

Quality Management In Healthcare. Performance Improvement

Quality Quotes: „If you can't describe what you are doing as a process, you don't know what you're doing.” (W.Edwards Deming)

“Quality is never an accident; it is always the result of high intention, sincere effort, intelligent direction and skillful execution; it represents the wise choice of many alternatives.” (William A. Foster)

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Abstract: *Quality in healthcare means doing what is right for the right people exactly at the right time and doing it always in a friendly and highly professional manner. Whenever unfavorable experience has been detected –meaning a gap between expected and actual performance – a set of key questions must be answered: where, when, and why problems occurred. Once the questions answered, changes must be made. Improvement projects should be systematic and not intuitive, including a methodical performance improvement process. In the following lines we present an efficient healthcare improvement performance model, namely “FOCUS-PDCA”. Another tool for improving health performance is the „Medical-specific checklist”. It has an important contribution to improving health performance through standardizing the list of steps to be followed, as well as establishing the legitimate expectation that each of these steps will be followed accordingly for all patients.*

Keywords: quality management; performance improvement; methodical process; “FOCUS-PDCA”; Medical-specific checklist.

JEL Classification: I10, I12, I15, M16, M21, O20, O21

1. Introduction

Quality management in international healthcare should be patient oriented: patients' needs, requirements and expectations have to be recognised and fulfilled. Quality in health is doing the right things for the right people at the right time, and doing them right first time and every time.¹ Quality may include from the technical quality of care, to nontechnical details of service delivery: staff's attitudes (e.g. the nurse should have a friendly approach), clients' waiting time (e.g. the patient should not wait for several hours if he/she is an emergency patient).

Performance improvement could be defined as the last phase of quality management. As soon as an unfavorable performance has been detected, immediate measures have to be taken in order to identify and fix the cause. When specialists come to the conclusion that there is a gap between expected and actual performance, a team is formed in order to solve this problem. All team members must understand very well the process aimed to be improved. No changes should be made until all factors affecting performance have been well examined. There are three key questions that must be answered: where, when, and why problems occur. Once these questions are answered, a set of changes are being made in order to achieve a positive result. After a given period of time, an analysis is made: where the improvement measures effective or not? Afterwards a decision has to be made.

There are two major factors that influence the decision to start an improvement project. These are the following: the result of the performance analysis and the

¹ <https://worldwidescience.org/topicpages/q/quality+management+concepts.html>

improvement priorities. It is strongly recommended that improvement projects should be very systematic, including a methodical performance improvement process. Unfortunately, most quality improvement management interventions are currently designed intuitively and their results are poor. A methodology of systematically designing quality of care improvement interventions is strongly needed. That includes problem analysis, intervention design and pretests.²

The goals have to be very well set, keeping in mind that: a) preventing problems from happening again should be the task and not just diminishing the consequences; b) performance problems cause additional work for diminishing the negative consequences; this means that workers become overloaded, tensed and less concentrated to their work, which cause a vicious circle; c) a systematic performance improvement process leads to a better communication among employees and their managers, since they must cooperate to achieve the purpose; consequently, the goal can be achieved only through an efficient and permanent communication process.

In order to achieve the highest efficiency possible, specialists develop different performance improvement models. These are suitable to be used in different industries, including healthcare. Even if there are differences among the models, most of them recommend some mandatory steps to be noticed: 1) it is important to draw a very concise definition of the improvement task and to focus on that definition; 2) An attentive analysis

² "Designing a quality improvement intervention: a systematic approach", M. A. van Bokhoven, G. Kok, T. van der Weijden

<http://qualitysafety.bmj.com/content/12/3/215.full.pdf>

of the current practices has to be made; 3) Establishing a systematic plan of measures for improving performance; 4) Implementing the plan in a professional manner; 5) After a given period, measurement of achievement goals has to be made.

As the question is the essence of knowledge, only intelligent questions provide good answers. As a consequence, the team has to develop a set of smart simple questions which have to be answered as accurate as possible during the improvement process.

