

PARASITIC MORPHOLOGY (PNAEQ 2021)

A study of quality assessment in clinical parasitology for detection of spiked specimens with *Schistosoma mansoni*

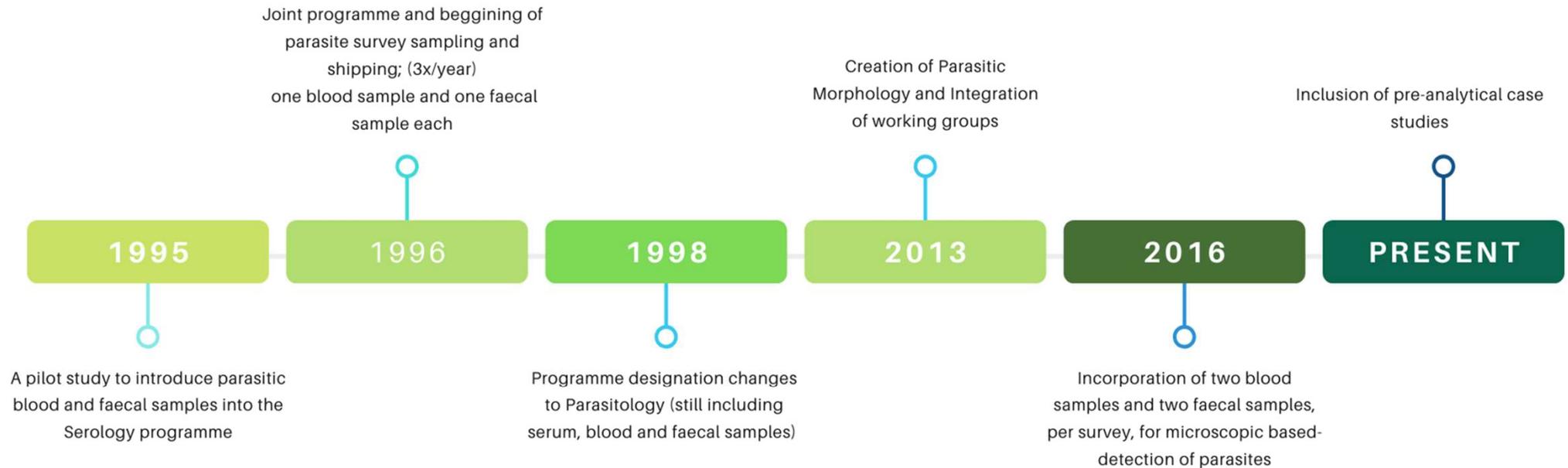
Cláudia Aldeia, Helena Correia, Susana Silva, Ana Faria, Mónica Botelho, Teresa Baptista Fernandes, Maria Guilhermina Moutinho, Quirina Santos Costa, Gabriela Santos Gomes, Cláudia Júlio

