and support systems around the human. For example, if a driver gets into an accident because of texting while driving, they are at fault. They were distracted. If your goal is to reduce these types of accidents you wouldn’t look to make it illegal to text and drive or to “re-tool” the driver, instead the more effective approach would be to look to re-tool the car. Cars with systems that integrate with smart phones to allow for hands free texting are a prime example of this type of re-tooling approach to driver safety.

By gaining a better insight into the things we do well and the things we do poorly we might do more of the former and less of the latter.
OTHER REASONS

Some other reasons that humans make mistakes or are more likely to make errors are:

- **Being sleep deprived**
  Casinos love this reason, because people tend to make more reckless gambles when they are tired. This explains why casinos are open 24 hours/7 days a week.

- **Being unhappy**
  Humans function at their best when happy. Happiness fosters well organized thinking and flexible problem solving. This positive by-product of a happy outlook works across all fields including those with high social interactions like marketing and advertising but also in cerebral ones too like medicine.

- **Being overly optimistic**
  Humans have a false sense of confidence especially when making decisions. Because human beings tend to be over-confident this is a leading cause of human error.

- **Depending on memory**
  It turns out that memory is more a reconstruction than a reproduction, and therefore not as good as humans think it is. This is why the location and surroundings are so important in memory recall. Often victims and witnesses to a crime are taken back to the scene of the crime as a way to enhance the details of their memory.

By understanding better the most often cited reasons why humans make errors this may lead to higher quality development and application of error prevention techniques.

How safe is your practice?

LOCAL CULTURE AND SAFETY CULTURE

Even within the first few days a new employee will be able to get a sense of where the practice is on the safety spectrum. Your patients will also observe it. And even in the safest settings, there is always room for improvement. The practice’s attitude toward patient safety- and toward improving patient safety is often called the “culture of safety.” Organizations striving to improve patient safety cannot do it with force. They must identify and work within the local culture.

What is the “local culture” – simply put it is “the way we do things around here.” It is a mix of the practice’s history, leadership, budget concerns and staff
experience. It is this local culture that helps set appropriate behavior or continues to foster unsafe/short cut behaviors in the workplace. Local culture guides staff decisions on questions like:

- Should I bring my lunch to the staff meeting?
- The clamp is almost broken, should I replace it?
- Should I listen to this patient for five more minutes or keep on schedule?
- Who do I tell about what just happened?
- Should I speak up about a safety concern?

CHANGING CULTURE

An individual practice’s culture of safety is a subset of the overall larger organizational culture. The success of improvement projects are directly linked to this culture. Getting physicians or co-workers who don’t like meetings to show up for a safety/improvement meeting means you are attempting to change culture. Encouraging staff to report safety concerns or near misses (errors that had the potential to cause harm) while assuring them that they will be free from retaliation is attempting to change the culture.

It is important to have a finger on the pulse of how things are and also on the desired state for them to be for successful improvement efforts. Ignoring the current culture will mean failure for new ideas. While postponing improvements because of a “nothing will ever change” attitude is a self-fulfilling prophecy. Ensuring alignment between your improvement project and current culture can bring about significant improvements.

ASSESSMENT OF YOUR SAFETY CULTURE

Step one is assessing the current safety culture in the practice. There are two organizations that have developed and offer questionnaires that may be utilized to evaluate and indicate a baseline of the practice’s patient safety culture.

This first organization is the Agency for Healthcare Research and Quality (AHRQ). They offer a survey tool called Medical Office Survey on Patient Safety Culture. The survey as well as several supporting tools are available free of charge from the AHRQ website. This survey is designed specifically for the outpatient medical office with at least three providers (physicians, PA, NP) and staff and asks for their opinions about the culture of patient safety and health care quality in their medical offices. The survey tool as well as patient safety improvement resources, a comparative database, and the data entry and analysis tool are all available free of charge at: http://www.ahrq.gov/qual/patientsafetyculture/mosurindex.htm
The second organization is the University of Texas’s Center of Excellence for Patient Safety Research and Practice. They have developed an ambulatory-care-specific safety attitudes questionnaire, called SAQ-Ambulatory. It captures provider attitudes toward the work environment: teamwork climate, safety climate, perceptions of management, job satisfaction, working conditions, and stress recognition. It asks participants to rate their agreement with several questions on a scale of 1-5. Once a baseline level of safety culture is completed, it is recommended that the survey be repeated annually to measure changes following interventions such as staff training and improvement project selection. The SAQ –Ambulatory is available for download at: http://www.uth.tmc.edu/schools/med/imed/patient_safety/documents/Survey-SAQ-Ambulatory.pdf

The change in safety attitudes is a measure to be captured for the business case for improvement as well as reporting back to MPIE.

What does it mean to be accountable?
What is the price paid for expecting perfection?

A FAIR AND JUST CULTURE

On the other end of the phone was Jane a long time practice manager for a local family practice office. There was concern and sadness in her voice today. She explained that they had had a medication error event recently and the way it was handled has bothered her for the past week. She did not want this to happen again, the error for sure, but the way the practice approached the employee involved even more. The physician had written an order for a medication injection. The physician’s handwriting was difficult to read but after many years working together the medical assistants and nurses were used to deciphering what was written and often asked each other for confirmation. The medical assistant believed she had correctly read the order and drew up the medication dose and administered it to the patient. Unfortunately, the dose as she read it was incorrect and resulted in a medication over dose for the patient. The physician-owner and boss was furious and demanded that Jane fire the MA immediately. The physician stated that it was necessary to appease the patient and assure the patient that this error would not happen again. Jane added that she felt the physician was avoiding personal accountability for the years of poor hand writing practices and the impact that had on this error. This MA had had two previous medication related errors that had resulted in a warning and then a disciplinary write up. There had never been an investigation into the cause of the previous errors only admonishment that she must pay closer attention to detail. Jane did as instructed by her boss and fired the MA.

Errors do not happen in a vacuum often there are many factors involved – remember the Swiss cheese? The price society pays for a culture where blame and shame still exists around medical errors is very high. Healthcare providers are by nature, very hard on themselves and each other, when an error occurs. Society runs the risk of losing a skilled professional from the field and a valuable human being from our community when blame or shame occurs in the wake of
medical error or near miss events. Very few healthcare providers ever go to work with the intention of harming their patients, yet society, the legal system, and even colleagues will treat them as though they did. Movement away from this cultural norm in the ambulatory practice setting is desperately needed. Many acute care settings have made great strides in changing their culture; and now the drive for greater accountability and patient safety is requiring the same change in the outpatient setting.

A safety culture is essential to ensuring safe care and is required to achieve improvement results that are sustainable. **A safety culture is one that strives for reliable process, is committed to sharing information and learning, and is “just”: where words and action match the commitment to safety for patients and providers of healthcare services.** The core behaviors of a safety culture are based on a “fair and just” concept of culture. This is a culture that upholds the promise of justice and fair treatment, especially when things go wrong. In a just culture, staff is not afraid to report events; rather there is a feeling of trust and fairness which promotes learning from mistakes and system flaws through reporting. The information gained through event and near miss reporting is used to determine performance improvement opportunities and is used to protect patients from harm.

In a just culture environment, adverse events/inappropriate actions are reviewed in relation to the system components contributing to the error and the human factors. An inappropriate action occurs when the person does not meet a performance expectation. It is important to understand the type of human error as this is used as part of the corrective action determination.

In conducting this type of review the human error component is considered using the following framework:

**Skill based error**-occurs when a person slips or lapses while performing a routine action. They are functioning by habit with very little conscious thought. Characteristics include:
- correct intention, but inappropriate action
- error made by skilled person or experienced with the task
- unintentional deviation from a planned action

**Rule based error**- occurs when a person makes a conscious decision to disregard a rule. They misapply the rule because of a wrong assumption, misinterpretation or incomplete information. Characteristics include:
- occurs during the conscious decision making tasks in which the person is trained and experienced
- results when a known rule is misapplied or not followed

**Knowledge based error** – occurs when a person is not trained or familiar with the task at hand. They try to make a good decision based on the information and
knowledge that they have, if they make an error it is because they lack the training and experience. Characteristics include:
  o conscious decision making by an untrained person
  o a person does not know what rule to follow

In a Just Culture (shared accountability model) understanding the factors (system based and human based) is critical to prevention of future error. David Marx describes a further step and that is classifying the error type in relation to the human behavior, this classification helps to determine appropriate action.

This framework includes:
  • **Normal error**
    (the mistake was driven from the system factors)
  • **At Risk Behavior**
    (the individual believes they are practicing in a safe environment when indeed they are not)
  • **Reckless behavior**
    (conscious disregard, knowing and intentionally violating rules)

Action in relation to human error in this framework is suggested as follows:

Table 2. Error Behaviors

<table>
<thead>
<tr>
<th>Normal Error</th>
<th>At-Risk Behavior</th>
<th>Reckless Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product of our current system design</strong></td>
<td><strong>Unintentional Risk-Taking</strong></td>
<td><strong>Intentional Risk-Taking</strong></td>
</tr>
<tr>
<td>Manage through changes in:</td>
<td>Manage through:</td>
<td>Manage through:</td>
</tr>
<tr>
<td>- Process</td>
<td>• Understanding at-risk behaviors</td>
<td>• Disciplinary action</td>
</tr>
<tr>
<td>- Procedures</td>
<td>• Removing incentives for at-risk behaviors</td>
<td></td>
</tr>
<tr>
<td>- Training</td>
<td>• Creating incentives for healthy behaviors</td>
<td></td>
</tr>
<tr>
<td>- Design</td>
<td>• Increasing situational awareness</td>
<td></td>
</tr>
<tr>
<td>- Environment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The practice will need to examine and understand the level of tolerance for open communication, how trust is managed and maintained, and most importantly how leadership handles errors and mistakes. Both clinical and non-clinical staff will perform best in a blame-free environment, one where policy and practice are in sync.

The development of a just culture requires that practice management rethink the disciplinary process. Human error is not an automatic reason to take disciplinary action. Disciplinary actions involve: intentional violation of safe practices that stem from reckless behavior with disregard for risk. In contrast to a punitive culture, the just culture will recognize that rule violations occur, provide a “just”
and therefore safe reporting environment, and further the goal of learning from events.

There are three primary behaviors that separate error and risk. It is important to be knowledgeable of the areas in order to appropriately evaluate behavior involved in an error when working in a just culture.

In contemplation of this disciplinary process keep in mind:

- First, where does disciplinary action serve to prevent future events?
- Second, what system of accountability meets with the practice’s sense of justice?

Most organizations that have answered these two questions have found it necessary to move their threshold for disciplinary action from mere human error to one of the following standards:

- Unintentional violation of safe practices
- Intentional violation of safe practices
- Reckless conduct standard

In determining reckless conduct ask these questions:

- Was the risk taken by the staff member “substantial”?
- Was it “unjustified”?  
- Did the provider act in “conscious disregard of the risk?”

If “yes,” is the answer to any of these questions then it was reckless behavior toward injury or potential injury to the patient and disciplinary action is justified.

**Disciplinary action is not dependent on the event’s outcome. This cannot be stressed enough when applying just culture concepts. The person with reckless conduct who was involved in a near miss/no harm event should be disciplined in the same manner as the person whose reckless conduct caused an adverse outcome/patient harm or death.**

The practice disciplinary policy must include that NOT reporting an event when observed or discovered is a punishable action. By adding this level of accountability to your practice policy and thus communicating a behavioral expectation toward safety it will ensure feedback occurs for improvement and promote overall patient and provider safety. It must be accompanied by assurances and education to staff that it is not a behavior of “tattle-tailing” rather that this is a safety behavior expectation. Experience has shown that this type of behavior expectation has resulted in staff reporting on themselves when an event occurs and an increased sense of vigilance to safety practices as well as identification for quality of care improvements.
Short cuts in some procedures can be so widely practiced and taught to new staff that they become the unwritten rule and accepted behavior. Because these violations become incorporated into the normal work flow of an organization, individuals are not aware of the increased risk they are causing. If an employee fears discipline, he or she may not report these behaviors and may, therefore, unknowingly increase risk to the patient. It is the correction of these at-risk behaviors that provide the greatest opportunity to prevent future events. Frequent discussion with a new employee may provide the greatest opportunity to identify ingrained unsafe practices.

Adopting a just culture environment in the practice will be instrumental to both the proactive approach to improvements as well as the corrective actions after an event. Therefore, this section will have certain applicability to the root cause analysis process when looking at human involvement in error.

On the following pages you will find a tool called **Shared Accountability – Decision Making Guide** it is an algorithm that allows you to walk through situations involving errors. It will help you to determine what actions should be considered as a result of behavior involved in an error report or event. Put yourself in Jane’s position, the office manager from the story at the start of this chapter. Using this guide how might have that situation been handled? What improvement practices should be put in place to prevent that type of error in the future? How might technology improve the system that failed the MA? Be sure to read through the application example that follows the Accountability Guide at the end of this chapter.
Shared Accountability

Decision Making Guide

Patient Safety and Risk Solutions- Shared with permission.
Were the actions intended?

