

# BIOPRISM: A Laboratory Biosafety Training Initiative by Pakistan Biological Safety Association

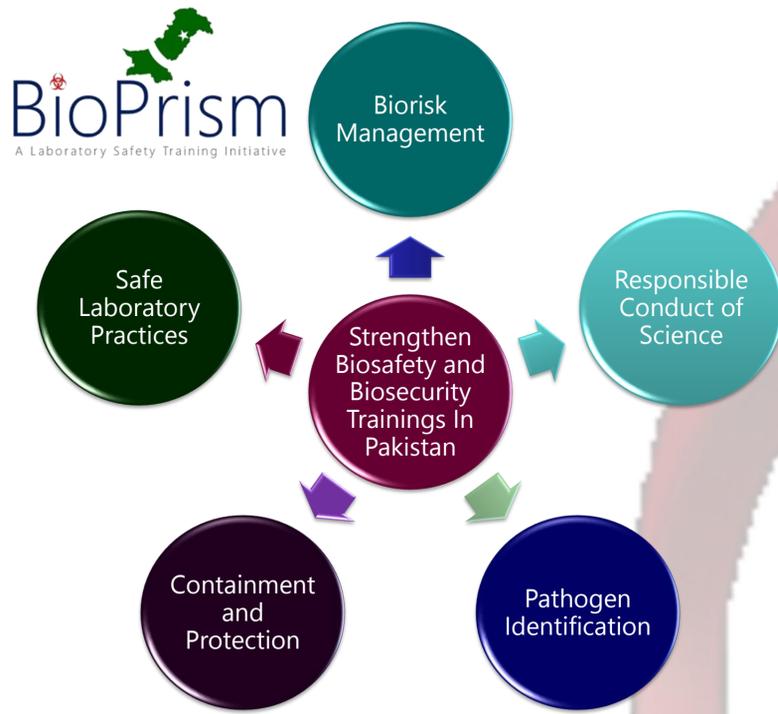
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## Abstract

Pakistan Biological Safety Association (PBSA) has been dedicatedly committed in imparting biosafety related trainings throughout the country in collaboration with Fogarty International Centre (FIC), National Institute of Health (NIH), USA and Behavioral Based Improvement Solutions (BBIS). PBSA conducted a practical mock laboratory "Wet" workshop, with the aim to provide mentoring on biosafety issues with a team of facilitators, who developed curriculum for this laboratory biosafety training initiative namely "BioPrism". The BioPrism concept is based on the phenomenon that a ray of light (mentor) when passes through Prism (PBSA) reveals 7 colors (mentees). The aim was to implement conceptual biosafety improvements and extending this process in future. The 5-days BioPrism workshop emphasized on lectures and practical sessions on different control biosafety and biosecurity. Training without power point presentations was the novelty of the workshop. The participants for the BioPrism (n=41) were selected from all over Pakistan through a stringent criteria based on their working experience in biomedical and clinical labs with minimum BSL-II. Requisite qualifying standard for BioPrism was set at ≥80 % in final examination; both theory and practical sessions. Mean pre-test result of 40% elevated up to 99.5% in final test after five days. The daily quizzes and BioPrism evaluation record revealed significant differences among the knowledge learnt from the demonstration skills and satisfaction (p≤0.01) of various participants. The strategy of understanding the effectiveness of four primary controls of biosafety was 60% in the beginning, which was significantly increased up to 100%. These results indicated a behavioral change among the participants and preparedness to implement biosafe protocols back in their home institutes after the completion of the workshop. Keeping in view the outcome of this initiative, BioPrism can be considered as a right step of a long biosafety journey in Pakistan. The theme of BioPrism can be used as a model for other regions to face the challenges during this success story.

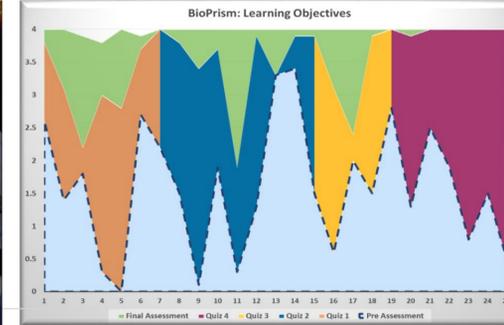
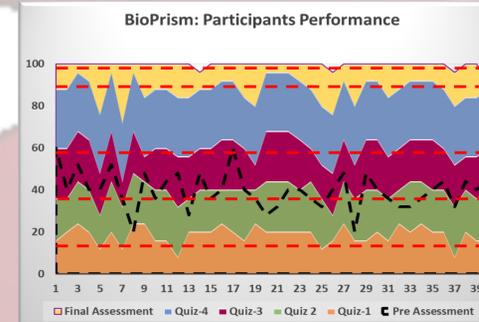
## Introduction



## Materials & Methods

- During the training, performance of participants, instructors & course contents were evaluated.
- Participants were evaluated based on daily, pre & post assessment quizzes, while course & instructors were evaluated through feedback forms.
- Pre & post assessment comprised of twenty five questions, while these questions were divided among four days according to the topics being taught on the respective day.
- Each correct question was given 4 marks while each wrong question was given 0 mark.
- In feedback, response of participants towards different questions including quality and relevance of information provided, performance of the instructors & overall grading of the workshop was recorded.
- The answers were graded as 0 (unacceptable) to 4 (excellent).
- Overall workshop based on the developed manual was also evaluated in the shape of three adjectives from each participant and word cloud was developed to present whole shape of the feedback.

## Results



## Conclusions

- The BioPrism manual was highly appreciated by the participant from various institutes of Pakistan
- Contents of the manual can be used in both mock lab & real scenario to train personnel working in the field of life sciences
- The training increase their capacity and skills for safe working in hospitals and laboratories

## Acknowledgements



BioPrism Team: The founding faculty was selected after a thorough process, and mentored by Sean G. Kaufman. Standing L to R: Furqan Ahmad, Aamer Ikram, Sean G. Kaufman, Sehrish Durrani, Zeba Rasmussen, Philippe Stroot; Sitting L to R: Samreen Sarwar, Saima Saleem, Amber Javid, Akbar Ali Malik, Javed Muhammad, Furqan Kabir and Ali A. Sheikh

*Let's do safety together.*



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Activities were carried out through academic and health research institutions within Pakistan.

A training manual was designed "BioPrism: a laboratory biosafety training initiative" to develop a mock lab based training modules

The training increase competence level of researchers, technicians, veterinarians, biotechnologists and agriculturists for safe working in labs as well as hospitals.