National Health Institute Doutor Ricardo Jorge - Avaliação Externa da Qualidade

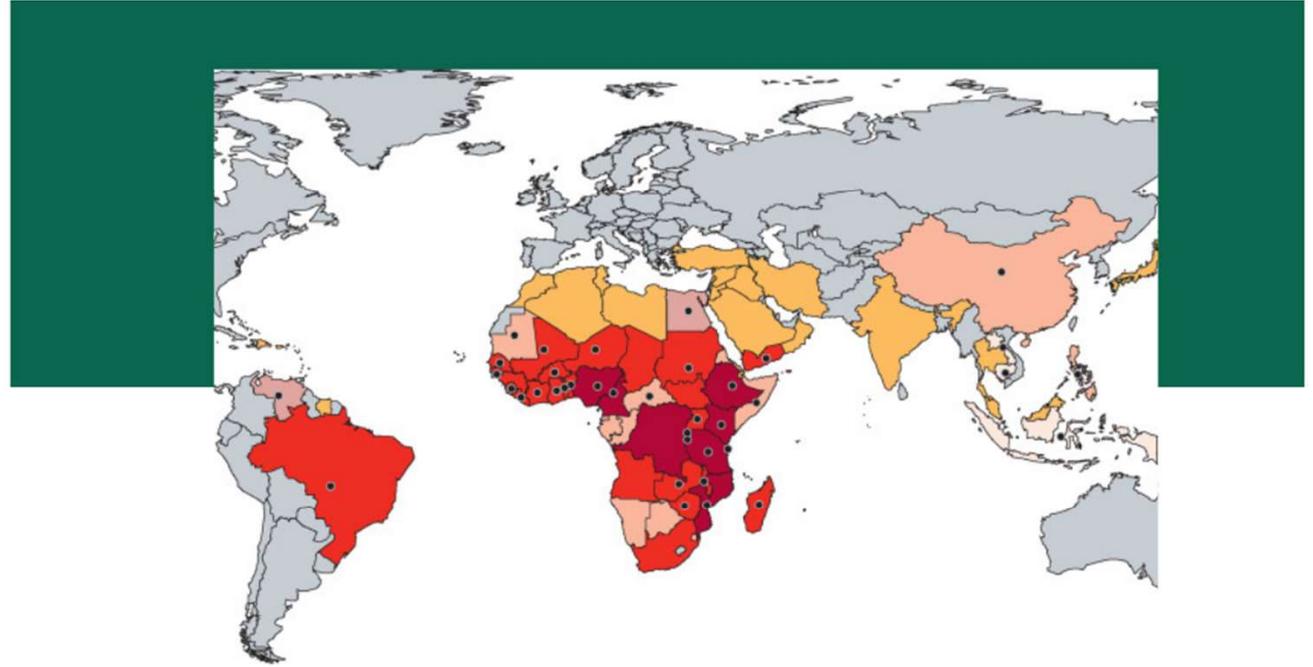


PORTUGUESE NATIONAL PROGRAMME FOR EXTERNAL QUALITY ASSESSMENT (PNAEQ)

A brief history of Parasitic Morphology EQA milestones



Schistosoma mansoni



Primarily a human parasite
Prevalent in tropical and subtropical areas

Poor communities without access to safe drinking water and
adequate sanitation

Objectives of the study



DPDx. *Schistosoma mansoni* eggs, Figure E.