No

Yes - Stop! Consider termination, suspension, referral to police, regulatory agency etc

Does the individual pass the capacity test?

No - using a substance, is ill or impacted by a medication—Stop! Consider occupational health referral/HR involvement/suspension/termination

Yes

Did the individual use appropriate decision making?

No – Person violated a rule or procedure.

Yes

Does the individual pass the reasonable person standard?

No - another peer would have possessed the skill and or knowledge to have performed this function, a peer would not have acted in this manner in this type of situation (see review area #2).

Yes

Does the person have a history of unsafe acts?

No

Yes – (see review area #3)

Is accountability impacted by mitigating circumstances?

No

Yes – (see review area #4)
**Action Guide:**
Actions intentional – Reckless behavior
Individual does not possess capacity – At risk behavior
Individual did not use appropriate decision making – At risk behavior
Individual did not pass reasonable person standard – At risk behavior
Individual has a history of unsafe acts – At risk behavior
Accountability is impacted by contributing factors – At risk behavior
Control measures not used when they should have – At risk behavior

**Review Areas**

**Rules, Skill and Knowledge**
These three areas should be reviewed to help determine the specific cause behind the error.

1. The first is related to rules/standards of practice/procedures that are current and in place---the question to ask is, “Was a rule broken?” If an individual violated a rule/procedure determine if they knew of the procedure. If the situation required a deviation from the procedure, was it a known and accepted practice, or was the procedure not a practice norm.

2. If the person did not act consistently with the behavior of a reasonable person determine if there was an active failure such as a slip, mistake, lapse, distraction.
Determine if a peer in this same or similar situation would have possessed the skill and/or knowledge to have performed the function.

3. If the person has a history of unsafe acts determine if the current training has been adequate, if the work environment/situation is appropriate for the person.

4. If accountability might be impacted by mitigating circumstances determine what they are and why/how they impact the issue. Contributing factors may include:
   a. Complexity of patient care
   b. Environmental stressors
   c. Staffing shortage
   d. Technology/equipment/supplies missing/broken/unavailable
   e. Training/knowledge lacking
   f. Teamwork ineffective
   g. Communication breakdown/confusing/lacking
   h. Individual issues-stress, fatigue, work relationships etc.
   i. Barriers in place, not used---forced function bypassed, patient identity not checked, checklist not used etc.

Reckless, At Risk, Normal Behavior

1. Reckless: If behavior is intentional to cause harm it is reckless and should be acted upon with discipline, termination, and possible criminal issues.

2. At Risk: If behavior is not intentional to cause harm, the reasons behind the error should be determined so that action can be focused. If human components are contributors it is likely at risk behavior and should be acted upon with re-training, revision to process, adjustment to duties, re-assignment, focused review/support, implementation of risk reduction methods (human and system related).

3. Normal: If behavior is not intentional and not at risk behavior the action should be focused on the system issues that caused/contributed to the error.

References: Michelle Hoppes RN, MS, DFASHRM, Patient Safety fellowship work
David Marx, Outcome Engineering
James Reason, Accident Causation
Jane’s Dilemma and Decision Making Guide Example

Walking through the Decision Making Guide using Jane’s situation would look like this:

1. Were the actions intended? No

2. Does the MA pass the capacity test?
   Yes to the best of our knowledge based on our information. This question would need to be asked and investigated at the time of the event to appropriately answer.

3. Did the individual use appropriate decision making?
   Yes – because the practice had no rules or procedures regarding order verification. She did follow the behavioral norm of asking a co-worker.

4. Does the MA pass the reasonable person standard?
   Yes – she did exactly what her co-workers taught her and do themselves in this situation.

5. Does the person have a history of unsafe acts?
   Yes- necessitating review to determine if the current training was adequate, if the work environment/situation is appropriate for the MA.

6. Is accountability impacted by mitigating circumstances?
   Yes- necessitating review of contributing factors and why/how they impacted the event.
   Factors:
   d. Technology missing (CPOE or EMR could have created a safety barrier through legibility),
   e. Training/Knowledge lacking (the MA was taught by other staff what was the behavioral norm)
   f. Teamwork ineffective (if teamwork was strong the staff would have felt comfortable even responsible to question the physician on his order before acting),
   g. Communication confusing/lacking (illegibility of handwriting, lack of a secondary verification process such as verbal orders with a repeat back safety process)

7. Were there control measures/barriers in place to help prevent error?
   No

Action Guide:
Individual has a history of unsafe acts (possibly still due to the original root cause of the providers illegible handwriting – this would be clearer in your own situation as you would have knowledge of the previous events)
Accountability is impacted by contributing factors- At risk behavior
Behavior Guide & Follow up actions:
At Risk: behavior was not intentional.
Determine the reasons behind the error - behavioral norm to rely on self interpretation with co-worker back up rather than question and verification with physician.
Prevention actions for the future - Physician must print all medication orders, CPOE or EMR purchase and conversion, Policy creation requiring verbal order with read back in addition to all written orders. Re-training for all staff including the physician on the policy and why it was created (in a non-threatening manor).

It is logical that a quality improvement project would result from this situation and the resulting sample actions. The project would follow the steps and concepts taught in this manual looking at the current state and desired future state, implementing a change, monitoring and measuring compliance with the change and the impact on medication errors in the practice.

Resources:

RMF Safety Culture


Dana-Farber Cancer Institute Principles of a Fair and Just Culture

Safety Attitudes Survey Tools:

Agency for Healthcare Research and Quality (AHRQ), Medical Office Survey on Patient Safety Culture
http://www.ahrq.gov/qual/patientsafetyculture/mosurindex.htm
Chapter Five

IDENTIFYING AN IMPROVEMENT PROJECT & ESTABLISHING A TEAM

“Until you see me, I do not exist”
SEEING THE IMPROVEMENT OPPORTUNITY

To be able to identify an opportunity for improvement or change it must be brought “into existence” or be “seen”. There are a few ways to “see” opportunities. First, a practice may want to use the Physician Practice Patient Safety Assessment (PPPSA) report to identify the areas that the practice scored low on and work in these areas to identify an improvement project. If the practice has not participated in the PPPSA it may be downloaded and completed through the free version of the assessment.

The benchmarking data from MPIE office’s participation in the PPPSA provides data advantages in terms of starting points for identification. In the graph below, it is clear that medications are a prime area for improvement strategies as only 40% of the safety indicators have been implemented. This is followed by patient education and communication for all practices that have participated in the PPSA.

Figure 3. Degree of Implementation of the PPPSA Domains

Another area to look at when identifying opportunities for improvement projects is to look at what other clinics have done (Best Practice Models).

A collaborative program called the Safety Collaborative for the Outpatient Environment (SCOPE) was implemented by Gunderson Lutheran Health System in seven of their outpatient clinics. The collaborative was established to develop and maintain best practices for patient safety. Through this collaborative the following 11 best practices, modified from patient safety goals and principles used in the inpatient setting, were developed for use in ambulatory care:
1. Maintain accurate and complete medication lists
2. Ensuring documentation of medication allergies
3. Standardizing prescription writing
4. Removing intravenous potassium chloride from all locations
5. Emphasizing non-punitive error reporting
6. Educating providers and staff about look-alike, sound-alike drugs
7. Improving verbal orders
8. Ensuring the safety and security of sample drugs
9. Following protocols for hazardous (high-alert) drugs
10. Partnering with patients
11. Notifying patients of laboratory/test results

Although progress was noted in many areas, the best measurable success after one year was observed in medication list accuracy (15% improvement) and allergy list accuracy (1% improvement). Adherence to safe prescription writing practices also improved, but because teams focused on different aspects of prescription practices, no overall improvement data was available. Each clinic’s improvement team developed a work plan based on the Plan, Do, Check, Act method to implement and evaluate the best practices.

Other suggested places to look to identify areas for improvement in the office setting would be office practice claims data, national claims data, patient satisfaction survey results, national patient safety reports and your own error identification data.

Another resource of data to drive improvement is the Physician Insurers Association of America (PIAA) which is composed of over 50 medical professional liability companies for the purpose of claims data tracking, trending and report generation. These reports are used by patient safety and risk management experts and organizations to identify areas of clinical and non-clinical patient care that require focus on prevention education or loss control. The PIAA identified the following areas to be associated with a high probability of claim loss or having a negative impact on the successful defense of litigation.

1. **Problems with medical records**
   a. Missing or poor quality documentation of progress notes, test results, medical decision making.
   b. Inadequate documentation of follow up on abnormal test results.

2. **Problems with patient work-up**
   a. Missing, inadequate, and un-reviewed patient history.
   b. Unordered, not considered tests.
   c. Provider distraction or patient stereotyping leading to missed potential diagnosis.
3. **Problems with communication**
   a. Provider to patient, provider to provider and provider to staff that may have affected the care and treatment of a patient.

Specific areas where medical records problems have been identified are shown in the follow graph. Clearly, missing lab results and correspondence top the scale and may indicate two primary areas to target for a quality improvement project.

Figure 4. Categories of missing clinical information during primary care visits

![Graph showing categories of missing clinical information during primary care visits](source)


According to the literature and national data, the most frequent claims in the ambulatory care setting stem from, missed and delayed diagnosis – which may be improved by better test tracking systems, and ensuring that communication flows back to the patient.
The following graphs show data from the Joint Commission on the areas of practice that have been linked to sentinel events.

Figure 5. Root Causes of Sentinel Events


This data indicates communication and patient assessment are top failure areas. However, an improvement project in any of the areas identified in these graphs would be appropriate and potentially yield improvements in patient safety and improved patient care.
Data from the Agency for Healthcare Research and Quality (AHRQ) suggest that physicians wanting to incorporate patient safety efforts in their offices should concentrate initially on two areas: prescription medications and the processing of lab, x-ray, and diagnostic tests. Improved systems for these tasks could potentially lead to fewer errors and improved safety for millions of patients.23

Lastly and likely the most important area for quality improvement related to patient safety is in medication error prevention. According to the 2006 IOM report, medication errors harmed at least 1.5 million people annually and cost $3.5 billion a year. Medication error prevention projects will have the potential to have the greatest impact on improving patient safety and reducing unnecessary healthcare expenditures.

Improvement projects may be selected from clinical and non-clinical aspects of the practice. Selecting projects that will have a direct impact on the top areas of identified risks will prove to have the most benefit (financially and in patient safety) for the practice. Improvement projects that involve chronic disease states may be selected in conjunction with third party payer incentive programs such as those through the Blue Cross Blue Shield Medical Home initiatives or Priority Health pay for performance initiatives.

Also see the Measurement section of this manual for an article titled “Putting Measurement Into Practice With a Clinical Instrument Panel” http://www.aafp.org/fpm/2003/0200/p43.html this article is shared with permission and is an excellent resource to assist practices to establish a starter set of performance measures for the practice overall. It would be from these performance measures that a quality improvement project may be selected.

KEYS TO QI SUCCESS

As the office approaches quality improvement, the following basics to facilitate successful quality improvement should be remembered:

- Start small.
- Keep it simple.
- Be thoughtful about what you do.
- Focus on: What Is the Question?
- Don’t get lost in the data.
- Importance of leadership.
- Use of data to show progress.

• Empowerment and involvement of staff.
• All work is part of a process.
• Strive to meet/exceed customer expectations.
• When using data for the plan of action, data should be:
  ✓ Precise
  ✓ Understandable
  ✓ Practical for clinicians providing the care

Finally, it is important to remember, that as healthcare professionals, many have been practicing quality improvement for the majority of their professional lives, it just was not labeled as such.

In every day practice, patients are assessed, objective measurements of physiologic signs (range of motion, levels of assistance required) are compiled, the assessment findings are analyzed and the key problems determined in order to improve or resolve the patient's condition. Providers then focus on the problem, develop and implement a treatment plan to fix the problems, and monitor the patient's progress. If improvement occurs, the interventions are continued. If improvement does not occur, new plans and new interventions are developed. Collectively, providers are successfully schooled and practiced in quality improvement. QI simply formalizes existing practice with more standardization and quantitative measurement.

**LAYING THE GROUNDWORK FOR IMPROVEMENT BY ESTABLISHING A TEAM**

Certain infrastructure needs to be in place for an organization to have a focus on improvement. Four critical aspects of such a structure include:

1) **Leaders.** Managers, physicians and supervisors need to set directions and create a customer focus, clear and visible values, and high expectations. Quality as an organizational mindset and individual mindset starts at the top. If an organization’s staff is not motivated and focused on quality, patient safety and risk management it is probably because the leaders are not, and improvement is not part of the overall strategic plan. Leaders need to ensure the creation of strategies and systems to achieve excellence and continually improve. Leaders need to inspire and motivate the entire staff and encourage staff to focus on continual quality improvement. Leaders need to serve as role models through their behavior and involvement in review of organizational improvement.

