

The Science of Improvement Improving the Improvement

Samer Ellahham, MD,CPHQ, FACMQ, EFQM,FAHA,FACC,FACP
International Representative, AHA Hospital Accreditation Science Committee
Middle East Regional Chair, Patient Safety Movement
Certified Master Black Belt Six Sigma
Certified Lean Healthcare Practitioner
Cardiology Consultant
Heart and Vascular Institute
Cleveland Clinic Abu Dhabi
Cleveland Clinic Caregiver

1



2



3

Disclosure

- Nothing to disclose

4



5



6

Who Are We?

- Create **FREE** resources for hospitals and patients
- Our solutions, APSS, are in **4710 hospitals in 46 countries**

7



A Commitment-based Approach

- A fresh approach to old problems, without reinventing the wheel
- We strive to foster new efforts and build on existing patient safety programs through Commitments to ZERO

8

Learning Objectives

1. Identify poor quality and or medical errors.
2. Introduce the concept of Quality Improvement Science.
3. Discuss the basic steps to do a successful QI project.
4. Explain the role of teams.
5. Explain the different QI methods.

9

The Science of Quality Improvement: Improving the Improvement

Samer Ellahham, MD

Cleveland Clinic, Cleveland, USA and Cleveland Clinic Abu Dhabi, UAE

Keywords	Quality improvement science, quality in healthcare, quality improvement initiatives in healthcare, quality of care
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10

The IOM (2013) defines healthcare quality as

the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge”

11

Medical errors are the third leading cause of death in the U.S., after heart disease and cancer, causing at least 250,000 deaths every year

12

abcNEWS.com Original Report



'Advanced But Not Reliable'

Study: Americans Get Only Half the Care They Need

By John McKenzie
abcNEWS

June 25 — Americans are getting only about half of the proper care they should be getting, regardless of their insurance coverage, according to one of the largest and most comprehensive studies done on the quality of American health.

Watch this video

A study found that quality of care varied considerably according to the medical condition. (PhotoDisc)

13

DEAD BY Mistake

Common errors Get safer care Demand change Share your stories Blog Contact us About

Within health care hides massive, avoidable death toll



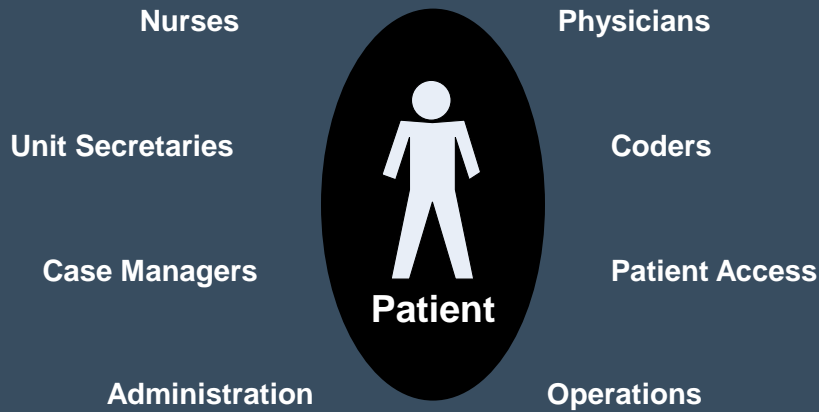
Every year approximately 200,000 Americans die from preventable medical errors and healthcare-associated infections as tools to fight these needless deaths go unused at many hospitals.

Health care bills sidestep medical errors issue
Obama won't back reporting, though errors serious problem
Calls for medical error reporting reforms heard across country
 Hospitals urged to strictly enforce hand-washing
Be a safer patient
Voice your concerns
Conn. officials demand reporting reform, but not governor

HEARST newspapers

14

Complex Environment



15

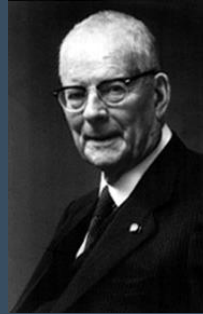
Persons and Families wishes

1. Keep Safe
2. Heal me
3. Be kind to me
4. Engage Me

16

85% of the reasons for failure to meet customer expectations are related to deficiencies in systems and processes... rather than the employee."

