

# EXTERNAL QUALITY ASSESSMENT IN LABORATORY SAFETY AREA (PNAEQ-1S SEGURANÇA LABORATORIAL 2023)

Catarina Ventura<sup>1</sup>, Ana Cardoso<sup>1</sup>, Ana Pires<sup>2</sup>, Ana Faria<sup>1</sup>

<sup>1</sup> Instituto Nacional de Saúde Doutor Ricardo Jorge, Departamento de Epidemiologia, Unidade de Avaliação Externa da Qualidade

<sup>2</sup> Instituto Nacional de Saúde Doutor Ricardo Jorge, Departamento de Saúde Ambiental, Unidade de Ar e Saúde Ocupacional

Email: [pnaeq@insa.min-saude.pt](mailto:pnaeq@insa.min-saude.pt)



## Introduction

The National External Quality Assessment Program (PNAEQ) provides tools for carrying out external quality assessment in Laboratory Safety area. These tools allow the identification of occurrences and/or critical points in the operation, installations or equipment, that could have impact on the safety of patients and workers, beyond prioritize the necessary improvement actions.

## Objective

Presentation of the methodology implemented in PNAEQ in 2023, for the external quality assessment in Laboratory Safety area, through scheme PNAEQ-1S Segurança Laboratorial

## Description

For 2023 PNAEQ catalogue includes a scheme of External Quality Assessment in area of Laboratory Safety, named **PNAEQ-1S Segurança Laboratorial**, with 3 exercises (Figure 1):



Figure 1: Summary of exercises included in PNAEQ-1S Segurança Laboratorial scheme, in 2023

**1. Monitoring Indicators:** The participants collect data to a result form, every six months, from 10 safety indicators previously defined by PNAEQ, related to 5 areas (Figure 2). In the end of each semester, the participants send the result form to PNAEQ, which analyse all data and prepare general and individual reports, for each participant.

Area	Indicator
Accidents / Incidents with patients	1. No. of accidents/incidents involving patients/customers
Accidents / Incidents with workers	2. No. of accidents/incidents during service involving workers
	3. No. of accidents/incidents during service involving workers, by professional category
	4. No. of accidents/incidents during service involving workers, by place of occurrence
	5. No. of accidents/incidents during service involving workers, by type
Occurrences with equipment	6. No. of occurrences due to non-compliance with the maintenance plan for laminar flow chambers
	7. No. of occurrences resulting from failure to decontaminate the equipment before the supplier's technical intervention
Prevention	8. No. of training actions in the scope of Laboratory Safety
	9. No. of exercises or emergency simulacrum performed
Laboratory Bioprotection	10. No. of occurrences related to laboratory bioprotection

Figure 2: List of indicators included in exercise "Monitoring Indicators" of PNAEQ-1S Segurança Laboratorial scheme, in 2023

**2. Internal audit:** PNAEQ distributes a checklist to the participants to be used in an audit that is carried out by the participants themselves. There are 9 areas included, distributed within 51 questions (Figure 3). After participants submit the results, PNAEQ analyse them and prepare general and individual reports, for each participant.

Area	No. of Questions
A - Laboratory facilities and working conditions	7
B - Identification of risks	5
C - Storage, packaging and transport of samples	7
D - Incidents, injuries, accidents and occupational diseases	4
E - Personnel health and safety	6
F - Laboratory equipment	9
G - Waste treatment	5
H - Fire prevention and protection	6
I - Risk assessment in the context of biological safety	2

Figure 3: Areas and number of questions included in the checklist provided to the participants, for exercise "Internal Audit", of PNAEQ-1S Segurança Laboratorial scheme, in 2023

**3. Case-Study:** The participants are invited to answer multiple-choice questions, based on photographs that illustrate some laboratory situations, through an online questionnaire (Figure 4). After submitting results, PNAEQ analyse them and prepare general and individual reports, for each participant.

Figure 4: Online questionnaire available to participants, for exercise "Case-Study", of PNAEQ-1S Segurança Laboratorial scheme, in 2023

## Discussion

Participation in **PNAEQ-1S Segurança Laboratorial** scheme, when carried out periodically, allows the implementation of preventive and/or corrective actions to eliminate and/or reduce the causes of occurrences, sharing of knowledge, and establishing and maintaining a safe working environment for workers, patients and visitors.