2) **Organizational goals and priorities.** Organizational goals and priorities should reflect Quality Improvement, Patient Safety, and Risk Management. It is important that improvement direction is expressed in strategic goals, plans
and/or objectives so that improvement activities will naturally follow and be condoned.

3) **Staff support.** All staff needs to personally invest in improvement initiatives and need to have the time and capacity to focus on improvement. Improvement cannot be seen as separate and apart from daily work it must be embedded in the work culture of an organization must be a philosophy to continually review and improve day-to-day processes. Improvement work must be built into job descriptions and incorporate issues of importance to staff. If improvement projects are separate, they will be the first to get dropped off the work plan.

4) **Team work.** When implementing quality improvement, organizations usually create special teams and follow a formal approach to plan, test and implement new methods to reach unprecedented levels of performance. With the focus on processes in quality improvement and with health care processes involving multiple disciplines, teams are critical to improving quality. When forming a team to improve a process, be sure to identify all stakeholders and have them represented on the team. Seek out people with interest and accountability and who represent and interact well with peers.

The team leader guides and manages the day-to-day activity of the team. The leader needs to make sure the team stays focused and on track and follows up on all agreed upon activities. The leader needs to assure that good decision-making processes are used and must address conflicts effectively.

The team needs to establish a communication plan so that it shares information promptly with stakeholders who are not on the team and with all staff. The teams should also record successes and lessons learned so that these can be shared with other staff, and so that future teams can learn from these lessons. In summary, when establishing a team, the following guides may be helpful:

- Involve representatives from all disciplines, sites and functions who touch the process.
- Designate a leader.
- Assure that the team has a common understanding of purpose and focus.
- Assure that the team commits to working interdependently.
- Assure that the team shares information with all staff.

**CHANGE STAFF BEHAVIOR**

Staff behavior is critical and has to change to make an improvement. Any current system and process is set up perfectly to get the results that it currently gets. So to change a process in order to improve, staff needs to change their behavior and do things differently. Once the first steps in the improvement process are completed, the team must take steps to get staff to implement the new processes.

Prerequisites to changing behavior include:
• **Need for change recognized by staff.** Before staff can change behavior they must know about the desired practice change.

• **Desired change identified and communicated.** The desired change must be identified for staff and communicated on a regular basis to facilitate needed changed behavior. As adult learners, on average, we need to see or hear things seven times to remember them. Communication tools should accomplish seven repetitions to assure it is internalized by staff. For example, in communicating a new practice, it would be useful to distribute polices related to the change, provide new learning material, set up competency testing related to the change, have a peer review program related to the change, send out memos, post visual reminders and leave voice messages or email messages.

• **Education and data sharing.** Education and data sharing is critical to assure staff not only knows about the desired change, but understands its purpose. Staff needs the opportunity to perform the new skill or use the new information. They need the opportunity to ask questions and demonstrate understanding and to be permitted to practice in a non-threatening environment. For example, they must be allowed ample time to perform the new skill in a lab setting rather than on an actual patient.

• **Organizational support.** Staff must also have needed resources, supplies, equipment, and resource persons to successfully carry out the change. For example, if one change is to weigh all patients with the diagnosis of Congestive Heart Failure, staff must have access to a well-maintained scale.

The typical team consists of a physician leader, an administrator, and at least one nurse to oversee patient safety assessment, implementation of improvement strategies, and collection of data. Often the physician leader and a nurse specialist or office manager act as project directors.

**Resources:**

Ambulatory Patient Safety Toolkit:  

MedQIC-Ambulatory Patient Safety Toolkit: includes a variety of tools identified to improve patient safety.  
http://www.qualitynet.org/dcs/ContentServer?cid=1142280338798&pagename=Medqic%2FMQTools%2FToolTemplate&c=MQTools

Patient Safety in the Physician Office Setting:  

Risk Management Foundation: What Works: Effective Practices for Office-based Care:  
Chapter Six

PLAN, DO, CHECK, ACT (PDCA) CYCLE & TOOLS

“If two men agree on everything, you may be sure that one of them is doing the thinking”

Lyndon B. Johnson
OVERVIEW

There are many standard models for making improvements. They all attempt to provide a repeatable set of steps that a team or individual can learn and follow. The simplest of these tools is the Plan, Do, Check, Act, (PDCA) cycle also called the Plan, Do, Study, Act (PDSA) cycle it is transferable to many settings and is in wide use in the healthcare setting. Therefore, this will be the primary tool used to teach the process of improvement.

PDCA cycle is a model that was developed as a framework for making improvement in a process or system. It is also a problem solving process typically used in business and healthcare process improvement. It has broad applicability across domains of work in a business as well as across business types. It can be used in accounting as well as in clinical care settings to look at how things are done and how they can be improved. Because it is a continuous cycle, it promotes the team to “look back” at the improvement to ensure it resulted in the desired effect and did not actually create more inefficiency.

It is designed to be used as a dynamic model, meaning it is a continuous cycle of improvement requiring constant checking and rechecking to measure sustained improvement. The model is also used for identifying new areas of improvement opportunities.

PDCA is also known as the Deming cycle or Shewhart cycle after those that created and popularized the concept. It is based on the scientific method which can be described as a process of “hypothesis” – “experiment”—“evaluation” or plan, do and check. Shewhart brought the concept of control and inspection to the scientific model. He expected that actions would be taken as a result of the conclusions of the evaluation.

In Six Sigma programs, the PDCA process is referred to as “define, measure, analyze, improve, control,” (DMAIC). The repeating nature of the PDCA cycle must be added to the DMAIC model to ensure that the process is run through
again with the aim of reaching the goal of zero failures with the process. With each run through of the process knowledge is gained that will allow justification of changes (hypotheses) and gain more knowledge about the process. Which will allow closer movement toward whatever improvement goal is selected.

The guiding purpose of an improvement process is to stick to four basic principles:

1. **Develop a strong customer focus.** A total customer focus examines the needs of both your internal (coworkers, other department staff) and external (patients and families) customers.

2. **Continually improve all processes.** First you must be able to identify the processes in the practice. A process is simply a sequence of repeatable steps that lead to the desired end product or result. Such as: the patient check in process, the administration of an injection, collecting office visit copays. Once the process is identified work to improve it must follow. This is where the PDCA Cycle will be the tool to use when looking to improve service, quality of care, operational/administrative functions.

3. **Involve Employees.** It is critical to creating a culture of patient safety and quality improvement that management encourage teams to work together, to train them and provide them support in improvement efforts. Be sure to use their work and ideas for improvement. Most importantly celebrate accomplishments as an office team—even if a core team worked on the improvement. It will take everyone in the practice to ensure a true commitment to improvement. Refer back to the chapter on Establishing a Safety Culture for more information.

4. **Use data and team knowledge to improve decision making.** Data is the most powerful tool we have to examine patterns for potential failures in service, quality of care or operational systems. By displaying data geographically team members are more apt to discover these patterns and focus in on the most important areas for improvement. Remember to foster a culture where every idea has a right to be heard, thus creating a safe zone to share and ensure every chance for identification for improvement. Work to create consensus on the main (root) causes of the problem and the plan for improvement.

In this chapter each step in the PDCA process will be explored and the suggested tools to use with each step. Practice leaders will want to follow the concepts of the PDCA model to create a common language for continuous improvement within the practice.
On the next page is a graphical representation of the PDCA cycle. It is much easier to see the whole process laid out all in one place. Throughout the rest of this section an in depth review at each step in the PDCA process and learning about the accompanying tools available to achieve each step will be covered.

Model for Improvement Video:

Part 1 http://www.youtube.com/watch?v=SCYghxtioIY&feature=related

Part 2 http://www.youtube.com/watch?v=6MIUqduLNwQ&feature=related

PDCA Overview Video:

The PDSA Cycle (healthcare focus):
http://www.youtube.com/watch?v=xzAp6ZV5ml4&feature=related

Table 3.

Plan-Do-Check-Act (PDCA) - A Problem Solving Process

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<tr>
<td>Step 1: Identify The Problem</td>
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<td>• Select the problem to be analyzed</td>
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<td>• Clearly define the problem and establish a precise problem statement</td>
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<td>• Set a measurable goal for the problem solving effort</td>
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<td>• Establish a process for coordinating with and gaining approval of leadership</td>
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<td>Step 2: Analyze The Problem</td>
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<td>• Identify the processes that impact the problem and select one</td>
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<td>• List the steps in the process as it currently exists</td>
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<td>• Map the process</td>
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<td>• Validate the map of the process</td>
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<td>• Identify potential cause of the problem</td>
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<td>• Collect and analyze data related to the problem</td>
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<td>• Verify or revise the original problem statement</td>
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<td>• Identify root causes of the problem</td>
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<td>• Collect additional data if needed to verify root causes</td>
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<td>Step 3: Develop Solutions</td>
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<td>• Establish criteria for selecting a solution</td>
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<td>• Generate potential solutions that will address the root causes of the problem</td>
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<td>• Select a solution</td>
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<td>• Gain approval and support for the chosen solution</td>
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<td>• Plan the solution</td>
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<td>Step 4: Implement a Solution</td>
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<td>• Implement the chosen solution on a trial or pilot basis</td>
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<td>• If the Problem Solving Process is being used in conjunction with the Continuous Improvement Process, return to Step 6 of the Continuous Improvement Process</td>
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<td>• If the Problem Solving Process is being used as a standalone, continue to Step 5</td>
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<td>Step 5: Evaluate The Results</td>
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<td></td>
<td>• Gather data on the solution</td>
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<td>• Analyze the data on the solution</td>
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Achieved the Desired Goal?  
If YES, go to Step 6.  
If NO, go back to Step 1.

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<td>Step 6: Standardize The Solution (and Capitalize on New Opportunities)</td>
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<td></td>
<td>• Identify systemic changes and training needs for full implementation</td>
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<td>• Adopt the solution</td>
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<td>• Plan ongoing monitoring of the solution</td>
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<td>• Continue to look for incremental improvements to refine the solution</td>
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<td>• Look for another improvement opportunity</td>
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Operational Improvement

Rapid Problem Solving

Objective:

- Solve the problem quickly – try something immediately
- Use PDSA cycle
- Use at the place it occurs
- With the input of the people doing the work

Example:

Problem: Nurses forget to send medication home with discharged patients.

Rapid Problem Solving: Observed the nurses during discharge and they found that the meds were hidden away from view. Moved the meds to a location where the nurses see them, so that they remember them. They also provided a check-sheet for discharge for nurses to remember the meds needed at discharge.

How to use this tool:

1. Establish the true dimension of the current problem and establish zero as the goal.
2. Observe the actual work to find opportunities to standardize processes and stabilize systems.
3. Move quickly from retrospective data to actionable, real-time data analyzed and acted on immediately with every symptomatic patient.
4. Solve problems one-by-one as close to the time and place of occurrence as possible.
5. Provide continuous education in both process improvement and technique for new and rotating staff members.

Outcomes:

- Problems are solved sooner
- Employees become problem solvers
- Standardized work makes it easier to spot problems

Tips:

- Try problem solving at the time of occurrence
- Experiment with solutions when possible
- Develop method in advance for communication to all
- Try it!
STEP 1.  P = PLAN

P = PLAN- what is to be accomplished over a period of time and what might be done, or needs to be done to get there.

- Define a problem or opportunity/Select a Project
  In this step avoid the tendency to move directly to a solution first. Such as using statements “we are going to implement this change” that is a solution, not a problem. Focus on answering the question: “what is the problem we are trying to solve?”

TOOL: S.M.A.R.T. Statement

The tool to help you accomplish this step is the: SMART statement
The SMART statement is one that is Specific (concrete, detailed, well defined), Measurable (numbers, quantity, comparison), Achievable (feasible, actionable), Realistic (considering resources) and Time-bound (a defined time line).

Why use this tool?
Setting objectives for a project is the critical way to define the project. Setting an effective objective to guide the team and organization is very important for the leader to get right. Badly formulated objectives will steer an organization in the wrong direction.

Who should participate?
People involved in the process where the problem is occurring should be on the core team. They will have the best knowledge. Include a manager or physician while setting the S.M.A.R.T. objective so the team will have someone there to help understand the resources needed to accomplish the objective successfully and to help them get the resources. For more on establishing a team, see the section titled: Identifying an Improvement Project and Establishing a Team and the example process at the end of this section.

Objectives of using the tool
When completed the S.M.A.R.T. Objective Tool will allow the team to develop a statement that will guide them forward. It should also be used to request the necessary support and aid in their achievement.
Operational Improvement

Project Statement – 15 Words (S.M.A.R.T.)

Objective:

15 Words is an alignment tool that challenges team members to define the problem / project / opportunity in specific terms and then check for common elements among team member’s definitions. Each team member is given a flip chart page and marker. They must write, in 15 words or less, the project definition. Post all and check for agreement. Double check all fuzzy words by circling them and asking “What does it look like?” or “How will we know it when we have it?”