First goal

Spike negative faeces with *Schistosoma mansoni* eggs for an EQA scheme



Second goal

Testing of homogeneity and stability of the spiked sample

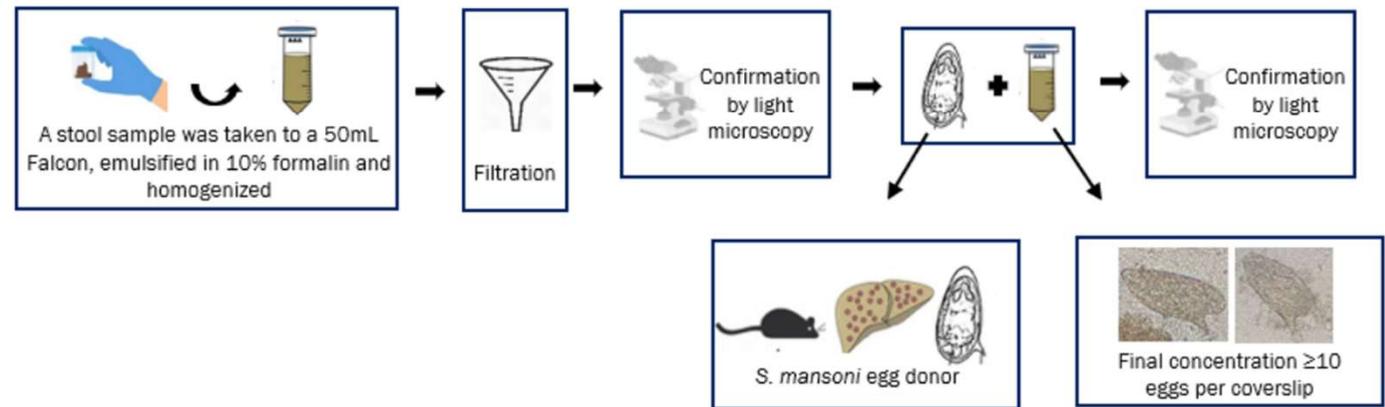


Third goal

Evaluate the participants' performance

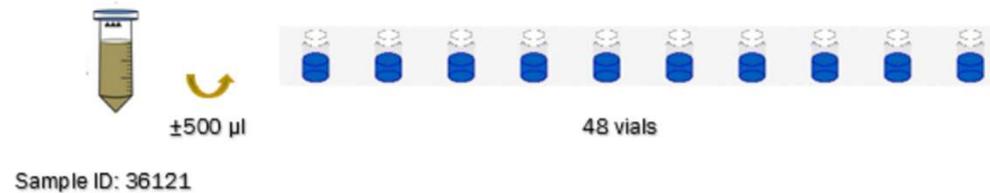
METHODOLOGY

SPIKED SAMPLE PREPARATION



.....> This study was undertaken between the 5th of July 2021 and the 28th of July 2021

PROFICIENCY TESTING

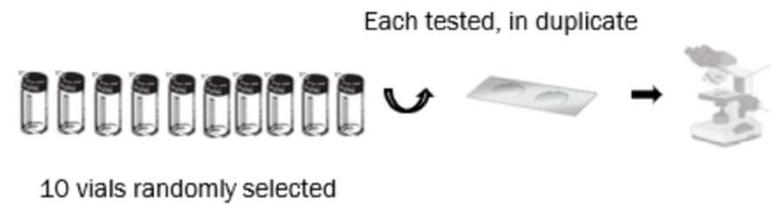


Homogeneity and Stability

Procedures



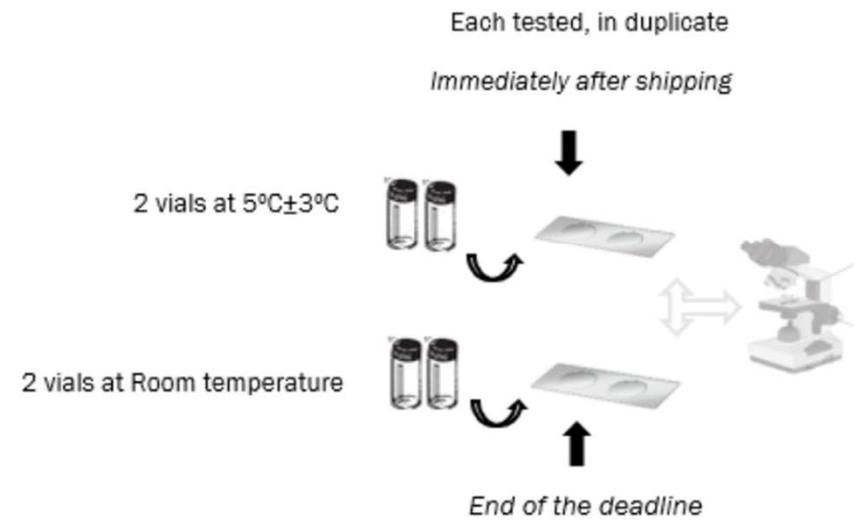
Verifying homogeneity



Results conducted by the same operator



Verifying stability





Results

HOMOGENEITY ANALYSIS OF OBTAINED RESULTS

EQA stool samples were confirmed to be **homogeneous**, considering all selected samples were found to be positive for the presence of *Schistosoma mansoni*.



STABILITY ANALYSIS OF OBTAINED RESULTS

When stored at $5^{\circ}\text{C}\pm 3^{\circ}\text{C}$ and at room temperature, EQA faecal samples were **stable** for a **period of 23 days**, with all samples observed, revealing the presence of the parasite.



