Overview of Quality Improvement and Patient Safety - a Guide for Internists

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Objectives

1. Identify the importance of QI and Ps for internists
2. Define the main tools for implementing QI and PS
3. Apply QI and PS to the day-to-day work of both ambulatory and hospital physicians
Disclosures

We have no relevant financial relationships to disclose. We do not intend to discuss off-label/investigative use of a commercial/product/device.
Overview of Patient Safety- a Guide for Internists

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**Patient safety** is the absence of preventable harm to a patient during the process of health care.
“Close calls” or “near misses”

IHI: Errors that didn’t cause harm.

Close calls are wake up calls

History of the Patient Safety Movement

"first, do no harm."

“to abstain from doing harm”

Hippocratic Oath

History of the Patient Safety Movement

Crossing the Quality Chasm: A New Health System for the 21st Century

Institute of Medicine (US) Committee on Quality of Health Care in America


PMID: 25057539   Bookshelf ID: NBK222274   DOI: 10.17226/10027

Responding to Errors

“Anyway, to make a long story short, the medical examiner who performed your autopsy was fired.”
The Tenerife airport disaster on 27 March 1977 was the collision of two Boeing aircraft on the runway of Los Rodeos Airport in Tenerife, Spain; killing 583 people.
Dr Hadiza Bawa-Garba Case

- She was found guilty of manslaughter by gross negligence

Jha, Saurabh "To Err Is Homicide in Britain: The Case of Dr Hadiza Bawa-Garba". Medscape February 2018.
A Tale of Two Stories: Contrasting Views of Patient Safety

Report from a Workshop on Assembling the Scientific Basis for Progress on Patient Safety

National Health Care Safety Council of the National Patient Safety Foundation at the AMA

Cook, Woods & Miller, 1998
Swiss cheese model
By James Reason’s

Reason’s Swiss cheese model: https://www.youtube.com/watch?v=KND5py-z8yI
Back to the Tenerife Disaster

- Heavy fog on the airport's only runway
- Communication difficulties with Air Traffic Control
- Accents, and non-standard phraseology
Back to Dr Hadiza Bawa-Garba case

- Delayed lab results
- Lack of Radiology direct reporting of critical finding
- Lack of appropriate supervision
- Hospital policy allowed parents to give their own medicine
- Hospital understaffing

Gayle, Damien; Boseley, Sarah (13 August 2018). "Dr Hadiza Bawa-Garba wins appeal against being struck off". The Guardian
Patient Safety

- Punitive Culture
- Just Culture
- Blame Free Culture

Individual Behavior
Individual Responsibility
System Design Flaws
System Failures
Patient Safety Tools
Patient Safety Tools

Cause and Effect Diagram

Patient Factors
- Complexity of the condition
- Communication with patient

Individual Factors
- System-based Knowledge
- Memory slips

Team Factors
- Communication
- Handoff

Environmental Factors
- Shift patterns causing lost patient ownership

System Factors
- Policy for ECG and troponin
- ED standards, Safety culture

Delayed Cardiac intervention for STEMI.
Patient Safety Tools
5 Whys: Finding the Root Cause of a Problem

1. **Why** did you come late?
   – Because it ran out of gas.

2. **Why** did it run out of gas?
   – Because I didn’t buy any gas on my way to work.

3. **Why** didn’t you buy any gas this morning?
   - Because I woke up late and didn’t have time

4. **Why** did you wake up late?
   - Because I turned off my alarm instead of snoozing, and fell asleep again

5. **Why** did you turn it off instead of snoozing?
   - Because it is a new phone, and I don’t know how to use it yet
### Patient Safety Tools

**Root Cause Analyses and Actions, or RCA2**

<table>
<thead>
<tr>
<th>Action category</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stronger Actions</strong></td>
<td></td>
</tr>
<tr>
<td>▪ New devise</td>
<td>Medication pumps</td>
</tr>
<tr>
<td>▪ Simplify process</td>
<td></td>
</tr>
<tr>
<td>▪ Standardize equipment</td>
<td></td>
</tr>
<tr>
<td><strong>Intermediate Actions</strong></td>
<td></td>
</tr>
<tr>
<td>▪ Increase staff</td>
<td>Float staff</td>
</tr>
<tr>
<td>▪ Software modification</td>
<td>Interaction alerts</td>
</tr>
<tr>
<td>▪ Eliminate distractors</td>
<td>Patient handoffs</td>
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<tr>
<td>▪ Standard communication</td>
<td>Read-back for critical labs</td>
</tr>
<tr>
<td><strong>Weaker Actions</strong></td>
<td></td>
</tr>
<tr>
<td>▪ Training</td>
<td>Simulation, workshops</td>
</tr>
<tr>
<td>▪ Double check</td>
<td>Multiple checkpoint personnel</td>
</tr>
<tr>
<td>▪ New policy</td>
<td></td>
</tr>
</tbody>
</table>

Template: Huddles

Print this huddle agenda and post it on your visual management board as a reminder to the huddle team.