This is a simple tool to begin to define the boundaries for the project and to test for alignment. It can easily be used to refine the outcomes/deliverables of the project by asking “What does it look like?” or “How will we know when we have it?”

Approach:

1. Ask each team member to draft their individual 15-word statement on a piece of flip chart paper (remind them to print, BIG, so their words are easy for others to see). It may be useful to give team members a few words to build upon, such as “This project’s major mission is to…” where they add 15 words to complete the sentence.

2. Post individual charts along the wall and ask each team to move around and read all of the charts. Then ask them to highlight key words or phrases that they feel best capture the important aspects of the project; circle unclear items and star areas of heartburn. They can do this as a team or as individuals, depending on the size of the group.

3. Discuss the circled (unclear) and starred (major heartburn) items.

4. Work as a team to take these key words / phrases and assemble them into a new statement to define mission / purpose / goals / etc. of the project.

5. OPTION: Depending on the size of the team and/or the personalities involved, you might want to have team members work in pairs on the first set of drafts; this might allow a less assertive member of the team to put forward ideas they might be less willing to propose if left to work alone.
Instructions

1) Write the problem to work on. Example, “Nurses are unable to locate supplies when needed.”

2) Write a statement that is Specific

Specific means that the objective is concrete, detailed, focused and well defined. The objective is straightforward, emphasizes action and the required outcome. Objectives need to communicate what the goal would look like. To help set specific objectives it helps to ask the following questions:

- **WHAT** am I going to do? This is best written using strong, action verbs such as conduct, develop, build, plan, execute, etc. This helps your objective to be action-orientated and focuses on what’s most important.
- **WHY** is this important for me to do?
- **WHO** is going to do what? Who else needs to be involved?
- **WHEN** do I want this to be completed?
- **HOW** am I going to do this?

Diagnostic Questions

- What exactly are we going to do, with or for whom?
- What strategies will be used?
- Is the objective well understood?
- Is the objective described with action verbs?
- Is it clear who is involved?
- Is it clear where this will happen?
- Is it clear what needs to happen?
- Is the outcome clear?
- Will this objective lead to the desired results?

Example: “The team will guide the staff in utilizing the 5S Tool (taught later in this section) to prevent nursing from spending time looking for items.”

3) Is the objective Measurable

If the objective is measurable, it means that the measurement source is identified and there is ability to track the results of actions as progress towards achieving the objective occurs. Measurement is the standard used for comparison. For example, what financial independence means to me may be totally different compared to what is means for you. As is so often quoted, **if you can’t measure it, you can’t manage it**! Importantly, measurement helps the team to know when it has achieved the objective.
Diagnostic Questions

- How will I know that the change has occurred?
- Can these measurements be obtained?

Example: A study was completed and it asked nurses to capture how many times/day they had to look for an item that should have been available (average 5 times/hour) and multiply that by 2 minutes/search (average time to locate the item). Their conclusion was that nursing spends an average of 10 minutes/hour or 17% of their day looking for supplies that are somewhere in the office.

“The team will guide the staff in utilizing the 5S Tool to reduce the number of times/hour nursing spends looking for items.”

4) Check to see if the statement above is Achievable

Objectives need to be achievable, if the objective is too far in the future, it will be difficult to keep the team motivated and to strive towards its attainment. Objectives, unlike aspirations and visions, need to be achievable to keep people motivated.

Diagnostic Questions

- Can we get it done in the proposed timeframe?
- Do I understand the limitations and constraints?
- Can we do this with the resources we have?
- Has anyone else done this successfully?
- Is this possible?

Example: Our specific-measurable objective is: “The team will guide the staff in utilizing the 5S Tool to reduce the number of times/hour nursing spends looking for items.”

Perhaps a more achievable objective would be: “The team will guide the staff in utilizing the 5S Tool to reduce the number of times/hour nursing spends looking for items by 90%.”

5) Is the objective Realistic?

Objectives that are achievable may not be realistic. However, realistic does not mean easy. Realistic means that the resources to get it done are achievable. The achievement of an objective requires resources, such as, skills, money, equipment, etc. to support the tasks required to achieve the objective. Most objectives are achievable but, may require a change in priorities to make them happen.
Diagnostic Questions

- Do I have the resources available to achieve this objective?
- Do I need to revisit priorities to make this happen?
- Is it possible to achieve this objective?

Example: Our specific-measurable-achievable objective is: “The team will guide the staff in utilizing the 5S Tool to reduce the number of times/hour nursing spends looking for items by 90%.”

After consideration it is discovered that supplies are very costly so the practice may not be able to purchase enough to supply every room and prevent the nurses from looking for them 90% of the time. Therefore, change of the specific objective is required. New objective: “The team will guide the staff in utilizing the 5S Tool to reduce the number of times nursing spends looking for items by 50% and an additional 25% as we can purchase appropriate supplies.”

6) Time-Bound

Time-bound means setting deadlines for the achievement of the objective. Deadlines create the all important sense of urgency. If a deadline is not set, motivation and urgency required to execute the tasks will be diminished. Deadlines create the necessary urgency and prompts action.

Diagnostic Questions

- When will this objective be accomplished?
- Is there a stated deadline?

Example: Our specific-measurable-achievable-relevant objective is: “The team will guide the staff in utilizing the 5S Tool to reduce the number of times nursing spends looking for items by 50% and an additional 25% as we can purchase appropriate supplies.”

Let’s set goals for completing the 5S and re-measuring the nurses: “The team will guide the staff in utilizing the 5S Tool to reduce the number of times nursing spends looking for items by 50% by end of calendar year and an additional 25% in the next calendar year as we are able to purchase appropriate supplies.”

Time allowed for completion
If all the data is available the team should be able to write the S.M.A.R.T. objective in less than one hour. Some homework may need to be completed prior to starting or the team may start developing their S.M.A.R.T. objective and then determine that other information may be needed.
Tips for Success

1) Involve the people that are involved in the process that is not working properly.
2) Take time to get the appropriate measures for baseline information and setting a S.M.A.R.T. objective.
3) Remember, it’s better to over achieve so don’t set the objective so high that it is seen as failure. Even a small improvement is better than no improvement.

- **Analyze the situation. Study who is important.**
  In this step, determine who is important to the situation –who are the stakeholders. It will be important for success to create buy in from these stakeholders. Identify and involve them early – involvement may mean just providing them information on the problem and your steps toward improvement.

- **Analyze the Problem: Look for causes and corrective actions**
  In this step the goal is to see where the failure(s) are occurring to cause the problem in the system. The easiest way to do this is to understand the concept of wastes in healthcare which are barrowed from another quality concept the LEAN Process. Much has been written about LEAN in healthcare lately and there are many concepts and tools that can be barrowed to provide understanding of the improvement process. The LEAN Process and the Six Sigma Process both have quality improvement concepts and follow project methodologies inspired by the PDCA cycle. The PDCA cycle is the foundational building block of quality improvement concepts which are in wide use and varying degrees of complexity. Once there is an understanding of where waste occurs the team will be better prepared to identify where in the process improvement is needed.
CONCEPT: Wastes in Healthcare

Manufacturing has eight wastes, all of which also can apply to healthcare:

**Over production.** This is making more of something earlier or faster than the next process needs. This waste shows up most commonly in batching work—such as tests, paper work or claims.

**Waiting.** In any form, waiting is a waste. Examples include patients waiting in an emergency room for an inpatient bed to become available or staff waiting for an instrument to complete its run cycle, for a doctor or nurse to arrive at the office or for an open room, test results, information or approvals to become available.

**Under utilizing staff.** Failing to tap into the knowledge, skills, education and creativity employees possess is a serious waste. Under use typically shows up as silo mentality, hierarchical structures and not using teams. The people closest to the work know it best. They are the process experts, and they just have to be trained in problem solving and lean techniques. One of the advantages of improvement techniques is that staff members directly involved with the process are the ones who work to improve it. Relying on internal or external consultants does not develop the internal knowledge or skill base needed to sustain improvement. Both individuals and teams are a hidden treasure many organizations do not tap into.

**Inventory.** A major cost to healthcare is for carrying inventory or supplies. Sometimes the cost of holding inventory is not fully understood. For example, when organizing a storeroom, one office found many overstocked, obsolete or incorrect items. Money was wasted on these items. A major lesson the healthcare system could learn from manufacturing is that smaller, more frequent shipments are more desirable than a volume discount. Consider the overall cost, not just price.

**Motion.** The easiest way to think about motion waste is walking (or body movements). A lot of walking waste can arise from poor design of an area or lack of optimal working conditions that result in staff having to make multiple trips for things.

**Transportation.** In manufacturing this appears as moving parts around. In healthcare, transportation waste can show up when moving patients, tests, materials or information around.

**Over processing.** This is doing more than is required, especially from the customer’s point of view. A simple example of over processing results in patients (customers) trying to figure out multiple claim forms, including the ones that state, “This is not a bill.” It could also include complex phone tree systems that do not allow quick and efficient direction of a caller.

**Defects.** Defects, corrections, adjustments or inaccurate or incomplete information cause many problems. For example, a label on a blood tube that is misapplied, illegible or improperly aligned can cause errors or delays in processing.
TOOL: PROCESS MAP

Process mapping simply stated is a diagram of the process to be improved. Gathering the information to create the process map will give the improvement a better chance to succeed. Maps are designed to help teams understand all steps in a process through the use of common easily recognizable symbols. Clear understanding of the process is essential if improvement is to take place. All the symbols below are can be found in the flowchart function of word. This allows for a picture of the steps in a process to be created in the order they occur. Using different symbols creates visual diagram of the process. The flowchart is meant to show the process as it CURRENTLY exists.

Steps in creating a Process map include:

1. **Determine the map boundaries.** This contains the map and keeps it manageable.
2. **Identify specific steps.** Look at what are the required actions to complete the process.
3. **Sequence the steps.** Identify activities that occur at random or in tandem with other steps, be sure to **capture repeated steps** as well.
4. **Create the map.** Each activity is placed in a box and each decision step placed in a diamond, connect these with lines and arrows indicating the flow of the process.
5. **Analyze the map.** Use this map to identify spots where the process works well and to bring to light those redundancies, black holes, barriers or other difficulties. A great exercise is to create a map of the process if it was ideal –everything flowing efficiently and with exactly the resources needed. Then compare the two maps.

**Basic symbols:** Connect them with lines and arrows showing flow direction.

- Process Beginning or End
- Activity Step
- Waits & Delays
- Connector, off page
- Things you don’t know
- Decision Points
- Process Flow Direction
**OPTION:** Another very simple option for process mapping is to use a post-it note for each step in the process. To enhance the process it is recommended that different colored post-it notes or highlighters be used to indicate what type of step is occurring, rather than the symbols. The following colors are suggested to indicate the step or activity: Green-Process Beginning or End, Blue- Activity Step, Pink- Waits & Delays, Purple- Things you don’t know, Orange-Decision Points.

A process map can be done very simply by using post-it notes as seen below (color indicators for each step would have enhanced this map).

Think creatively to determine the best approach and best possible corrective action/improvement – determine goals and targets

This is the most important step in the process as it will determine what you do in the following steps of the PDCA cycle. Much time and thought should be spent in this step. A good place to start is with the team in a brainstorming exercise on what the improvements might be and be sure to set the stage for your team that all ideas are good. Don’t hold back! Another tool that is useful in this step is the 5 Whys which is also explained in this section.
Objective:

• Identify process improvement opportunities through group-oriented process mapping of the Current State process.

• Design a new or improved workflow through group-oriented process mapping of the Future State process.

Approach:

Conduct a process mapping meeting with a cross-functional team of process personnel, customers and suppliers. Document the inputs, process steps and outputs of the process in chronological sequence. Use appropriate labels to depict each process step and yellow sticky notes to highlight ideas, opportunities, problems, issues and workflow narrative.

Process Mapping Questions:

• What functions or events drive the process?
• What inputs (triggers) start the process or process step?
• Who are the suppliers (internal and external) of the inputs?
• What are the outputs from the process or process step?
• Who are the customers (internal and external) of the outputs?
• What problems are being encountered that impact performance?
• What are the volumes and frequencies of transactions for the process?
• What suggestions for improvement are there?
• What best practices can be incorporated into the process?
• Are there performance measurements in place to monitor the process?
How to use this tool:


2. Schedule a process improvement workshop (PIW) with process personnel, customers and suppliers of the targeted process. Present an overview of process mapping. Prepare the process mapping materials (paper, symbols, markers, etc.).

3. Following the sequence of the What/Who Matrix, flowchart the current process by mapping the inputs, process steps and outputs for each process step. Use the list of process mapping questions, the process mapping symbols, and the process mapping conventions to guide the flowcharting.

4. Brainstorm the current process by searching for non-value-added activities (bottlenecks, delays, hand-offs, waste). Capture ideas, opportunities, problems and issues by documenting them on yellow sticky notes and posting them along the bottom of the map.