- Dr. W. Edwards Deming

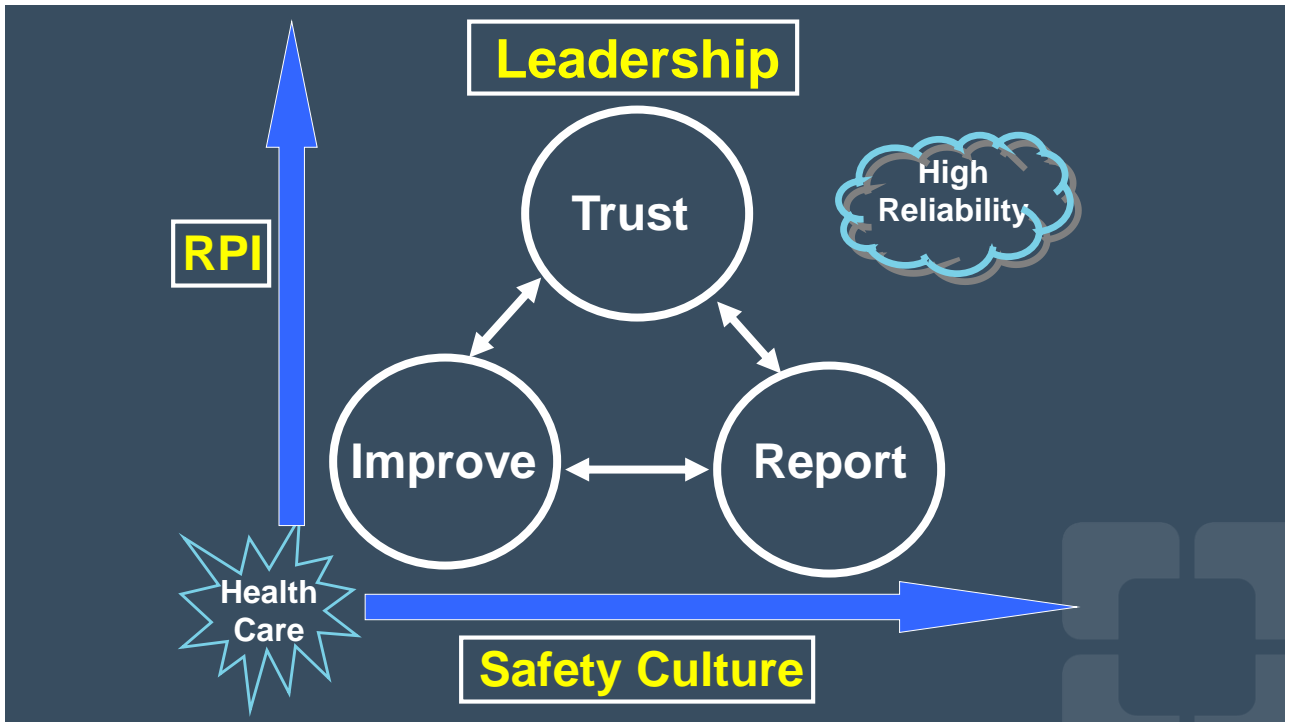


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It is not just about the process- it is about the people



18



19

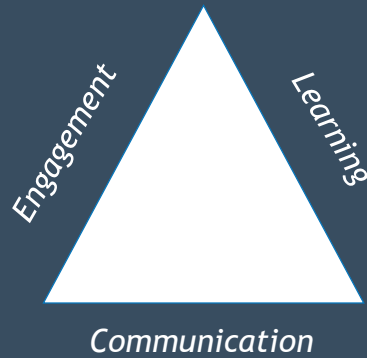
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Robust Process Improvement

- Lean
 - Eliminate waste
- Six Sigma
 - Reduce defaults
- Change Management
 - Key component: WIIFM

20

THE VALUE ADDED BY KPIs



21

THE VALUE ADDED BY KPIs

CLARITY	<ul style="list-style-type: none"> • Provide a detailed numerical view of which are the desired results aimed to be achieved • Facilitate line of sight by mapping contribution to success across organisational levels
FOCUS	<ul style="list-style-type: none"> • Convey what matters • Convey what requires attention
IMPROVEMENT	<ul style="list-style-type: none"> • Objectively evaluate the level of achievement of desired results • Readily available data which accelerates corrective action initiation
ENGAGEMENT	<ul style="list-style-type: none"> • Lead to a sense of ownership through responsibility and accountability • Motivate in achieving better results • Contribute to building a performance culture
COMMUNICATION	<ul style="list-style-type: none"> • Provide common understanding of the numbers that matter • Enables precise stakeholder communication • Demonstrate interest and ability to use state of the art management concepts
LEARNING	<ul style="list-style-type: none"> • Enable comparison of results in time, to reflect trends • Identify opportunities by comparing to others • Lead to a better understanding of the business

22

Team

23

#1. Give the team great purpose.

