Project 2: Distance Learning Course on Preanalytical Quality in Laboratory Medicine

Description of Project: The 'Distance Learning Course on Preanalytical Quality in Laboratory Medicine' project is a collaboration between the FEN and the Spanish Society of Laboratory Medicine (SEMEDLAB).

The FEN and SEMEDLAB have common goals of understanding to collaborate in providing training in laboratory medicine to scientists from designated emerging nations who seek to improve the quality and safety of their preanalytical processes.

Laboratories in emerging nations frequently lack access to standardised training, external quality assessment programmes, and tools to monitor, compare and reduce preanalytical errors.

The general objective of this course is to design and deliver an accessible, bilingual (Spanish and English) online course focused on the most common preanalytical errors, and the standardized procedures required to minimise variability and improve patient outcomes, while providing practical, evidence-based tools that enable laboratories to detect, monitor and effectively reduce the frequency and impact of such errors.

The expected outcome is a measurable improvement in sample quality across participating laboratories, accompanied by increased awareness and understanding of critical preanalytical factors, leading to more consistent practices and enhanced patient safety.

SEMEDLAB, through its Commission on Preanalytical Processes, will be responsible for:

- Designing scientific content and learning materials
- Preparing bilingual (Spanish/English) modules, including lectures, practical examples and self-assessment tools
- Ensuring alignment with international standards and harmonisation initiatives.
- Coordinating translation, recording and integration of the content into the virtual platform.

The FEN will be responsible for the following elements of the project:

- Promotion of the project to eligible countries through IFCC Full and Affiliate Member societies
- Selection of professionals to participate in the project. Selection will be made based on information provided on a standard application form and will be undertaken by independent assessors

- Communication with the professionals to obtain an evaluation report, in standard format, on completion of the project
- Coordination of feedback from the project and publication of outcomes
- Handling the finance for the project through the FEN account

The ‘Distance Learning Course on Preanalytical Quality in Laboratory Medicine’ project will commence towards 2026.

Specific Learning Objectives

1. Understand the critical steps involved in sample collection, handling and preparation, recognising how improper procedures at this stage generate the most frequent preanalytical errors.
2. Learn how to identify, classify and monitor preanalytical errors using available detection tools, LIS functionalities and internal quality control mechanisms
3. Analyse the historical and current evolution of preanalytical errors, assessing how technological advances and workflow changes have influenced error patterns.
4. Understand the role of preanalytical quality indicators and external quality assessment programmes to benchmark performance and guide quality improvement actions.
5. Learn to apply practical tools, harmonised procedures and targeted interventions that effectively reduce preanalytical variability and error rates.
6. Develop the ability to analyse real preanalytical error scenarios, identify root causes and propose evidence-based corrective and preventive actions.

Programme

The course will be held in weekly virtual sessions. Each 40-minute session will be followed by a time for questions and comments.

Sessions:

1. From sample collection to preparation for analysis
2. How to detect errors in the preanalytical phase and monitoring.
3. Preanalytical errors: Evolution over time
4. Quality indicators and external evaluation programs.
5. Tools for reducing pre-analytical errors.
6. Case-based analysis of preanalytical errors: real scenarios and problem-solving

SEMEDLAB professionals who are experts in the pre-analytical phase will teach the course. Teachers will be available for specific advice and consultations throughout the course.