5. Upon completion of the Current State, transfer the yellow sticky notes to the Action Plan.

6. Establish a time horizon for the Future State based upon the items in the Action Plan.

7. Use the Current State and the Action Plan as inputs to flowchart the Future State (assume all action items are complete).

Process Mapping Conventions:

- Identify the number of flow paths (services) to be mapped.
- Map one flow path from start to end, concentrating on inputs, process steps, and outputs.
- Select and label the symbol that best characterizes the process step.
- Map to the 80/20 rule, not the exceptions (what usually happens).
- Label the sub-process on the process map.
- Estimate the process time (the time it takes to complete a step) and elapsed time (the time it takes to complete a step, plus “wait” time) for key steps and flows after all flow paths are mapped.
- Gather samples of inputs and outputs of the process for reference before beginning the mapping (optional).
TOOL: BRAINSTORMING

Brainstorming can be used any time a team needs multiple ideas or a fresh perspective. It can be used at any stage of the performance improvement process, including planning, determining processes to measure, determining data to collect, interpreting data, and identifying potential improvement actions. The following are the steps in brainstorming:

- **Define the subject.** A group may brainstorm to generate lists of topics to assess, process components, topics for data collection, problems and potential solutions.

- **Think briefly about the issue.** Allow enough time for team members to gather their thoughts, but not enough time for detailed analysis.

- **Set a time limit.** Agree on a time limit for the expression of ideas. Depending on the size of the group, 10 to 20 minutes should be enough.

- **Generate ideas.** This part of the brainstorming process can follow a structured or an unstructured format. No matter the format, it is crucial that neither the leader nor the other group members comment on any given idea. Be sure to write down every idea. Use a flip chart or post-it notes to capture all ideas. To ensure the team stays focused on the goal in this activity the concept of the “parking lot” can be used- this is where ideas or issues can be logged on a separate part of the flip chart –not lost – but not to be addressed at this time.

- **Clarify ideas.** In this final step, the goal is to make sure that all ideas are recorded accurately and are understood by the group. There should be no attempt yet to rank or otherwise judge the ideas.

- **Narrowing the ideas.** To identify those ideas that are most critical for immediate attention use the following process:
  - Determine if any ideas are the same or similar.
  - Ask the team if the similar ideas can be grouped.
  - If agreement, combine duplicate/similar ideas.
  - Number the new list of ideas
  - Determine the number of points that will be assigned to the list by each team member. Each member uses points to vote on the ideas on the list. It would be easiest to set a 1 to 5 scale with 5 being highest.
- Indicate each member’s vote on the corresponding idea on the list and tally the total points per idea.

- **Identify the ideas with greatest points.** A pattern will emerge with a clear 1\textsuperscript{st}, 2\textsuperscript{nd} and 3\textsuperscript{rd}.

- **Choose the final group of ideas or vote again.** If a pattern emerges then this is considered the final list. If the points are too evenly distributed the team may vote again, leaving out the two or three lowest ideas or reducing the number of points each member can assign.

Brainstorming How To Video:  
http://www.youtube.com/watch?v=zvdSy4zOw4Q&feature=related
Brainstorming

Objective:
• To gather a large number of creative ideas
• To identify general and process improvement opportunities
• To determine problem areas to analyze
• To identify possible causes
• To generate possible solutions
• To develop content of an implementation plan

Approach:
Brainstorming is a common group technique for generating many ideas in a short period of time. A group of people throw out their ideas as they think of them, so that each has the opportunity to build on the ideas of others.

How to use this tool:
The facilitator presents the topic for which ideas are sought. The wording should encourage specific, tangible ideas, not abstract ideas or opinions. The facilitator makes sure the group members understand the topic, the objective of the brainstorming session and the process to be followed.
1. Clearly state the topic and brainstorming guidelines
2. Begin the brainstorming session, recording all ideas on flip chart paper or sticky notes
3. End the session when the ideas stop coming or when time allotted expires

Types of Brainstorming:
Freewheeling: Where group members call out their ideas spontaneously – the scribe records as they are suggested
Round Robin: Where the leader or scribe asks each member, in turn, for an idea – members may pass on any round, and the session continues until all members have passed during the round
Individual: Each participant writes down his/her ideas on cards and passes them on to the facilitator

Guidelines:
• No evaluation of ideas
• Encourage wild ideas
• Build on the ideas of others
• Looking for quantity of ideas vs. quality
• No discussion of ideas during brainstorming
• Record all ideas
• Everyone is equal
TOOL:  5 WHYS

The 5 whys tool is used to learn how to discover root causes of a problem by analysis and repeated questioning. The approach with this tool requires the team to ask “why?” repeatedly (five is a good rule of thumb). This is done in order to peel away the layers of symptoms which can lead to the root cause of the problem. This process can also identify relationships between different root causes of a problem. This tool is best used with problems that involve human factors or interactions because it does not require statistical analysis.

How to use this tool:

There are four steps required to complete a “5 Why’s” analysis:

1. Write down the specific problem clearly and objectively

2. Ask “Why?” the problem happens and write down the answer below the problem.

3. If the preceding answer doesn’t identify the root cause for the problem written down in Step 1, ask: why? again and write down that answer.

4. Loop back to Step 3 until there is agreement that the root cause of the problem is identified. This may take fewer or more than 5 Why’s.
Objective:
Learn how to discover root causes of a problem by using “5 Why’s” analysis.

Approach:
Repeatedly ask “Why?” (five is good rule of thumb) in order to peel away the layers of symptoms which can lead to the root cause of a problem. The process can identify relationships between different root causes of a problem. The approach is easy to use and is best applied to problems involving human factors or interactions because it does not require statistical analysis.

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There are four steps required to complete a “5 Why’s” analysis:
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4. Loop back to Step 3 until there is agreement that the root cause of the problem is identified. This may take fewer or more than 5 Why’s.

5 Why’s - Examples:
Medication Carts – Equipment didn’t work...
Why? Battery not charged
Why? Battery charger had no power
Why? Electrical outlet was dead
Why? Outlet splashed with water (next to sink), tripped ground fault and turned off outlet
Why? Water pressure too high in sink

Solution: Called plumber to adjust pressure – no more tripped outlets – no more problems with the batteries.

Patient falls while on nursing unit...
Why? Patient was left in chair with alarm on and family watching
Why? RN thought the family could handle the patient
Why? Patient was new to the floor, unfamiliar to staff, and RN assumed that family understood patient’s limitations
Why? RN assumed staff had provided appropriate education to patient and family
Why? RN assumed Fall Risk Assessment was accurately completed

Solution(s): Increased communication with family (countermeasure); implement brochure and software enhancements (permanent)
STEP 2. D = DO

D = DO-what was planned. Start on a small scale!
- Implement corrective action on a small scale trial basis
- Educate and train as necessary
- Document the procedures and observations
- Use data-gathering tools to collect information

With every “do” step remember this is an experiment a trial—it’s important to understand that it is something that you are just going to try. There is a concept in this step called OFAT- “one factor at a time” to keep in mind in order to remain focused on your goal change. Data collection for measurement is also an important part of the “do” step. You are going to need to find a way to determine if the process is improving beginning with collecting data.

TOOL: CHECK SHEETS
Check Sheets are simple tools that show how often an event or a condition occurs. They are the most basic statistical tool, used to record data that answer objective statements requiring a simple yes or no response. Follow these steps to create a check sheet:

1. **Agree on the data to be collected.** A team may decide to collect data to provide a baseline for how a process performs. Or perhaps the team wants to investigate how often the causes identified in a cause-and-effect problem occur. At this point, the team also should consider the source of the data.

2. **Decide who will collect the data and when.** Data collectors must be knowledgeable enough about the process in question to reliably collect the information. The team also must decide how much data to collect. Make sure to collect enough data so that the information is reliable.

3. **Select a sample size, if appropriate.** Some events occur with such high volume that recording every relevant situation is impractical. If this is the case, the team may need to select random, representative sample of at least 20%. It is crucial that the sample be statistically reliable.

4. **Phrase the statement.** It is important to phrase the subject of data collection as a complete, objective statement that can be answered with a clear yes or no.

5. **Design the check sheet.** The check sheet should be clear and easy to use. Include a place for the date, time, name of the data collector, and comments, and leave plenty of space for entering data.

6. **Test the check sheet.** One way to test a check sheet is to have one or two people who did not help design the sheet use it.

7. **Distribute the check sheet and collect the data.** Distribute copies to all data collectors; they will then collect data until the end of the specified period. Make certain that collection is done consistently and accurately.
8. **Tally all individual check sheets.** Use a single sheet to tally all information from the individual check sheets. The totals may be aggregated by day, shift, week, month, or occurrence.

<table>
<thead>
<tr>
<th>Event</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
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<td>IIIII</td>
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<td>IIII</td>
<td>IIII</td>
</tr>
<tr>
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<td>I</td>
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<td>I</td>
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<tr>
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<td>II</td>
<td>II</td>
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</tr>
</tbody>
</table>

*This format allows staff members to mark how many times a particular event occurs during successive days over a specified period.*
CONCEPT: 5 S

Another concept taken from LEAN is the 5 S process which eliminates waste. It was discussed what waste in healthcare is and now in this “Do” step the goal will be to “Do” something about that waste. The 5 S process involves the following five steps:

1. SORT
   - Elimination of unneeded equipment, paperwork, pharmaceuticals in the office.

2. SET-IN-ORDER
   - Putting the remaining high use items as:
     - close to the point of use as possible,
     - visible when possible,
     - visually managed using color coding and shapes to communicate to the user

3. SHINE
   - Complete cleanliness of all office areas (waiting room, exam rooms, hallways, counter tops) creates a safe, pleasant, maintenance friendly work environment

4. STANDARDIZE
   - Simple work instructions ensuring the top three are done consistently.

5. SUSTAIN
   - Management support to make the system work. Communication, audit feedback, recognition and accountability.
STEP 3. C = CHECK

C = CHECK - the results of what happened in the “Do” step to see if the objective was achieved.
- Analyze information and data collected
- Monitor trends
- Determine degree of success of actions taken - compare obtained results against expected results from the plan.
- Determine what modifications are needed prior to full implementation

In this step the team will need to examine the results of the data collected, looking for areas that require further attention and conclusions that can be made to take action.

TOOL: RUN CHART

A run chart plots points on a graph to show levels of performance over time. This kind of information helps teams identify which areas are in need of improvement and when conditions are improving. Follow these steps to create a run chart:
1. Decide what the chart will measure. Which you have already done in Step 2, making sure that the data collected encompasses a time period long enough to show a trend.
2. Draw the graph’s axes. The horizontal (x) axis should indicate time or sequence, and the vertical (y) axis should indicate what is being studied, in increments, as shown in the example. Be sure to clearly mark the units of measurement on the chart.
3. Plot the data points and connect them with a line. Plot the correct measurement for each point in time. When all the points are plotted, connect them with a line.
4. Evaluate the chart to identify meaningful trends. The team may want to seek expert advice for this interpretation. The purpose of this tool is to help the team to focus on trends and patterns, although a single point may indicate an event worthy of review, the purpose of the chart is to show patterns and trends in performance.
5. Investigate the findings. Any findings that signify a notable trend should be looked at more in depth to determine the reason for the change. If the change represents positive movement it should be incorporated into the process, if negative it should be eliminated.
Figure 6: Run Chart

This run chart is used to display data over time. Displaying average hold times for days of the week. This type of data display clearly indicates a spike on Monday for long hold times and could indicate the need for additional staff coverage or the need for a deeper dive into the raw data collected on Monday to see exact times during the day when hold time is highest.
STEP 4. A = ACT

A = ACT - on the information.
- Were the results what was expected– if yes, implement the change on a larger scale or continue to monitor
- If the results are not as expected, repeat the plan/do/check/act cycle and test another potential idea for change- remember you collected several in the brainstorming activity.
- Document the process and revised plan

If you were successful, standardize the plan; otherwise, continue in the cycle to plan for further improvement. Often the desired improvement is not achieved in one cycle, and so the cycle is repeated. Even if the desired aim is achieved, new aims and goals arise and the process begins with step one. With each new cycle the knowledge learned opens up the possibility for other improvements.

As each full PDCA cycle comes to completion, a new and slightly more complex project can be undertaken. This rolling over feature is integral to the continual improvement process.

When you have a success what do you do next? After several successful PDCA cycles the next step is to implement the change on a broader scale. For example, the solo practice must move the new way of doing things from just one office to all the offices in the group or to all the offices insured with MPIE. It is imperative to consider how can others be helped to bring about change? After the office has enjoyed the fruits of improvement, it is critical to share them with others and to spread best practices. Often more is learned from others than anticipated when successes are shared. MPIE's website will host a library to collect the improvement projects submitted and will facilitate the cross learning for all of insured practices.
EXAMPLE IMPROVEMENT STORY USING P.D.C.A.