24

Setting Goals

- SMART goals:
Specific Measurable Attainable
Relevant Time-bound
- Relevant = tie to primary strategic objectives

25

Examples of Goals

- Reduce infections
- Reduce surgical infections within colorectal population by 20% within six months

26

#2. State clear goals.

27

Team Structure



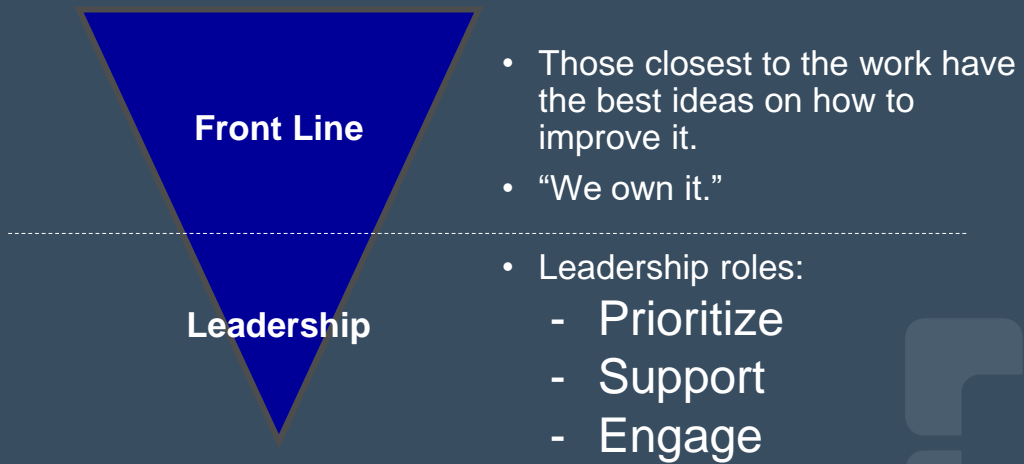
28

Team Structure



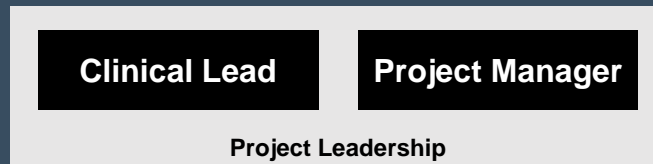
29

Servant Leadership



30

Team Structure



- Clinical lead – expertise and buy-in
- Project manager – structure and organization

31

Clinical Lead

- Dedicated time
- Passion and commitment
- Credibility in the organization
- Effective communicator and champion

32

Team Size

- No absolute rule
- Too small – hard to get work done
- Too large – hard to agree on what work to get done
- Typical range = 5 to 15 team members

33

#3. Empower the front line to act.

34

Accountability

Executive sponsors...

- State clear, important objectives
- Support teams in doing the work
- Hold teams accountable to results

35

Accountability

Project leadership...

- Define and articulate project needs
- Engage sponsors
- Develop, execute project plans
- Control project changes, manage risks
- Transition projects for sustainment

36

Accountability

Team members...

- Fully participate
- Open to new ideas
- Bring expertise

37

Project Reviews

- Team meetings
 - Team members, project leads
 - Make decisions, drive progress
- Sponsor meetings
 - Project leads, sponsors, stakeholders
 - Review progress vs. goals
 - Celebrate successes
 - Address gaps

38

Communication Meetings

- May be needed to inform organization of project, activities, progress
- Larger audience
- Not for decisions

39

#4. Hold teams accountable for results.