In the following lines we present some interesting features of a model often used for healthcare improvement performance.

2.FOCUS-PDCA

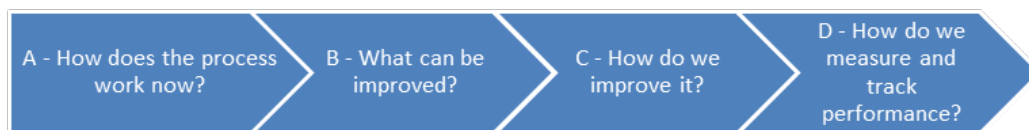
This method is efficient and easy to understand. In healthcare system, the main goal is to eliminate waste and to improve the efficiency by simplifying or eliminating unnecessary steps, using modernizing techniques,

or taking other approaches. Like everywhere, the task is to deliver higher quality care at lower costs. The costs for drugs or medical equipments have to be the lowest possible, but the quality should remain the highest. Regarding the healthcare services, waste can be reduced by - e.g. permanently checking the expiry date of drugs – as they will be considered a waste if not used before they expire; reducing waiting times; reducing transport period of time; measures for reducing nosocomial infections³(infections acquired in the hospital) etc. The method was made popular by W. Edwards Deming⁴. It provides a simple plan to diminish as much as possible waste in service as well as in production processes. This method emphasizes that people in charge have to know and understand the entire process.

For example:

³ <https://www.healthline.com/health/hospital-acquired-nosocomial-infections>

⁴ <https://www.bl.uk/people/w-edwards-deming>



This management method is a systematic process improvement method. The knowledge of how the process is performing is used to develop and test different process changes. The ultimate goal of the changes is

to meet better customer needs as well as their expectations.

This acronym –FOCUS which precedes the PDCA - stands for a five part plan:

F:	Find a process to improve
O:	Organize a team that knows the process
C:	Clarify current knowledge of the process
U:	Understand the source of process variation
S:	Select a plan for the process improvement

The task is to develop and select solutions after identifying the area needing improvement. PDCA is the acronym for: Plan, Do, Check, Act. It is responsible for identifying what needs to be done to implement the chosen solutions. PDCA is also responsible for implementing the needed changes. After a period of time an analysis has to be done in order to understand whether the goal has been achieved or not.

Example of process improvement using FOCUS PDCA:

FOCUS

⊙ First we find a process which we think it is important to improve: e.g. the discharge process for hospitalized acute kidney failure patients.

⊙ We form a team of specialists who know very well the process: Could include the Chief of Nephrology, nephrology nurse and administration staff.

⊙ It is important to clarify current

knowledge: The team meets to create a process model or a process flow diagram. It will show who and what is involved in a process and is of most value as it could reveal the area where the process should be improved. Process model is of high value as it allows to visually communicate the details of a given process rather than writing a great amount of information. Process maps save time. They provide efficient visual communication of ideas and show the entire process broken down into steps from the beginning to the end. A good process model allows the team to ask relevant questions and produces the necessary data which can be used in problem solving and in improving the process.

⊙ The process has to be well understood: The specialists measure the process as-is. The goal is to achieve relevant information. For example (i) what percentage of patients with acute kidney failure are readmitted to the hospital within 90 days from discharge?

© The team chooses what is needed to be improved: The specialists select the following: reducing the 90-day readmission rate.

PDCA

►Plan - Plan the change by studying the process, identifying areas needing improvement, and determining ways to measure success.⁵ The team selects a plan with a health program including lifestyle and home remedies. The patients are provided with it upon discharge. The plan includes a special diet to help support the kidneys in order to limit the work they must do. (e.g. avoiding products with added salt, choosing lower

potassium foods, limiting phosphorus)⁶

►Do - The specialists implement this change during a fixed time period. The change has to be made on small scale. Along this period data gathering is needed in order to measure success.