West Michigan Health Clinic

Introduction

The West Michigan Health Clinic is a clinic that serves a community of 15,000. The staff is made up of: a director, 3 doctors, a nurse, a medical assistant for each doctor, a health assistant, an accountant, one laboratory technician, two secretaries, and cleaning staff. All services are provided on an outpatient basis. This is a family practice clinic and patients present with the most common illnesses. Services provided by the clinic include: laboratory services, family planning, primary health care, immunization, preventative maternal and child health activities.

Improvement Project: Ensure diagnostic test results are returned to patients in a timely manner for better patient outcomes and increased satisfaction

Mrs. Evans, the Health Clinic Manager, recently completed the training program on quality improvement provided by MPIE, her professional liability insurer. She was invited to the training program to learn how to guide her staff in the use of the tools for quality improvement in healthcare and to ensure her clinic would be able to successfully meet the requirements of the loss prevention activity tied to the premium incentive program offered by MPIE.

Mrs. Evans is interested in using some of the new techniques she learned in the quality improvement training to try to determine why her clinic has missed reporting to patient’s critical results that may have affected the patient’s outcome. She decides to carry out a quality improvement project with the participation of a team drawn from the health clinic staff and patients. The objective of her first quality improvement project will be to improve the process of notifying patients of their diagnostic test results. In carrying out the exercise, the team will first clarify the S.M.A.R.T. problem statement and then begin to identify the primary reason why patients are not always contacted. They will then establish the causes for the problem and define a strategy and a plan of action for solving it while collecting data to monitor the process and show improvement. Mrs. Evans expects this quality improvement process to take three months.

Quality Improvement Steps

The steps of the quality improvement process will include:

- Getting started:
  - establishing a quality improvement team
  - creating the vision and mission statements for this project
• Plan
  o develop a long-term plan for the clinic
  o Identify the needs or issues
  o Brainstorm solutions
• Do-implement the recommendations
• Check-Monitor the changes
• Act-React to the success of the implementation
  o Continue to implement next change
  o Monitor and review for other needed changes

Establishing a Quality Improvement Team

Mrs. Evans learned that she needs to establish a team to carry out the quality improvement process. The team will include representatives of both the health clinic staff and the community (i.e. patients), will be based in the health clinic, and will work with both the clinic’s staff and its clients. The primary tasks for the team to accomplish over a three-month period are:

• to define the health clinic's vision and its mission for reporting results to patients
• to define the strategic plan for this quality improvement project
• to identify the problems to solve
• to determine the action steps needed to solve the problem
• to monitor both planning and implementation
• to encourage acceptance, by both staff and clients, of the recommended changes

The effectiveness of the quality improvement process will depend in great part on the ability of the team to work well together, and, particularly, on their ability to work well with the rest of the health clinic staff and the community. Mrs. Evans realizes that the team should be multidisciplinary and should have a democratic working structure. Until now, the staff at the clinic worked as a team in providing services, but the team structure was hierarchical rather than egalitarian.

She realizes that working in a nonhierarchical manner, where all participants are equal, will be challenging for her staff members and perhaps even for herself. But she also knows that using the tools she has learned about in her training will help the team structure its interactions and focus on identifying the health clinic's problems and finding solutions that will benefit them all.

In establishing the team, Mrs. Evans uses a number of tools that she learned about during her quality improvement training.

Building the Team

First, Mrs. Evans asks for volunteers from the Health Clinic staff to be members of the first quality improvement team. She knows it is important for staff
members to decide for themselves to be on the team so that they will be motivated and excited about the process. Next, Mrs. Evans utilizes the Strategies for Developing an Effective Team that she learned at her quality improvement training. She learned that characteristics of an effective team include:

- Team members share leadership roles.
- The team develops its own scope of work.
- The team develops concrete work products.
- Team members are mutually accountable for work products.
- Performance is based on achieving team products.
- Problems are discussed and resolved by the team.

Mrs. Evans issues an invitation for the team that includes objectives, methodology, and time commitment. She is happy that seven people have volunteered to be on the team. The team is composed of one doctor, Dr. Soprano; one nurse, Nurse Anderson; the Office Manager, Mrs. Vandyke; the logistics manager, Mr. Jones; the laboratory manager, Miss. Clock; one patient, Mrs. X; and herself.

Mrs. Evans distributes the team’s objectives, methodology, and time commitment to all other staff and sets up a schedule of informational meetings. Next, she asks the team to help her brainstorm a list of ground rules by which they will work. Some of the ground rules the group generates include:

- respect one another
- attend meeting on a regular basis
- arrive at meetings on time
- listen to each other
- share ideas
- communicate
- discuss and resolve problems as a team
- make decisions by consensus

The team members explore how their group -- composed of staff and a patient with very different backgrounds and responsibilities -- can find common ground to discuss problems in a mutually respectful manner and work towards satisfactory resolutions.

Mrs. Evans supports this process by stressing the unique and valuable contributions each team member has to add to the process of improving the quality of administrative and clinical services. She reviews the elements of the consensus process, underscoring her commitment to supporting each team member and encouraging each team member to share their ideas and thoughts. Team members express their willingness to try, but in private most seem skeptical.
PLAN: Creating the S.M.A.R.T. Problem Statement

Mrs. Evans now asks the team to consider what the health clinic's S.M.A.R.T. problem statement should be. The S.M.A.R.T. problem statement is a description of what the team is working on and how it will be measured. The team will work together to write this statement. The tool they will use is the Brainstorming Technique, which is an idea generating technique that can help capture everyone’s ideas and help them to feel part of the team. Once the S.M.A.R.T. problem statement is created by the users, the team will share it with management for approval of resources.

Mrs. Evans begins by writing the problem on the white board for all to see: “Our patients have not been receiving results of diagnostic testing from our clinic.”

Mrs. Evans asks the group for help in writing an objective for resolving this problem.

Using the Brainstorming Technique

Mrs. Evans asks uses the Brainstorming Technique. After discussing the technique with the team, Mrs. Evans asks the team to consider the following question; she pauses and gives them time to reflect:

“Let’s discuss what the objectives for this team should be in order to resolve the stated problem.”

After the group finishes, Mrs. Evans ask the team to share ideas out loud. The ideas are discussed and written on a white board for all to discuss.

Mrs. Evans then summarizes the ideas of the group. The goal of the team according to the users is:

"Following a diagnostic procedure, the referring health clinic is responsible to notify patients of diagnostic results received in the health clinic.”

The next set of questions she asks them to consider are:

- What should we measure in order to understand how well we are currently doing?

As they did last time, she asked the staff to share their thoughts aloud and wrote them on a board for all to read. The team helped to organize the ideas into categories and re-group them according to their ideas until a consensus is reached.
Mrs. Vandyke then summarizes the measurement ideas into the current problem statement.

"The health clinic should provide diagnostic results immediately to 100% of patients referred for a diagnostic test. This service should be provided in a professional manner, by warm and respectful staff within 24 hours of receiving the results."

Mrs. Evans next asks the following questions to set an achievable objective for the team.

- Can we get it done in the proposed timeframe?
- Do we understand the limitations and constraints?
- Can we do this with the resources we have?
- Has anyone else done this successfully?

The team recognizes that they will need to understand the issues around why they have not been successful thus far and plan the appropriate changes. Therefore, the team sets achievable objectives as to the timing of this project.

"In 6 months the health clinic will increase the rate of successfully notifying patients of diagnostic results from 65% to 90% within 48 hours of receipt of the results in the clinic. By the end of the 9th month we will provide diagnostic results to 100% of patients referred for a diagnostic test within 24 hours of receiving the results. This service should be provided in a professional manner, by warm and respectful staff."

The last step of developing a S.M.A.R.T. objective, the team discusses the timeliness of the proposed project surrounding this objective and realizes that they need to put a counter measure on the problem immediately. The team recommends that the clinic hires an intern from a nearby nursing school to come in and spend 2 hours/day working with the nurse to free her from some daily duties to allow her time to review the incoming results and make sure patients are notified immediately if the results are critical to the patient for follow-up and all patients are notified in the best way possible. They present this to management and are approved to bring in the intern.

**ANALYZE THE PROBLEM**

At this point Mrs. Evans and the team begin to look specifically at the process involved in the test ordering process. Mrs. Evans explains the Process Mapping tool and that it will help them map out the process and look for problem areas. The team decides to observe the process through shadowing a patient through the steps involved in their clinic visit. Through direct observation they observe all the steps taken to complete the process and all the staff involved. As a team they identify the steps to complete the process, keeping in mind the boundaries of the
map so as to keep it manageable to their problem only. Mrs. Evans and the team
draw the process out by putting each activity in a rectangle, each decision point in
a diamond on post-it notes they line up the steps (post-it notes) in the sequence
of how they occur in the clinic and connect the steps with arrows. The use of post-
it notes to write each step on allows the team to move steps around easily and
may allow for easier use for improvements when looking at the process later.
Once the steps are in order, the team identifies some repeated steps involving
several handoffs of the order forms from the physician to the patient, from the
patient to the check out staff, from the check out staff to the referral coordinator.
They identify that there is some waste in this process that could be eliminated as
well as improving the efficiency of the process overall. They write that idea down
to come back to in the overall process improvement of the test ordering process.
IMPROVEMENTS

As a result of the brainstorming and analysis of the process, the team comes up with five possible strategies. They also used the 5 Why’s to ensure they have identified the root cause(s) of the problem with getting test results called to patients. This helped them stay focused on the most important areas to improve.

1. Designate one person to review and communicate results to all patients.
2. Designate a person to triage results and then pass on to primary care giver to contact patient.
3. Hire new staff to be responsible for entire process – ordering to patient notification.
4. Purchase web based notification system that patients call into and obtain results.
5. Mail a postcard with results or copy test report to the patient directly.

DO

Mrs. Evans and the team decided to start on a small scale and test the one improvement the team liked best. They decide to designate one person to review and communicate results to all patients. This is possible now because they have the intern helping out but will need to address this staffing issue on a long term basis if the new process goes well. Mrs. Evans speaks with the Mrs. Vandyke on how best this new process may be implemented with existing staff. With some workload shifting they are able to have Nurse Anderson become the lead on this new process. Nurse Anderson will use a check sheet to collect data to set the baseline for measuring improvement after the process change has been put in place. The team identified the indicators that will be measured using Indicator Matrix.

It is at this time that the team also looks at eliminating waste in the process using the 5S process. They decide that it would be more efficient to have the physician place all check out documents for patients needing testing at the referral coordinators desk at that time she will schedule the follow up tests if possible and check the patient out. If there is a back up the check out person may assist in taking over the check out process from the referral coordinator.

The team also needs to define the monitoring system for controlling the quality process. They decide on which indicators to use, what type of data collection will be used – (direct observation and patient survey), how frequently the indicators will be produced, how the data will be analyzed and who will process the data. The new process is put in place for the next three months with a plan to meet in two weeks to evaluate the status of the process. Ms. Evans will report on the findings at the bi-weekly staff meetings to keep the entire clinic involved and knowledgeable of the process improvement project.
CHECK

After the three months, the check sheets and data collected after the process change is compared to the pre-change data. This is done at a three month stage in order to evaluate and make corrections or change the approach all together if the team finds that the change did not achieve the improvement they desired. To analyze the data Mrs. Evans uses a run chart to plot the data over time to show if there has been improvements. The data did show improvements and patient satisfaction rates increased dramatically.

ACT

Since the process improvement proved successful it will be permanently implemented. No additional staff was needed as improvements in efficiency in the check out process allowed for staff cross training to cover for Nurse Anderson and allow her to focus time on the review and call back function.

REPORTING

Mrs. Evans is now ready to prepare her report for MPIE. She has keep track of her process and recorded the team’s progress. She has the members of the team listed, the S.M.A.R.T. statement, the process map diagramed, the list of brainstormed possible solutions, the check sheet developed to show indicators used to measure and the run chart showing the measurement of improvement. She submits the necessary documentation to MPIE and ensures that her clinic receives their discount.

Resources:

Institute for Healthcare Improvement www.ihi.org/IHI/Topics/Improvement/ImprovementMethods/HowToImprove/testingchanges.htm

Michigan Peer Review Organization www.mpro.org/education


Chapter Seven

MEASUREMENT AND REPORTING

A Goal without a Plan is Just a Wish.
Antoine de Saint Exupery
MEASUREMENT

If we wish to improve quality then we must measure quality. Measurement provides objective and quantitative values to subjective experiences. Individual experiences and biases or incidents occurring over long periods of time can impact the validity of measurement—but never-the-less measurement remains the sole method for showing improvement or the lack of improvement.

Relevant data need to be measured in small samples over time if the goal is to improve. To be able to influence practices a modification must occur and re-measurement performed to see if actions taken have altered the practice.

Data need to be used for providing feedback to all staff – most importantly those that affect the area being measured. Feedback has to be done in a collaborative and non-punitive manner, so as to build trust, which is essential for further change. The more individualized the data the more meaningful it is to individuals and more likely to motivate change.