40

Developing Effective Teams

1. Give the team great purpose
2. State clear goals
3. Empower the front line to act
4. Hold teams accountable for results

41



42

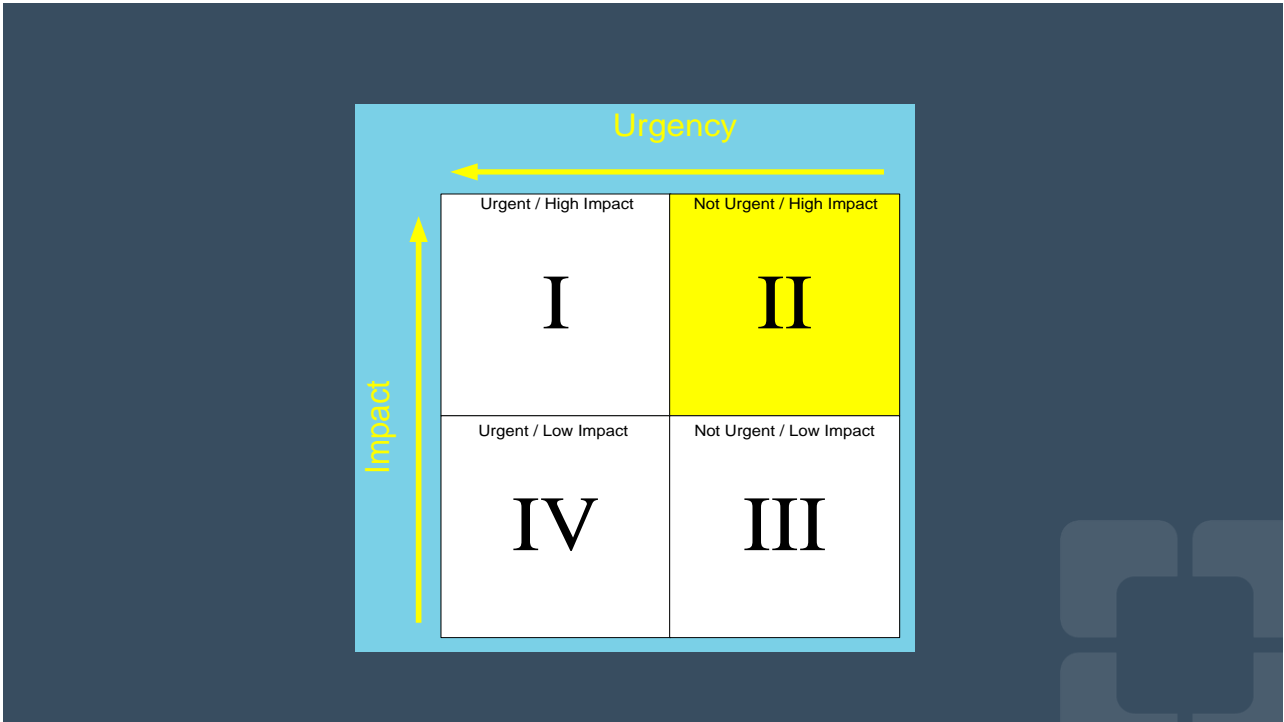