1) Safety and quality concerns and successes in the past day
   - Patients
   - Staff
   - Physicians

2) Safety and quality issues for patients on today’s schedule

3) Review of tracked issues

4) Inputs on other safety and quality issues

5) Announcements and information to share
Overview of Quality Improvement- a Guide for Internists

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Quality Improvement and Patient Safety

• Anything that happens in a healthcare organization can affect patient safety.
• Systems drive operations in a healthcare organizations.
  • Systems created by humans have risk to fail.
• We need organized ways to monitor for safety and make improvements.
• Look to other industries and their models for improvement.
Quality Improvement

• As much as everyone is responsible for patient safety, everyone has a responsibility to improve the quality of care.

• Education value for trainees (ACGME Core Program Requirement)

• Enrich our practice (earn ABIM MOC)

1. Site: https://www.acgme.org/Portals/0/PFAstets/ProgramRequirements/CPRResidency2021.pdf
Quality Improvement

Quality Improvement relies on basic principles, for which there are many ways to approach:

1. Understand the problem
2. Understand why it is occurring
3. Make a change
4. Understand if the change leads to improvement
Lean

• Set of principles/tools used in manufacturing that have traveled through time and made most famous by the Toyota Motor Company.

• Eliminate *wasteful* steps while maintaining quality which translates into controlled cost.

• Kaizen – concept of continuous improvement through small changes all the time. Simple to implement and lead in immediate results.

1. Lean production in the lean lexicon. Site: https://www.lean.org/lexicon/lean-production
• Developed by engineers at Motorola, aimed at reducing defects in production to six standard deviations from the mean.

• Guided by DMAIC:
  • Define
  • Measure
  • Analyze
  • Improve
  • Control

1. Site: https://www.purdue.edu/leansixsigmaonline/blog/six-sigma-vs-lean-six-sigma/
2. Site: https://www.quality.org/knowledge/origins-lean-six-sigma
Model for Improvement

• Developed by the Institute for Healthcare Improvement in 1995.

Tools, Tools, Tools

• When to use what tool?
  • Tools that track results and data over time may be useful in all stages
  • Certain tools are more useful at certain parts of the project

• It is important to understand various frameworks and how they structure the use of particular tools.
  • But equally as important to understand each individual tool in it’s own right.
Quality Improvement

1. Identify and Understand the Problem
   A. And the problem within the problem
   B. Set a goal
2. Plan an intervention
3. Test the intervention
4. Review the results of test
5. Revise the intervention
6. Test again
7. Once successful, implement intervention on larger scale
Identify and Understand the Problem

• Gemba Walk
  • Gemba – a Japanese term meaning ‘the actual place’
  • Walk and observe the actual process, study each step, study who participates in the process, speak with participants about their role in the process.
    • Even (or especially) for process that you are familiar with
    • May be done in several contexts – ED triage Gemba
    • Help you understand the physical and metaphorical steps in the process.
    • Meet important stakeholders

Identify and Understand the Problem

• Process Map – show the steps in a process

An oval denotes points where inputs enter or outputs exit.

Rectangles denote a process (action) step.

A diamond denotes a decision.

Arrows show the direction or flow of the process.

1. Site: https://www.cedu.niu.edu/~bailey/ftf564/pmapping.pdf
Identify and Understand the Problem

• Pareto Chart
  • Pareto 80/20 Rule
  • Helps understand the frequency of a problem to identify which has the most impact and should be intervened on.

1. Site: https://ccts.osu.edu/sites/default/files/inline-files/Pareto%20chart%20Instructions.pdf
Set a Goal

• **Specific**: Appropriately focused
• **Measurable**: Has a possibility of being measured
• **Achievable**: Ensure goal is realistic
• **Relevant**: Is relevant to context of the problem
• **Timed**: Have a timeline/end date

Plan an Intervention

Based on what was learned from the test:

- **Adjust** - modify approach and repeat the cycle.
- **Adopt** - consider expanding changes to additional workers, teams, or agencies.
- **Abandon** - re-investigate cause of problem, change your approach and repeat the cycle.

**Act**

- Study and analyze the data.
- Determine if the change resulted in the expected outcome (compare to goal).
- Were there implementation lessons?
- Summarize what was learned; look for unintended consequences, surprises, successes, failures.

**Plan**

- What change(s) are you testing with the PDSA cycle(s)?
- What did you predict will happen and why?
- Who will be involved in this PDSA?
- What specifically will they do?
- What resources will they need?
- When will the change be done?
- How long will the change take to implement?
- What data needs to be collected?
- How often? By whom?

**Study**

- Carry out test on a small scale.
- Document observations, including any implementation problems and unexpected findings.
- Collect data you identified as needed during the "plan" stage.

**Do**

Site: https://media.wcwds.wisc.edu/PDSA%20Online%20Toolkit/What%20is%20the%20PDSA%20Model/PDSA_Primer.pdf
Measures

• Outcome
• Process
• Balancing
**Review the Results**

- **Run Charts**
  - Demonstrate change in outcome measure over time.

Implement Intervention on Larger Scale

1. Site: https://hr.berkeley.edu/sites/default/files/change_management_toolkit.pdf
Value of QI

• Improves work environment
• Improves quality of care
• Creates opportunities to produce scholarly work