There are excellent measurement tools and explanations available at the Institute for Healthcare Improvement’s workspace website: http://www.ihi.org/ihi/workspace/
The Improvement Tracker allows you to track any of the measures currently available in the Topics area of IHI.org. Just select the measure to track (or create custom measures), set the aim, and enter the data. The Improvement Tracker automatically graphs that data. It creates reports, and even customize them for various audiences — the team, the CEO, the community.

Improvement Tracker allows leaders to track predefined standard measures in several topic areas, with more being added periodically. Additionally, leaders can create custom measures to track any data desired!

Below is a list of the topics currently available for office based care. There are also lists for chronic conditions such as Asthma and Diabetes. Consider using this resource to track and measure the selected improvement project.

Ambulatory Care Projects

Click on this link to see other organizations improvement projects for Ambulatory care: http://www.ihi.org/ihi/workspace/tracker/AllTrackers.aspx
An account with IHI may need to be set up to access fully all resources offered. It is strongly recommended that this site be explored and projects reviewed to help in identification of an improvement project.

Improvement stories are available at:
http://www.ihi.org/IHI/Topics/OfficePractices/Access/ImprovementStories/

Improvement tools developed by others teams and shared on the IHI web site are at: http://www.ihi.org/IHI/Topics/OfficePractices/Access/Tools/
This is a list of the improvement project areas completed by other organizations available at IHI web site.

<table>
<thead>
<tr>
<th>Daily Capacity</th>
<th>Satisfaction with Phone Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Demand</td>
<td>Satisfaction with Today's Visit Wait</td>
</tr>
<tr>
<td>Future Capacity (Primary Care Only)</td>
<td>Time</td>
</tr>
<tr>
<td>Individual Panel Size</td>
<td>Satisfaction with Wait for Today's Appointment</td>
</tr>
<tr>
<td>New Patient Visits</td>
<td>Team Member / Patient Continuity</td>
</tr>
<tr>
<td>No Shows</td>
<td>Team Member / Patient Continuity</td>
</tr>
<tr>
<td>Office Visit Cycle Time</td>
<td>Time to Third Available Appointment</td>
</tr>
</tbody>
</table>

The Clinical Microsystems and Outcomes improvement project is another area to look to for improvement projects and improvement models:
http://clinicalmicrosystem.org/materials/workbooks/

The following article is shared with permission. It is intended to provide an excellent resource for physician practices to look at data gathered in the office in a broad way to see trends and areas for potential improvement. It has a downloadable link to an easy to use Excel workbook that allows you to input your data and create the graphs described in the article to create a dashboard for the practice. By double clicking on the title you will be taken to the original document and embedded links. It is recommended to provide your dashboard in the report to MPIE as evidence of how you selected your improvement project.
Putting Measurement Into Practice With a Clinical Instrument Panel

A few key measures can help you gauge whether your practice is headed in the right direction.

Scott Endsley, MD, MSc

Welcome aboard Flight 111 to Kansas City. We’ll be cruising at … well, I can’t tell you that since our cockpit instruments aren’t functioning. We’re not able to tell you what our airspeed or estimated time of arrival are either, or even what our direction is, but we’re experienced pilots, trained to fly by the seat of our pants. So sit back, relax and enjoy the flight.”

Would you fly this airline again? If you have a basic appreciation for safety and efficiency, probably not. Nevertheless, we ask our patients every day to “sit back and enjoy the flight” and trust that we, as experienced physicians, can guide them on their path to better health – despite the fact that we don’t know how well our practices are actually performing.

Two national initiatives – the Idealized Design of Clinical Office Practices initiative of the Institute for Healthcare Improvement and the AAFP’s Practice 2010 initiative – are proving that office practices can produce health care that is safe, evidence based, satisfying to patients and staff, cost effective and financially viable. Central to our efforts to improve the quality and safety of health care is measurement of our processes and outcomes in a timely and useful way. By incorporating measurement into daily practice, you will be better able to diagnose the strengths and weaknesses in your practice, identify
ways to improve your health care delivery processes and evaluate whether changes in your practice have made things better over time.

**KEY POINTS**

- A clinical instrument panel is analogous to a cockpit instrument panel in an airplane or a dashboard display in a car.
- Unlike report cards issued by third parties, instrument panels are meant for practice learning and true self-assessment.
- For a practice’s instrument panel to have value, its physicians must consult, interpret and act on the data.

**Measurement, good; report cards, maybe not**

Chances are you’re already measuring a number of aspects of your practice, especially where profitability and productivity are involved. But chances are also good that you have no idea how you are doing in other important respects.

True, third parties are probably monitoring your pharmaceutical prescribing, surveying your patients about their level of satisfaction, tracking your utilization rates for procedures and hospitals and producing “report cards.” But report cards are derived largely from the claims you submit and, therefore, reflect historic, high-level estimates of performance. They are external performance summaries that many physicians fear are a search for bad apples or simply a contract negotiating tool. There is also evidence that report cards are unreliable tools for differentiating one physician from another. One effect they have had is to make some physicians resistant to measurement. For whatever reason, few physicians actually use the available data to improve their processes of care.

Don’t confuse report cards with internal measurement, though. Internal measurement is designed to help guide your practice through real-time monitoring of practice trends and outcomes, and to serve as a basis for true practice learning. It is, in the best sense of the word, a self-assessment. When you measure your own performance, you can measure just what is important to you, have confidence in the way the measurements are taken and act on the results as you see fit.

**So much to measure, so little time**

But what do you measure? How can you and your staff find the time to measure it? And how can you deal with it all? One good answer to all three questions is the clinical instrument panel, analogous to the instrument panel in an airplane or the dashboard display in a car. It is a collection of key measures for your practice, giving you a quick way to assess your practice’s performance and ensure that it is moving in the right direction. What makes the clinical instrument panel so valuable is its focus on simplicity. It requires measurement of only a few parameters – the ones that matter most to you – with minimal data collection, and it displays the results in simple, easy-to-grasp formats. (See the sample instrument panel on page 104.)
Measurement tips

Before you begin to construct an instrument panel for your practice, you should understand some basic measurement guidelines, offered by Eugene Nelson and colleagues at Dartmouth’s Center for Evaluative Clinical Sciences: 2, 3

1. “Seek usefulness, not perfection, in measurement.” The goal of internal measurement is not to conduct a randomized clinical trial ready for peer-reviewed publication but to produce “good enough” data you can use in a timely manner to assess how your practice is doing and whether you are making progress toward your goals.

2. “Use a balanced set of measures.” Because health care is complex and dynamic, the more angles you can measure, the more complete a picture you will have of how your practice is doing. If you measure only a few parameters, think carefully about the important aspects of performance, from financial viability to clinical quality and patient satisfaction to staff satisfaction and competence.

3. “Keep measurement simple – think big, but start small.” Don’t try to measure everything in your practice. Instead, start with small sets of measures that are easily understood and collected within your practice. As your practice changes, you can change your measure sets as needed. The table on page 105 offers a starter set of measures that you can choose from or adapt to the unique constraints and characteristics of your practice.

4. “Use qualitative and quantitative data.” Purely quantitative data can lose the richness of your staff’s experiences and your patients’ personal stories. Build in opportunities to get impressions, perspectives, motivations, needs and desires from your staff, patients and colleagues through focus-group discussions or open-ended surveys.

A SAMPLE INSTRUMENT PANEL

Below is a sample instrument panel, constructed in Microsoft Excel, designed to gauge the performance of a family practice in nine key areas. There is nothing magical about the number nine; you may want fewer “gauges.” In constructing your instrument panel, choose the measures and format that are most useful to your group. To download the sample instrument panel, click below.

Download in Microsoft Excel format
5. “Write down the operational definitions of the measures.” It is crucial that everyone who collects and uses a specific measure understands the aim of the measure and the specific method for collecting the data and scoring it. As a routine part of practice, your procedures for measurement should be as precise and explicit as any other procedure in your office.

6. “Measure small, representative samples.” A universal sample is rarely available or required for practice improvement. Instead, it is more reasonable to select a sampling strategy, such as surveying every fifth patient or reviewing 20 charts per physician.

7. “Build measurement into daily work.” To the extent possible, involve everyone in your office in collecting data relevant to their work. Use self-scoring work sheets that simplify the process of collecting data. And try to use data that are already being collected (e.g., via vital signs, flow sheets and lab reports), rather than duplicating existing efforts.

8. “Develop a measurement team.” A team approach allows your staff to share not only the workload involved in measuring your processes but also their insights into
measurement and practice improvement. A team approach also helps staff members feel more invested in the process. Identify individuals well suited to these tasks and assign them the responsibility of overseeing the measurement activities of your office.

A STARTER SET OF PERFORMANCE MEASURES

The following table presents a variety of sample performance measures, as well as possible definitions and collection methods, to help you get started in constructing your clinical instrument panel. To use these or any other measures in your practice, you'll need to decide on and write down the fine points, such as how often you'll survey your patients or whether you'll collect and display data by physician or for the entire group. But don't get so bogged down in the fine points that you lose momentum. Once you've picked your measures and defined them, simply choose a data collection method that makes the most sense for your group. Then, move on quickly to actually collecting the data and using it to improve performance over time.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Definition</th>
<th>How to collect it</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visit quality</td>
<td>Percentage of patients who report being delighted with their visit.</td>
<td>Conduct a patient satisfaction survey; include every nth patient in the office.</td>
</tr>
<tr>
<td>Team morale</td>
<td>Percentage of staff who recommend your practice as a great place to work.</td>
<td>Conduct a staff satisfaction survey; include all staff members.</td>
</tr>
<tr>
<td>Cycle time</td>
<td>Average number of minutes from patient check-in to patient check-out.</td>
<td>Give every nth patient a time card, which the receptionist stamps on registration and check-out. Collect time cards at end of visit.</td>
</tr>
<tr>
<td>Access to care</td>
<td>Number of days until the third next available appointment.</td>
<td>Consult your appointment calendar. Imagine a patient is calling to request a routine appointment. Calculate the number of days until the third next available appointment slot for each physician.</td>
</tr>
<tr>
<td>Practice size</td>
<td>Number of patients who belong to your practice or the number of active and unique patient charts seen within the last 18 months.</td>
<td>Consult your practice's administrative records.</td>
</tr>
<tr>
<td>Operating cost per visit</td>
<td>Total monthly operating expenses divided by the number of monthly visits.</td>
<td>Consult your practice's financial and administrative records.</td>
</tr>
<tr>
<td>Support staff costs</td>
<td>Total monthly cost of non-physician salaries and benefits divided by total monthly operating expenses.</td>
<td>Consult your practice's financial and administrative records.</td>
</tr>
<tr>
<td>Preventive</td>
<td>Select any prevention goal. For Review 20 charts that meet inclusion</td>
<td></td>
</tr>
<tr>
<td>Measure</td>
<td>Definition</td>
<td>How to collect it</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>care</td>
<td>example, women age 50 to 64 years on last birthday who have had a mammogram in the last two years.</td>
<td>criteria looking for documentation that the preventive service goal has been met. Include charts for each physician within the practice.</td>
</tr>
<tr>
<td>Chronic disease care</td>
<td>Choose an appropriate measure for the most common chronic disease in your practice. For example, the percentage of patients with diabetes who have an HbA₁c &lt; 8.0.</td>
<td>Review 20 charts that meet inclusion criteria looking for documentation that the chronic disease goal has been met. Include charts for each physician within the practice.</td>
</tr>
<tr>
<td>Patient-physician match</td>
<td>Percentage of patients who see their own physician during their appointment.</td>
<td>Review 20 charts looking to see whether the patient’s last visit was with his or her primary physician.</td>
</tr>
<tr>
<td>Staffing levels</td>
<td>Number of full-time-equivalent (FTE) support staff per FTE physician.</td>
<td>Divide the number of FTE staff by the number of FTE physicians.</td>
</tr>
<tr>
<td>Overhead</td>
<td>The percentage of revenue spent on overhead. (This includes all expenses except physician compensation and benefits.)</td>
<td>Consult your practice’s financial and administrative records.</td>
</tr>
<tr>
<td>Visits per hour</td>
<td>Divide the number of visits provided over a specified time period by the number of hours worked during that same time period.</td>
<td>Consult your practice’s appointment schedule or administrative records for the previous week in practice.</td>
</tr>
</tbody>
</table>

**Constructing your instrument panel**

Guided by the above principles, you can begin to create your practice’s instrument panel.

**Step 1: State your aims.** In other words, be clear about what you are trying to accomplish. Your measurement efforts should be part of an ongoing improvement effort. For each aspect of practice that you are seeking to improve (e.g., patient satisfaction, chronic disease care, practice revenue), clearly define your goals. For example, one of your goals for improving chronic disease care might be “to increase the percentage of patients with diabetes who have a current HbA₁c of less than 8 percent.” (At this point, you may not have enough data to determine how much of an increase you expect to accomplish or by when, but once you gather your baseline measurements, you can make your goals more specific and attach a time frame.) Clarifying your purpose is a crucial first step, as it will drive your improvement and measurement activities.