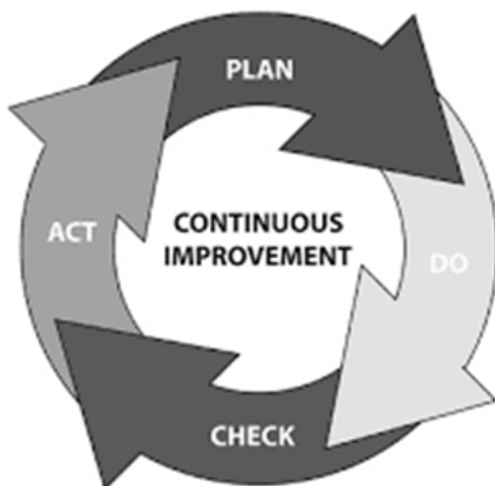
►Check – After the fixed time period the specialists check the results : whether or not the change produced the desired improvement.

►Act - Depending on the results: the team recommends this new program to be permanently implemented in the discharge process for hospitalized acute kidney failure patients. If the readmission rate did not reduce during the fixed time period, it is obvious that the plan was not the best. The ineffective change has to be abandoned.

The team should find another idea, respectively another plan, and run it through a new PDCA Cycle.

⁵ Patrice Spath, Introduction to Healthcare Management, p.111, , Health Administration Press, Chicago, Illinois AUPHA Press, Washington, DC <http://file.zums.ac.ir/ebook/391-Introduction%20to%20Healthcare%20Quality%20Management-Patrice%20Spath-1567933238-Health%20Administration%20.pdf>

⁶ <https://www.mayoclinic.org/diseases-conditions/kidney-failure/diagnosis-treatment/drc-20369053>



3. Medical-specific checklists

It is well known that checklists are being used in both medical and non-medical industries. These are aids to guide users through successful goal achievement. A checklist is a format that simplifies conceptualization and recall of information⁷, being effective in

⁷ Morrow DG, Leirer VO, Andrassy JM, Hier CM, Menard WE. The influence of list format and category headers on age differences in understanding medication instructions, *Exp. Aging Res*, 1998, vol. 24 (pg. 231-56)

performance improvement, in error prevention and management. The checklist should be a clear and simple reminder of a certain medical procedure. The goal is to break down complex tasks to their smallest component parts. Nothing has to be left out. In a way it is a standardization. Example of trauma resuscitation checklist :

Pre-arrival Plan	
Check or prepare:	
<input type="checkbox"/> Oxygen	
<input type="checkbox"/> Suction	
<input type="checkbox"/> Bag and mask	
<input type="checkbox"/> Intubation tray	
<input type="checkbox"/> Intubation medications	
<input type="checkbox"/> Defibrillator	
<input type="checkbox"/> CPR board	
<input type="checkbox"/> Consider ordering blood	
Assign team roles:	
<input type="checkbox"/> Airway	
<input type="checkbox"/> IV/IO access	
<input type="checkbox"/> Primary survey	
<input type="checkbox"/> Team leadership	
<input type="checkbox"/> Brief team on incoming patient	
<input type="checkbox"/> Estimate weight: _____ kg	

Primary Survey	
A	<input type="checkbox"/> Confirm C-spine is immobilized <input type="checkbox"/> Confirm airway is protected
B	<input type="checkbox"/> Place O ₂ mask or connect existing mask to O ₂
C	<input type="checkbox"/> Check pulses <input type="checkbox"/> Establish IV/IO access <input type="checkbox"/> Consider ordering blood
D	<input type="checkbox"/> State GCS (eyes, verbal, motor) <input type="checkbox"/> State pupil size and response
E	<input type="checkbox"/> Completely remove patient's clothing <input type="checkbox"/> Cover patient with warm blanket
RE-EVALUATE AIRWAY	<input type="checkbox"/> Evaluate need for intubation <input type="checkbox"/> Report ET tube size and depth (if applicable) <input type="checkbox"/> Confirm ETCO ₂ color change (if applicable)
MONITOR	<input type="checkbox"/> Confirm heart rate is displayed <input type="checkbox"/> Confirm pulse ox waveform is displayed
VITALS	State and evaluate whether WNL: <input type="checkbox"/> Heart rate <input type="checkbox"/> Respiratory rate <input type="checkbox"/> Blood pressure <input type="checkbox"/> Oxygen saturation <input type="checkbox"/> Temperature

