

## SPECIAL ARTICLE

# Leading the way to improvement: An Interactive Course on Improvement Methodology for Latin American Physicians

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Improvement methodology has taken on a key role in healthcare. Quality improvement initiatives can involve a wide range of activities, from implementing evidence-based practices to improving patient safety and satisfaction.

In Latin America, there are important challenges and opportunities to improve the quality of healthcare systems in several aspects, including the non-evidence-based use of material resources, medical errors, safety problems in hospitals, lack of access or delays in services, and medical care that often fails to focus on the needs of patients and their families. Therefore, it is necessary to direct efforts to optimize the quality of the healthcare system with the same dedication as in settings with greater resources.

The Latin American Society of Pediatric Emergency Medicine (SLEPE) is dedicated to standardizing the management and treatment of pediatric emergencies across the continent. To achieve this goal, the Society operates through various working groups, including a Working Group on Education. In 2022, the SLEPE partnered with Cincinnati Children's Hospital Medical Center to collaboratively develop and offer a course on improvement methodology.

The primary goals of this course were to disseminate and apply fundamental knowledge of continuous improvement methodology and to provide participants with the necessary tools to effectively carry out improvement projects. It was proposed that the course be conducted online, utilizing a recognized communication platform. SLEPE subsequently

confirmed the participation of five teams from institutions from different Latin American countries: Paraguay, Uruguay, Argentina, Costa Rica and Guatemala. Each group was required to have a leader, with team members consisting of pediatric residents, nurses, and pediatricians. As an innovative strategy, personalized support was provided to the team leaders to facilitate the successful execution and implementation of quality improvement projects in their institutions.

Kern's 6-step approach was used for the development of the Improvement Methodology course. These steps include: (1) problem identification, (2) targeted needs assessment, (3) objectives and goals, (4) educational strategies, (5) implementation, and (6) evaluation and feedback<sup>(1)</sup>.

## EDUCATIONAL STRATEGIES

The course content is consistent with curriculum of the Institute for Healthcare Improvement (IHI) and the improvement methodology described by Langley *et al.*, addressing identified knowledge gaps. The training lasted 12 months and included four theory sessions and three coaching sessions for team leaders. Participants were encouraged to acquire Langley's book as a guide<sup>(2)</sup>.

## GRADUATION

All projects focused on the pediatric emergency department, ranging from how to optimize the triage of patients arriving in the emergency department to double-checking frequently used medications in the shock and trauma room to improve the safety of medication administration. Eighty percent of the improvement methodology projects achieved the established goal.

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**TABLE 1. Course design.**

	Participants	Program
Learning goal	By the end of the course, the participants will be able to: 1. Design a Global and SMART objective 2. Design and analyze the different components of the key driver diagram 3. Demonstrate the steps of a PDSA cycle (plan, do, study, act) and use a run chart analysis as a measure of effectiveness	By the end of the course, over 80% of the participants will be able to implement their Quality Improvement projects within their respective institutions
Process goal	Each participant will have attended all four sessions of the course	By the end of the course, participants will run at least 2 PDSA cycles in their Quality Improvement project
Results goal	By the end of the course, each participant will complete a quality improvement project and describe the results	By the end of the course, more than 80% of the participants will demonstrate improvements and “shift the centerline” in their Quality Improvement project. All participants will be able to analyze and provide feedback for Quality Improvement projects

SMART objective: Specific, Measurable, Achievable, Relevant, and Time-bound; PDSA cycle: Plan, Do, Study, Act.



**FIGURE 1.** Diagram illustrating the process of implementation of improvement methodology.

**TABLE 2. Contents of the course.**

Type of session	Date	Description
Theory # 1	March 2023	The teams presented their project ideas and explained why they were interested in addressing that particular problem. The following topics were addressed: the concept of science of improvement based on Deming’s theory and how to design SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) objectives
Personalized assessment		After learning how to create global and SMART objectives, the team leaders presented their objectives and received immediate evaluation and feedback. Additionally, they were taught how to perform system mapping using sFMEA (system Failure Modes and Effects Analysis)
Theory # 2	Jun 2023	The following topics were addressed: definition of data measurement, the key driver diagram, PDSA cycle, and run charts. During this session, participants were asked to reflect on the outcome, process, and balance measures they used for their project and to think about how they were going to reach them. They were also invited to present the sFMEA or system mapping of their respective projects
Personalized assessment	September 2023	The concepts of the PDSA cycle and run chart and how to use them to evaluate their data were reinforced. Team leaders presented their preliminary data and were given feedback on the measures chosen for their respective projects
Theory # 3	November 2023	The following topics were addressed: run charts vs. control charts, types of control charts, special cause rules and psychology of change. The teams presented their key driver diagrams and run charts
Personalized assessment	January 2024	The PDSA cycles performed by each team and their respective Run charts were analyzed
Theory # 4	February 2024	The following topics were addressed: summaries of the key concepts of improvement methodology, how to implement and sustain over time a project that achieved system improvement, and how to be a leader and manage a team. At the end of the session, each team presented their final projects as part of the graduation

SMART objective: Specific, Measurable, Achievable, Relevant, and Time-bound; PDSA cycle: Plan, Do, Study, Act; Run charts: dispersion diagrams; sFMEA: system Failure Modes and Effects Analysis.

## **CONCLUSION**

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The Interactive Course on Improvement Methodology for Latin American Physicians provided participants with an introduction to improvement methodology. Mentors accompanied the teams to apply the concepts in their projects and collaborated to overcome barriers. The combination of online discussion and individualized mentoring could be an effective learning strategy. All teams used the improvement methodology concepts and tools in their projects and continue to work to implement them in their healthcare system.

## **REFERENCES**

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