Tools

43

The Clinical Value Compass

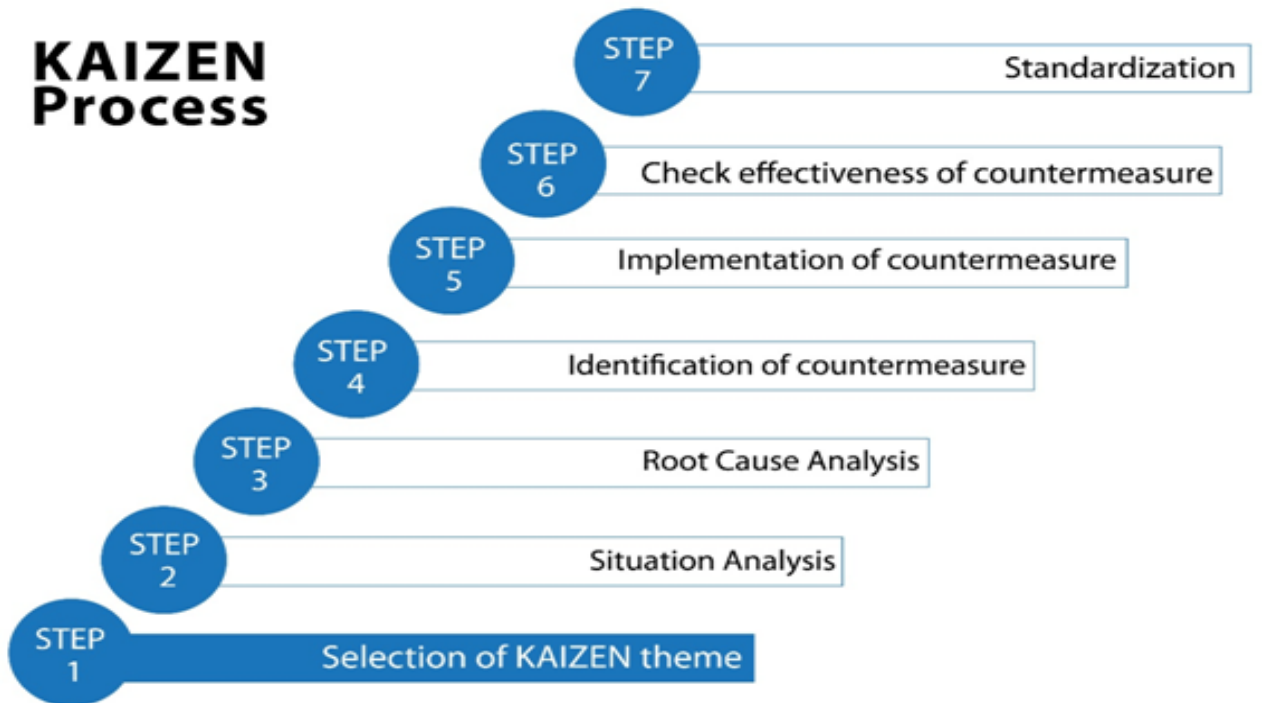


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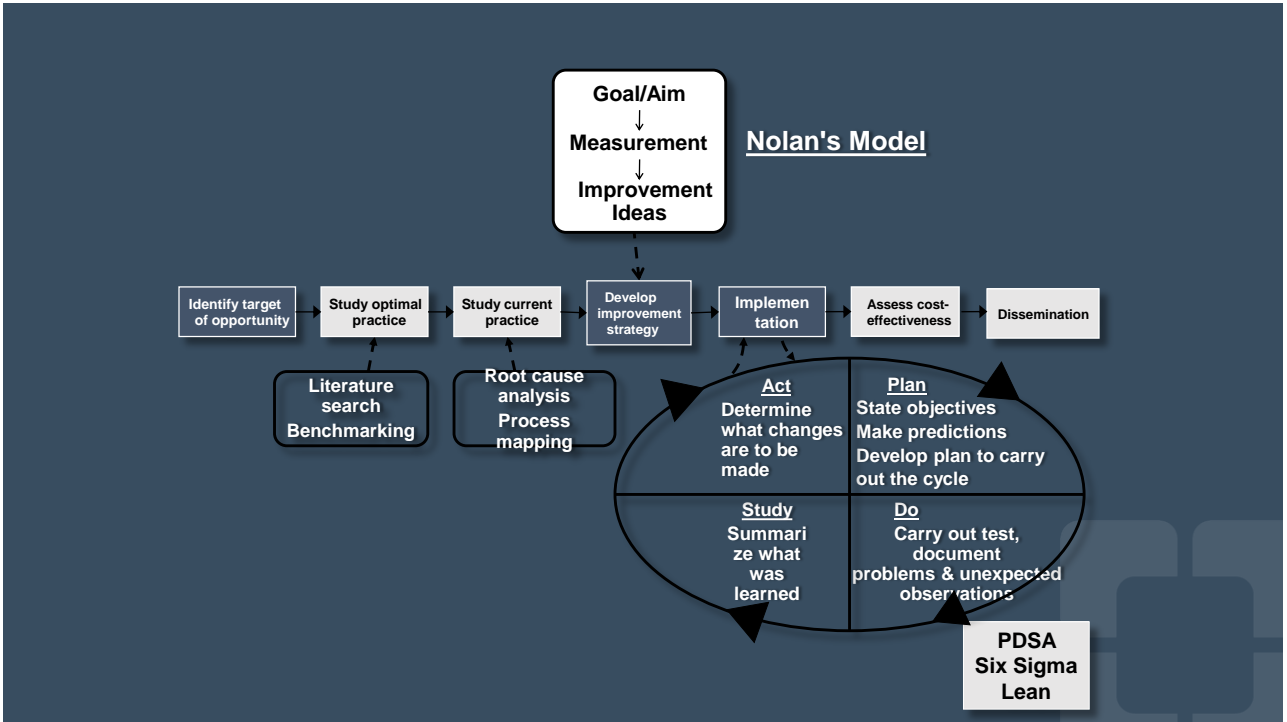