**Step 2: Select your measures.** Choose multiple measures (no more than eight to 10) that will help you assess whether you are making progress toward the goals you have selected. The table on page 105 provides a starter set that you can pick from, or create
your own. Remember to select a balanced set of measures. For example, if you are trying to increase efficiency in the office, you could measure patients’ cycle time (the amount of time from check-in to check-out) as well as their satisfaction with the visit. This will help you assess whether your quest for efficiency is making other parts of your practice suffer.

**Step 3: Define your measures and data-collection methods.** For each measure you select, write down the operational definition you will use in your practice. Also, write down the protocol or method you will use to collect and analyze the data, including how often the measure will be collected and by whom. Designate a staff person to maintain these definitions and procedures and update them as needed.

**Step 4: Decide how your measures will be graphed and displayed.** Graphing the data you collect for your instrument panel will help facilitate understanding of how your practice is doing over time and where there might be opportunities for improvement. Run charts are helpful for spotting trends. Bar charts are useful for comparisons. The sample instrument panel on page 104 displays a variety of graphs that help gauge the overall performance of a family practice.

Rather than storing your instrument panel in an inaccessible computer file, consider creating a bulletin board in your office as a “data wall” to allow your staff to view their progress on a regular basis. Also, if possible, display your instrument panel as a one- or two-page handout, which you can easily distribute to your staff or share with patients or third parties as needed.

**Step 5: Use the data.** As well-functioning as a cockpit instrument panel might be, if the pilots don’t read the data, interpret it and make mid-air flight corrections based on the data, the instrument panel becomes useless. Similarly, for a practice’s instrument panel to have value, its physicians must actually use it for monitoring and improving their practices. Consult, analyze and update your data often. Present the current data at regular staff meetings, and use them as a focal point for discussions on progress and opportunities for improvement. Use them also to celebrate accomplishments.

**Step 6: Revise as needed.** Regularly assess whether your data collection efforts are answering the critical questions for your practice. If they are not, do not hesitate to discard them and find new measures that might better meet your needs. Likewise, if you have attained the goal you have set in a specific area or if the measure has remained steady over a long period of time, identify new goals and measures that will assist you in moving forward.

**A tool for improvement**

It’s important to remember that measurement is simply a tool. It is not the end point – practice improvement is. If you approach measurement with a spirit of curiosity (not judgment) and make it practical (not cumbersome), it will enlighten and energize your efforts to create a high-quality medical practice.
ADDITIONAL RESOURCES

For more information on using measurement to improve medical practice, consult the following resources:


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*Dr. Endsley is a family physician practicing in Phoenix. He serves on the Performance Measurement Initiative Task Force of the Institute for Quality Improvement and the AAFP's Commission on Quality and Scope of Practice.*


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REPORTING REQUIREMENTS
REPORTING TO MPIE

After you have read the materials in this manual and become familiar with the concepts of the PDCA cycle tool it will be expected that you will choose an improvement project in your practice and apply the concepts taught in this manual and in the accompanying education course to making that improvement and of course checking the improvement for success.

As you are aware, every three years a practice activity is required to maintain the physician’s premium discount offered through our Physician Loss Prevention Program (PLPP). In the past this activity consisted of a self survey process this will be changing for the next cycle of activities for insured practices. We feel very strongly that this is the right time to bring you materials, tools and training on the quality improvement process and have you incorporate the use of these concepts into the operations of your practices.

Some of you may have access to a staff that specializes in quality this would be an excellent person to work with in the process. Those of you that do not have dedicated quality staff will become the quality person for your practice. Ideally this will be the office manager or clinical nurse with oversight by the office manager or the physician.

Notice will be sent to the practice informing of the participation requirement in the year it is due. The practice will have the year to learn the concepts if not done so already, to select an improvement project, make the changes, monitor and measure changes and report back to MPIE on the process and impact. It is highly encouraged that you select an improvement project that will have a positive impact on patient safety or risk reduction. The areas of most concern that would meet this recommendation are: prescription medications and the processing of lab, x-ray, and diagnostic tests. Improved systems for these tasks could potentially lead to fewer errors and improved safety for millions of patients.  

WHAT TO REPORT TO MPIE

1. Safety Attitudes Survey Results (baseline and change)
The practice should report the baseline findings of their Safety Attitudes Survey results compared to the change in scores when completed again at year’s end. Look for a change in the scores that reflect an improvement in safety attitudes as a result of the education/training and the quality improvement project. It is recommend that the baseline survey (either AHRQ or SAQ) be completed as soon in the year as possible (January/February) to allow for as much time as possible to pass before completing the second survey (November) in order to measure change. The links to the two survey tool options is available in Chapter IV.

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2. Reporting Form
The quality project reporting form is available as a template on the MPIE website at www.mpie.org under the member’s only section/quality improvement project. This form will allow you to document your quality project and process.
A paper copy has been included in this manual for your reference, it is preferred that all practices submit electronically via the online template.

3. Photos, Process Maps, Improvement Tracker Graphs, Dashboard
You are encouraged to submit photos of before and after shots if you have an improvement project that lends itself to this type of documentation of change. The best change projects for photo documentation might be ones that involved the physical environment of care, such as standardization of equipment and setup of patient exam rooms. You are also highly encouraged to take photos of your process mapping or brainstorming sessions and submit the photos as evidence of your steps in the quality process. You may also include any graphs from the tools that were listed in this manual to help you with selection of an improvement project (Dashboards), or project tracking to completion (Improvement Tracker Graphs).

4. Anything else you feel will help others understand the improvement process you choose.
It is acceptable to use a quality improvement project that you may be involved in with another entity – such as the BCBS Medical Home initiatives (both clinical care initiatives and system based initiatives such as test tracking), hospital directed improvement projects, accreditation/certification projects such as AAAHC, or The Joint Commission or ISO certifications. If you have any questions on whether a project will be accepted for MPIE credit please contact our office to discuss.
# REPORT FORM TO SUBMIT TO MPIE

## Current State (draw)

![Current State Drawing](image)

## Ideal State (draw)

![Ideal State Drawing](image)

## Current Condition

<table>
<thead>
<tr>
<th>Facts (symptoms):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem:</td>
<td></td>
</tr>
<tr>
<td>Cause:</td>
<td></td>
</tr>
<tr>
<td>Measurable Target:</td>
<td></td>
</tr>
</tbody>
</table>
PLAN

Specific AIM/S.M.A.R.T. Statement:
If I _____________________________________________.
then _____________________________________________.

Describe Change:

Measureable Result:

How testing:

Brainstorming: (list top 3 potential test improvements)
1. 
2. 
3. 

Submit Process Map: (handwritten, computer generated or photographed)

DO
Describe which improvement the team choose to test:

Results from test:

Submit Check Sheet: measurement and indicators selected
(submit a blank check sheet and summary of baseline measurements)
If used describe any elimination of wastes using the 5S process (submit before and after photos)

Describe the monitoring process: (indicators used, type of data collection method, frequency of measurement, and how the data was analyzed):

CHECK
Describe the measured results and how they compared to the predictions:

Did the test results confirm the AIM statement: YES NO

New problems created:

Impact on current problem:

Submit Run Chart: submit data graphically or written that explains the change over time. Did the test change result in desired outcomes?
<table>
<thead>
<tr>
<th>ACT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Describe if the test change was successful</strong> and any additional requirements that were made to ensure success of the permanent change:</td>
</tr>
</tbody>
</table>

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Describe what modifications to the plan will be made for the next cycle from what you learned if the test change was not successful:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Steps taken to standardize and communicate:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Steps taken to spread ideas to other areas:</th>
</tr>
</thead>
</table>

Submitted by: ________________________________________

Email and Phone: ___________________ / ___________________

Office Name: ___________________________________________

Physicians in Practice:
Resources:
Institute for Healthcare Improvement
www.ihi.org/IHI/Topics/Improvement/ImprovementMethods/HowToImprove/testingchanges.htm


“Don’t just do something…. stand there.” Use the roadmap, understand the problem, understand what you want the process to look like when you are done, experiment with improvements, try them, test them, reevaluate them and then do it all over again, because ......there is no finish line in this kind of work!!!
CAUTION AND WISDOM

This section is for reinforcement of cautions, best practices and words of wisdom that have stood out during the learning of the concepts taught in this manual.

Quality improvement has proven to be successful in reducing costs, reducing complications, and improving patient satisfaction. Hospitals and clinics that have embraced a culture of safety and quality improvement have experienced declines in: patient mortality, rates of adverse events, costs of care, delays in diagnosis and treatment.

Ultimately, all healthcare providers must incorporate patient safety and quality improvement into every aspect of office-based care. This is not the bar toward which we aspire; but rather the bedrock on which we build. It is critical to internalize the principles of patient safety and quality improvement into everyday practice. As the healthcare landscape continues to evolve toward providing more services in the office-based setting we will undoubtedly see higher levels of scrutiny and regulation. Supporters of the safety and improvement movement struggle to create practical and relevant methods to promote behavior change – that will foster a move from discussion to practice.

Technological progress in healthcare will continue to push procedures to move into the office setting. In the hospital setting, physicians have been supported with institutional resources to create safe environments, to participate in quality improvement projects and to work in a safety culture – one where co-workers have all participated in safety training and speak the same language of safety and where expectations are known regarding safety behaviors. This training has yet to occur in the office-based environment or at least at the same level of intensity.

Regardless of whether a large infrastructure, electronic medical record system, or significant capital investment exists, office practices can begin or continue to move toward a fully formed safety culture with a few simple steps:

1. Designate a “medical director” with specific patient safety responsibilities.
2. Appoint a “quality guru” so that someone owns the quality process.
3. Survey and teach all staff about a safety culture and “walk the talk” when mistakes happen.
4. Foster an environment where ideas for improvement are highly valued and rewarded.
5. Start with small improvement projects and never stop improving.
6. Use this resource and seek out other resources to push your quality and safety program further.
WORDS OF WISDOM

MEASUREMENT
Remember, benchmarks aren’t the same as best practices. National averages don’t reflect the unique cultural and social needs of individual patient populations.

SAFETY CULTURE
While mission statements reflect what an organization would like to be, culture reflects the current reality, via behaviors and norms. An effective values statement can be used as a standard for selecting improvement initiatives, helping ensure that they don’t sidetrack what’s really important.

THE HOOK FOR CHANGE
What is the missing ingredient? It is a sense of urgency. Without a genuine sense of “we’ve got to do something,” improvement activities have trouble even getting launched. The status quo should be made less attractive than the unknown. Beyond data and analysis, facts that generate strong feelings and motivation are needed to sustain change.

TEAMS AND COMMUNICATION
Remember that long improvement cycles can dissipate energy and enthusiasm. If there’s disagreement within the team regarding which changes to make first, select several that can be tested and learned from rapidly to see what works. Make sure that short tests move you toward your goal. Finally, communicate with senior leadership regarding initial goal(s) to get feedback and support.

QUOTES TO KEEP YOU GOING

“Quality means doing it right when no one is looking”-Henry Ford

“Be a yardstick of quality. Some people aren't used to an environment where excellence is expected.” Steve Jobs

“There is only one corner of the universe you can be certain of improving, and that’s your own.”

“The best performance improvement is the transition from the non-working state to the working state.”

“Believe everything can be improved”

“Quality improvement is the responsibility of everyone at all levels in the practice.”
AFTERWORD

As this manual ends, it represents the beginning for your quality work. Since beginning to write this manual over a year ago the abundance of quality related materials have flourished. Even as I write this closing, I have seven separate reports depicting the importance of quality in the ambulatory practice sitting on my desk. The reports are from entities such as RAND Health- Payment Reform: Analysis of Models and Performance Measurement Implications, Medical Group Management Association- The Medical Practice of the Future, International Healthcare Certification System: Physician Clinic Quality Management System Requirements, HealthCare.gov – Implementation Center Report to Congress: National Strategy for Quality Improvement in Health Care, CMS Special Project: Development of Physician Office Quality Measures, Institute for Healthcare Improvement- Delivering High Quality Care for Less. The singular common theme in these reports is that quality improvement, in performance and measurement will be required, expected, and a cornerstone of healthcare in the Ambulatory setting in the very near future. It is my sincere hope that through developing and providing this manual, the education sessions and measurement requirement that your practice will master the core element of the quality process and be well prepared for the coming changes in healthcare for the future.
About the Author

Margaret has worked in the risk management field for the past 25 years. Her passion is teaching risk reduction and patient safety in the ambulatory care setting. She is active in the risk management professional organizations at both the state and national level. She is a Fellow graduate of the National Patient Safety Leadership Fellowship program. Her next adventure will be to obtain the Chartered Property Casualty Underwriter designation.

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