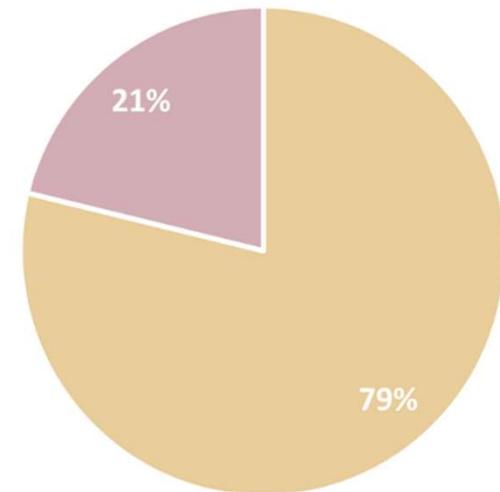
LABORATORIES PERFORMANCE



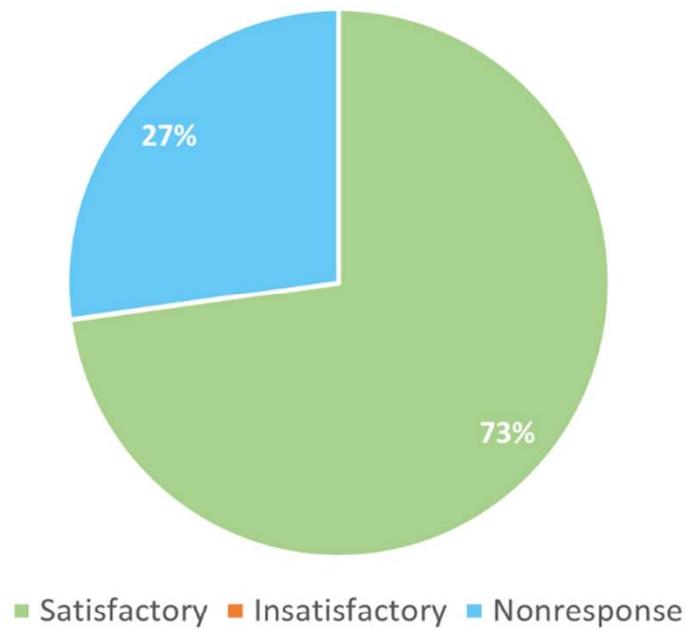
Results

Number of participants laboratories returning external quality assessment results

SAMPLE ID: 36121



■ Results ■ No Results



Results

Sample quality

All the participants, that classified **sample quality**, considered it **satisfactory**