Secondary Survey
Evaluate and state findings:
<input type="checkbox"/> Head
<input type="checkbox"/> Ears
<input type="checkbox"/> Eyes
<input type="checkbox"/> Facial bones
<input type="checkbox"/> Nose
<input type="checkbox"/> Mouth
<input type="checkbox"/> Neck/C-spine
<input type="checkbox"/> Chest
<input type="checkbox"/> Abdomen
<input type="checkbox"/> Pelvis
<input type="checkbox"/> Upper extremities
<input type="checkbox"/> Lower extremities
<input type="checkbox"/> Log roll and back exam

Plan of Care
Determine need for:
Laboratory tests <input type="checkbox"/> Yes <input type="checkbox"/> No
X-rays <input type="checkbox"/> Yes <input type="checkbox"/> No
CT scans <input type="checkbox"/> Yes <input type="checkbox"/> No
OR notification <input type="checkbox"/> Yes <input type="checkbox"/> No
PICU notification <input type="checkbox"/> Yes <input type="checkbox"/> No

Departure Plan
<input type="checkbox"/> State patient destination
Prepare patient for travel:
<input type="checkbox"/> Equipment
<input type="checkbox"/> Medications
<input type="checkbox"/> Identify who will travel with patient

However, it is of crucial importance to understand that checklist can not and should not replace the surgeon's/physician's decision. The medical professional has to evaluate each single case and make the decision for the most appropriate approach and for the most suitable treatment. Each single case must be considered individually and handled accordingly, because it has its unique features. The clinician should never be reluctant to change a planned treatment when the patient is not responding as expected or when there is new information which strongly suggests that another approach could be more effective.

A good checklist condenses large quantities of knowledge in a short, simple and clear fashion. Otherwise, clinicians may develop the so-called 'Checklist fatigue', which could prove to be a burden and not a helpful tool. Emergency situations (e.g. accidents) are very stressful both for victims (patients) but also for medical professionals. Especially in such situations a well designed checklist is of high value: it can reduce the frequency of errors of omission, create reliable and reproducible evaluations and improve quality standards and use of best practices.

Logical and functional order is a *conditio sine qua non*. It should reflect step-by-step the real-time clinician activities, as well as the patient's care routines.

The design is of highly importance: bold fonts, appropriate colours etc. should make the checklist easily readable and very understandable.

Even if providing healthcare services may be second nature to many experienced clinicians, professionals should always remember the high responsibility they carry towards each of their patients. Flight preparation in aviation is perhaps one of the most

well known examples for mandatory checklists. It is mandatory for pilots and air-traffic controllers to follow pre-takeoff checklists. It has no importance how many times they have already carried out that tasks. In healthcare we talk about a similar responsibility: so checklists prove to be essential.

4. Conclusion

Improvement projects should be systematic and not intuitive, including a methodical performance improvement process. As an example we presented an efficient healthcare improvement performance model, namely "FOCUS-PDCA". We have seen further that checklists represent another valuable tool for improving health performance. The Medical-specific checklist has an important contribution to improving health performance through standardizing the list of steps to be followed, as well as establishing the legitimate expectation that each of these steps will be followed accordingly for all patients. The checklist approach has the same potential to save lives and prevent errors in medicine that it did in aviation over 70 years ago by ensuring that simple standards are applied for every patient, every time. Checklists can decrease medical errors, especially during stressful circumstances. They are an efficient and elegant way to reduce risks and, thus, to improve healthcare performance.

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