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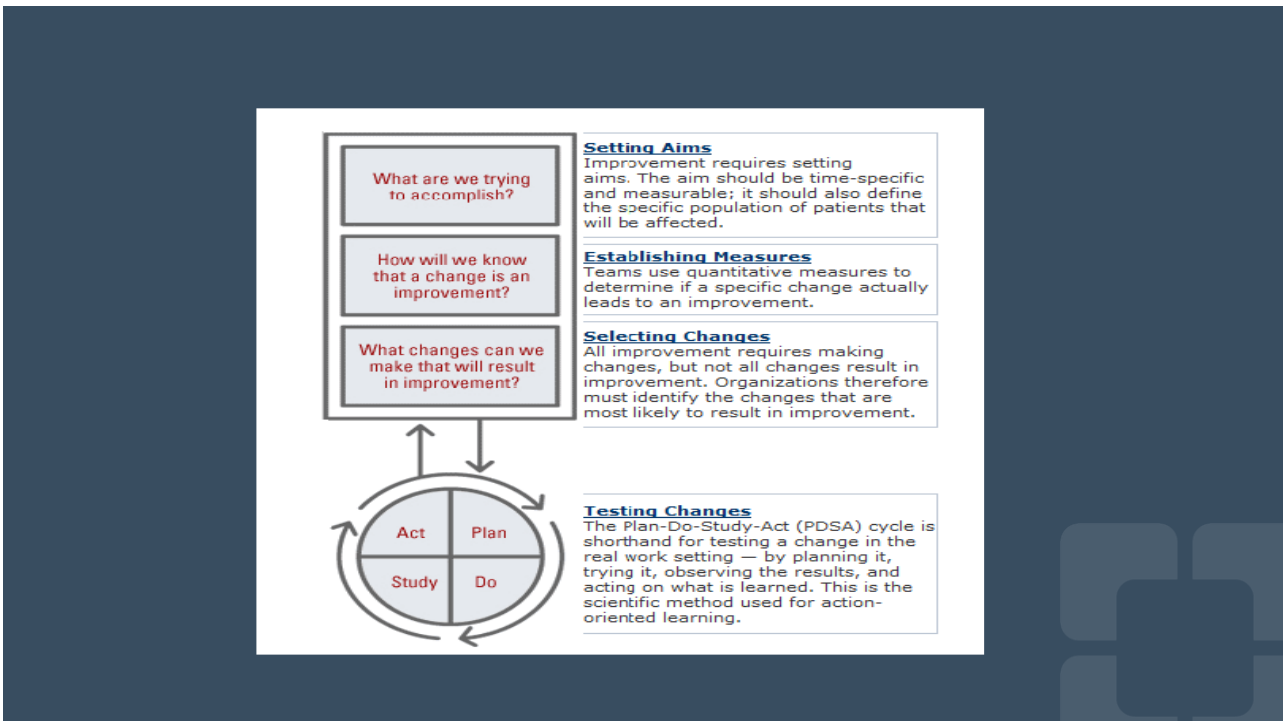
KAIZEN Process