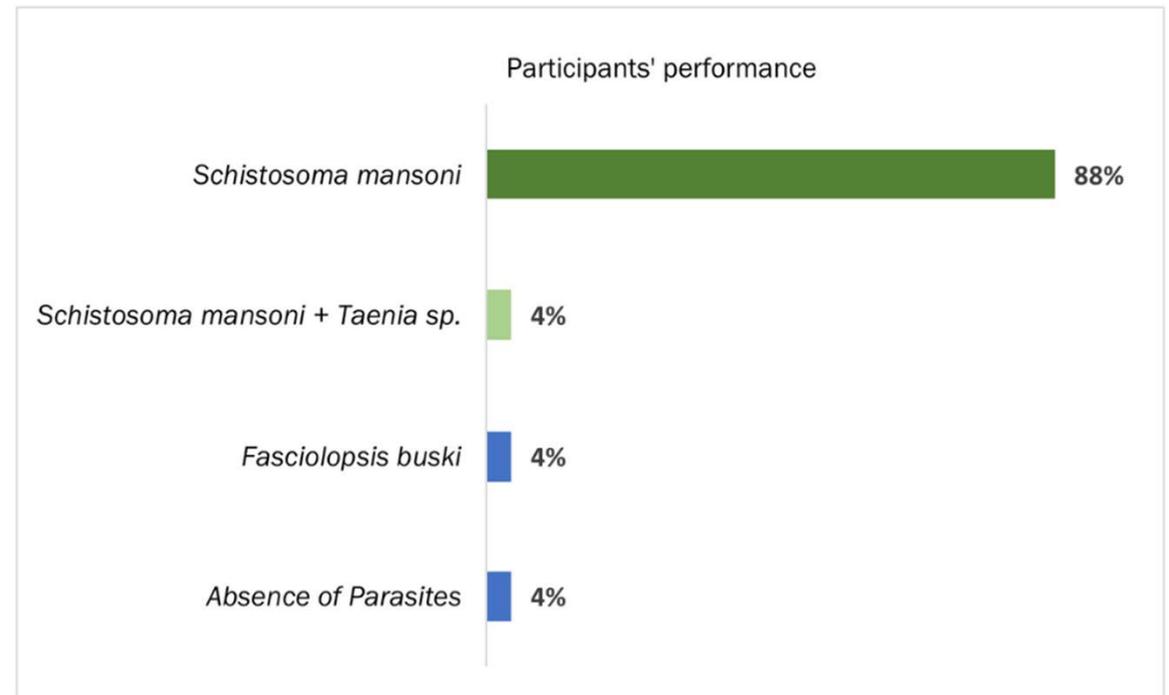
SAMPLE ID: 36121

Results

**24 out of 26
laboratories**

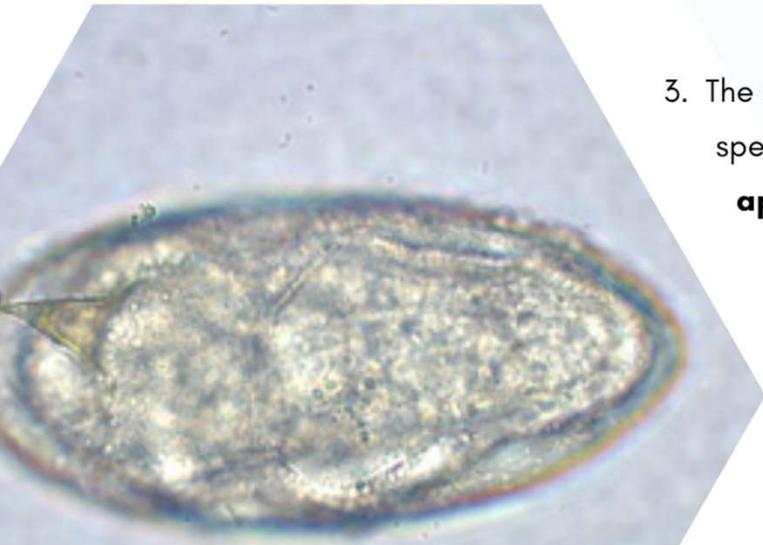
**92,31% identified *Schistosoma mansoni* in EQA
faecal samples**

SAMPLE ID: 36121



Conclusions

1. Overall, **spiked sample's preparation was homogeneous and stable** over the course of the study.
2. **More than 92%** of the 26 identification reports received, for specimen ID 36121, were correct, with almost all participating laboratories **identifying *Schistosoma mansoni* on EQA stool samples.**
3. The correspondence of the results obtained, with the spiked specimen preparation, demonstrates the **potential of this approach to generate clinical-like samples**, on EQA testing, when these are limited.



Acknowledgements

- Laboratório de Microbiologia da ULI, Departamento de Doenças Infecciosas, INSA
- Biomedical Research Institute, Rockville

References

- 01 ISO/IEC 17043:2010 "Conformity assessment - General requirements for proficiency testing"
- 02 ISO/IEC 13528:2015 "Statistical methods for use in proficiency testing by interlaboratory comparison"
- 03 WHO manual for organizing a national external quality assessment programme for health laboratories and other testing sites 2016, ISBN: 9789241549677



Contact Info

Cláudia Aldeia
claudia.aldeia@insa.min-saude.pt