Patient safety – an ongoing achievement through Healthcare Improvement Science (HIS)

Siguranța pacienților – o realizare permanentă, prin știința îmbunătățirii sistemului

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Abstract

Patient safety is an old but always actual concept that involves the management of all patients during healthcare in order to prevent medical errors and unintended harm. The need for improvement has been identified and quantified, but the implementation has suffered multiple aspects, starting with the concept of change and borrowing process modelling approach from industry. Healthcare Improvement Science is a new approach that addresses change from an academic point of view.
Keywords: ***patient safety, healthcare responsability, six-sigma, healthcare improvement science***

Rezumat

Siguranța pacienților este un concept mereu în actualitate care implică managementul complet al tuturor pacienților aflați în procesul de îngrijire medicală pentru a preveni erorile medicale și prejudicierea neintenționată. Nevoia de îmbunătățire a fost identificată și cuantificată mereu prin diferite metode, deseori fiind abordate nevoia de schimbare și managementul proceselor de îngrijire folosind un concept împrumutat din industrie. Știința îmbunătățirii sistemului sanitar este o abordare nouă, la nivel academic, a schimbării din sistemul sanitar.
Cuvinte-cheie: ***siguranța pacienților, responsabilitate medicală, six-sigma, știința îmbunătățirii sistemului sanitar***

The Patient Safety concept must be perceived as the responsibility of all healthcare professionals in their effort to do the right thing for their patients and to limit error. But living in these times of "defensive medicine", of the constant anxiety of being prosecuted for not following rigid concepts rather than diagnostic and treatment protocols, the doctors and nurses (and soon, all healthcare professionals in Romania) are struggling with the duplicity of being an "automated machinery" (*medicus apparatus*, as a visionary teacher from my faculty called us) and being human care-takers. But "to err is human", and the 1999 Institute of Medicine's Report showed that one in ten patients are unintentionally harmed in US hospitals[1]. More, in 2016 a *BMJ* article concluded that the unintended harm due to medical error is the third cause of death in the USA[2]. Quality care has been defined in many ways and has been approached ever since ancient philosophers such as Plato and Aristotle, but it was P. Harthelot who briefly summarized the concept: "an optimal balance between possibilities realized and a framework of norms and values"[3].

The current agreed definition of quality healthcare, according to the Institute of Medicine (IOM) is "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge"[4].

In 1966, a Lebanese physician who is considered the founder for the study of quality in healthcare and medical outcomes research, Avedis Donabedian, proposed the measuring of quality healthcare through structure, processes and outcomes. The structure may differ from country to country, different health systems with different health laws, health insurances etc., but the basic of healthcare must consist in a clear and accessible process of delivering the health services to people. Then, the outcome emerges naturally and can be easily benchmarked and measured using mortality, morbidity, patient satisfaction, general population healthcare status etc.

Figure 1. *William Deming*

But, of course, it was William Deming*, the American engineer that helped the Japanese industry emerge from the ashes of the World War II, whose ideas were borrowed in healthcare. The concept of healthcare quality management was built on Deming's three concepts: system thinking, defined processes and the change to create an environment for improvement. This concept states that an entire organization (such as a hospital, a ministry or a whole healthcare system) must be committed to quality and improvement in order to achieve best results. Based on the principle that there is an opportunity for improvement in every process and on every occasion, hospital quality assurance, besides complying with accreditation paperwork, studying credentialing processes and regulatory affairs, must focus on developing clinical practice. This approach must be led by clinicians who firstly attempt to comprehensively understand the complexity of healthcare delivery, form a team, establish a purpose, collect data, assess findings, and then translat those findings into practice changes[5].

* William Edwards Deming (October 14, 1900 – December 20, 1993)

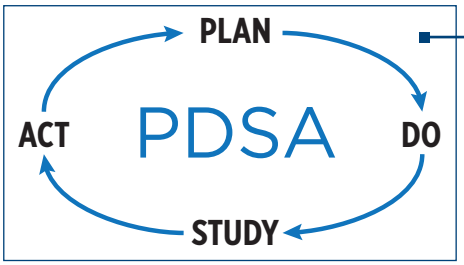

Figure 2. *The PDSA Cycle*

There are many tools for measuring quality and benchmark quality improvement, some of them are proved beneficial, others failed to satisfy the complexity of a healthcare system. But the most successfully applied techniques were the initiatives that focused on the system, not individuals.

The **root cause analysis** proved to be useful in improving communication of risk and assessing the causes that lead to a system failure (most frequently – the unintended patient harm). It is useful in assessing reported errors or incidents and in differentiating between active and latent errors in order to call for changes in policies and procedures.

The Toyota Production System (**Six Sigma**) is obviously borrowed from industry and is useful to detect major variations and limit them in order to prevent error and costs. The improvement of the outcomes comes naturally when the standardization applies and there is a clear set of processes in a correct order that produces the same outcome with little or no variation. Six Sigma is a detailed process that clearly differentiates between the causes of variation and outcome measures of process, having the advantage of targeting the pre-implementation processes and prevent the "overdone" work[6-9].

Plan-Do-Study-Act (PDSA) (Figure 2) is a cyclic process monitoring action based on the concept of fast implementing an improvement and refine it along the way by examining the results and responding to what was learned. The use of PDSA is best integrated with Six Sigma in short-term improvements and process monitoring; the majority of healthcare quality improvement using PDSA achieved important goals because the teams were able to make early changes in the process, and the initiatives were implemented gradually[10-12].

Health management systems across Europe have been focusing much more pressing issues to have the resources to invest in improvement science. Another aspect which needs to be presented is the existence of multiple European quality control in higher education institutions, of which the most notable is European Quality Assurance Register for Higher Education (EQUAR)[13].

The Healthcare Improvement Science (HIS) successfully integrates the process improvement techniques mentioned above and rises the concept of change and improvement at the education level, being believed that, no matter how many people want to change a system, the system must be changed by experts trained to modify its parameters and assuring success. The Bled definition of HIS is "Healthcare Improvement Science is the generation of knowledge to cultivate change and deliver person-centered care that is safe, effective, efficient, equitable and timely. It improves patient outcomes, health system performance and population health"[14].

In a Romanian research report on HIS and sources of education throughout Europe, the conclusion was that the quality improvement and patient safety are imperative clinical targets, but still the research in this matter has failed to produce in most of the countries a continuous and sustainable curriculum for specific courses. The need for the improvement of science courses is definitely high, but there is a lack in both research studies and in application. It is a necessary and a predictable step in order to achieve a better patient outcome, a better clinical management and a better financial management throughout any healthcare system.

Focusing on patients safety and continuously acting on HIS principles, applying process monitoring and control approaches must become the number one task for all healthcare stakeholders, government officials, quality assurance officers but, most of all, doctors, nurses and patients.

So, in conclusion, we must state that the need of change in healthcare is mandatory, but the change of a system that complex must be made scientifically and by clear principles that proved efficient in the past. These clear methods are fail-safe approaches to change and guarantee the successful change and improvement in order to achieve better management and a safer heathcare system: continuously adjusting, fostering and sustaining a culture of change and safety, developing and clarifying an understanding of the problem, involving key stakeholders, testing change strategies, and the continuous monitoring of performance and reporting of findings to sustain the change. ■

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