46

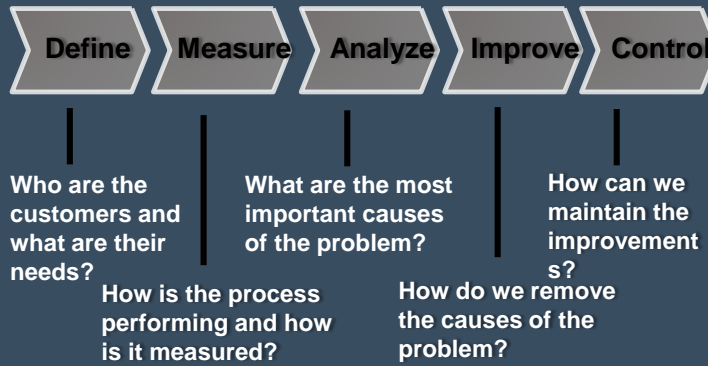


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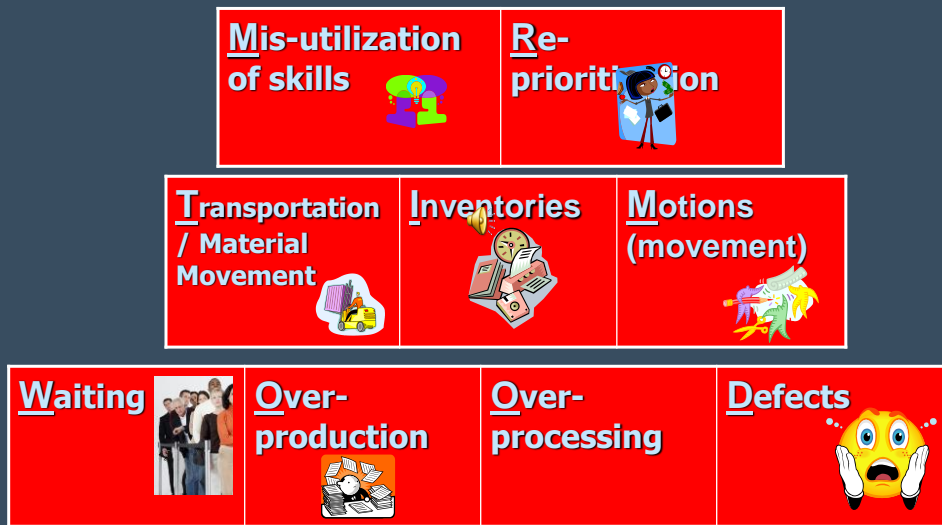
48

DMAIC Framework



49

Types of Waste – Mr. TIM WOOD



50

	PDSA	Six Sigma	Lean
Process Steps	Plan; Do; Study; Act	Design, Measure, Analyze, Improve, Control	Eliminate non-value added steps
Improvement Focus	Rapid cycles	Eliminate defects	Efficiency
Ideal Use	Target project; limited time / resources	Bigger project; resources & time available	Process efficiency; clear boundaries
Supports / tools	Prototyping	Analytical tools, expertise	Value Stream maps, Kaizen events

51

Downloaded from <http://qir.bmj.com/> on October 21, 2016 - Published by group.bmj.com

BMJ Quality Improvement Reports

BMJ Quality Improvement Reports 2015; u207849.w3309 doi: 10.1136/bmjquality.u207849.w3309

Reducing Door to- Balloon- Time for Acute ST Elevation Myocardial Infarction In Primary Percutaneous Intervention: Transformation using Robust Performance Improvement

Samer Ellahham, MD, Samir Aljabbari, Tristan Harold Mananghaya, Salama J. Raji, Abdulmajeed Al Zubaidi
SKMC

Abstract

Cardiovascular diseases (CVDs) are the leading causes of death in the UAE. Prompt reperfusion access is essential for patients who have Myocardial Infarction (MI) with ST-segment elevation as they are at a relatively high risk of death. This risk may be reduced by primary

52



Literature Review

 — AMERICAN COLLEGE OF —
MedicalQuality

Application of Artificial Intelligence in the Health Care Safety Context: Opportunities and Challenges

American Journal of Medical Quality
1–8

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Samer Ellahham, MD^{1,2} , Nour Ellahham¹,
and Mecit Can Emre Simsekler, PhD³ 

53



Journal of Computer Science & Systems Biology

 Ellahham and Ellahham, J Comput Sci Syst Biol
 2019, 12:3

Research Article

Open Access

Use of Artificial Intelligence for Improving Patient Flow and Healthcare Delivery

Samer Ellahham^{*} and Nour Ellahham

Cleveland Clinic Abu Dhabi and Cleveland Clinic Foundation, Abu Dhabi, UAE

^{*}**Corresponding author:** Samer Ellahham, Cleveland Clinic Abu Dhabi and Cleveland Clinic Foundation, Abu Dhabi, UAE, Tel: +971508113142; E-mail: ellahas@clevelandclinicabudhabi.ae, samerellahham@yahoo.com

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54

Open access

Research

BMJ Open Impact of repeated hospital accreditation surveys on quality and reliability, an 8-year interrupted time series analysis

Subashnie Devkaran,¹ Patrick N O'Farrell,² Samer Ellahham,³ Randy Arcangel⁴

To cite: Devkaran S, O'Farrell PN, Ellahham S, *et al.* Impact of repeated

ABSTRACT

Objective To evaluate whether hospital re-accreditation improves quality, patient safety and reliability over three

Strengths and limitations of this study

BMJ Open: first published as 10.1136/bmjopen-2018-021111 on 19 November 2019.

55

Take home messages

- QIS is undergoing a rapid technological and functional growth to meet the ever-increasing demand of providing quality and safe healthcare.
- There is an urgent need to sensitize and train organizations and healthcare providers about the various aspects of QIS.
- QI needs to be a continuous and sustained process.
- QI needs constant monitoring and change to bring out the best outcomes.

56

Take home messages

- Various healthcare stakeholders need to be integrated under a single QI platform to facilitate exchange of expertise, ideas and technology.
- QI facilitators are a new upcoming field that needs to be integrated into the organizational organogram to facilitate QI training and oversee the identification and implementation of a QI process.
- QIS will play a major role in improving healthcare delivery in the coming time.

57

History of Medicine

MEDICAL RECORDS, PATIENT OUTCOME, AND PEER REVIEW IN ELEVENTH-CENTURY ARAB MEDICINE

Kamel M. Ajlouni, MD, FACP; Usama Al-Khalidi, PhD

The practice of medical record-keeping dates back to the fifth century BC, when medical practice was dominated by Hippocrates and his followers. In the Hippocratic literature, medical records were used to demonstrate the cause and course of a disease. It was not until the 20th century that clinical records were routinely used as a tool to assess the quality of medical care, to educate physicians, and to evaluate the outcome of therapy^{1,2} and management. Because of the increasing significance of medicolegal issues and their implications, the medical record has become an important means of evaluating the quality and outcome of patient care and of identifying errors and deficiencies in patient management with the subsequent legal responsibilities.^{1,2}

It has been generally assumed that the clinical record was not used as a legal and educational tool before the middle of the 19th century, with most physicians relying on memory for the details of patient history and treatment and later describing them anecdotally. The authors became interested in the history of informed medical consent and medical record-keeping for legal purposes after finding a document of legal medical consent dating back to November 10, 1677.³

The purpose of this article is to report some new information about medical record-keeping, outcome of care, and peer review in 11th-century (505-590; Hijra calendar) Arab medicine. Quality control was an important part of medical practice in that period, and detailed lists of requirements and conditions were therefore applied to the practice of medicine, such as compulsory examinations, delivery of the Hippocratic oath in public, mastery of anatomy, and familiarity with medicinal preparations and their uses.⁴

From the National Center for Diabetes, Endocrine and Inherited Diseases, Amman.
Address reprint requests and correspondence to Dr. Ajlouni, President of National Center for Diabetes, Endocrine and Inherited Diseases, PO Box 13165, Amman, Jordan.
Accepted for publication 2 September 1996. Received 8 June 1996.

326 *Annals of Saudi Medicine, Vol 17, No 3, 1997*

The System, the Book, and the Author

The system of Hisbah (quality control) was highly developed in the Arab world, during the 8th and 9th centuries. It involved quality control of everything in the marketplace, including scales, weights, produce, and services.

A handbook for the Muhtasib (quality controller with the powers of a judge) was written in the 11th century by Al-Shaizari (died Cina 1094).⁵ Several manuscripts of this book were copied in the 12th and 13th centuries, edited and published by Al-Baz Al-Arini in Cairo in 1946, and reprinted in Beirut in 1981.

The system of Hisbah was first brought to the attention of the Western world in 1860 by Walter Behrnauer.^{6,7} The following is a translation of Chapter 37 of Al-Shaizari's book.

On Supervision (Hisbah) over Physicians, Oculists, Orthopedists and Surgeons

Medicine is a theoretical and practical science which Shar'ia (Muslim Law) has permitted to be learned and practiced because of its (medicine's) ability to preserve health and ward off maladies and diseases from this honored human body.

A physician is a person who knows the body's structure; the temperament of organs; the diseases that afflict them; the causes; symptoms and signs of such diseases; the medicines useful therefore; substitutes for these medicines in case they are not available; methods of their preparation; and ways of their action so that he may keep a balance between disease and the quantity of medicines and differentiate the qualities among medicines. He who is not qualified to do that is not entitled to treat sick people or embark upon a risky medical treatment; nor should he deal with what he does not master of the above.

It is said that their practice of appointing a physician in every city who was famed for his competence in medicine and then make him examine the other medical doctors in the city was started by the Greek kings. Those whom he found not to be up to the standard were ordered to dedicate

58

**HIGH
RELIABILITY**

LISTEN
to each other

LEARN
from each other

LEAD
together



59

- Getting to Zero Harm

60

**Quality is a Journey,
not a Destination**



61



Cleveland Clinic

Every life deserves world class care.

62



Brought to you by Mubadala

63

Contact

Dr Samer Ellahham

ellahas@clevelandclinicabudhabi.ae

samerellahham@gmail.com

samerellahham@yahoo.com

971508113142

64

