

SMALL ACTIONS BIGGER IMPACT: TRAINING BRINGS IN HOUSE SOLUTION FOR BIOSAFETY ISSUES



Prof. Dr. Saeed Khan

Ph.D. (Microbiology), Postdoc (University of Washington, USA)

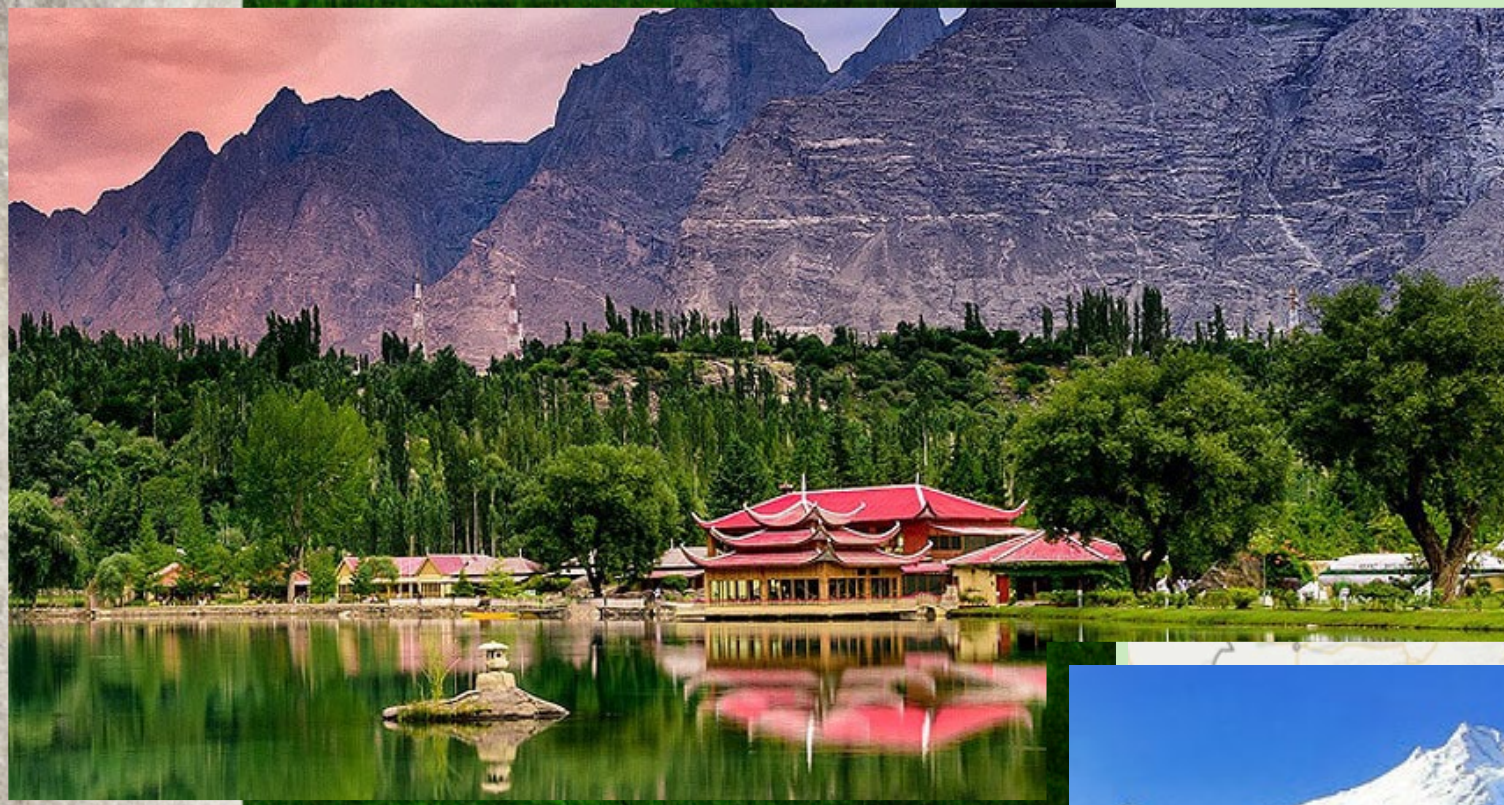
Professor of Pathology

Head of Molecular Pathology Department,

Dow University of Health Sciences,

Karachi, Pakistan

saeed.khan@duhs.edu.pk

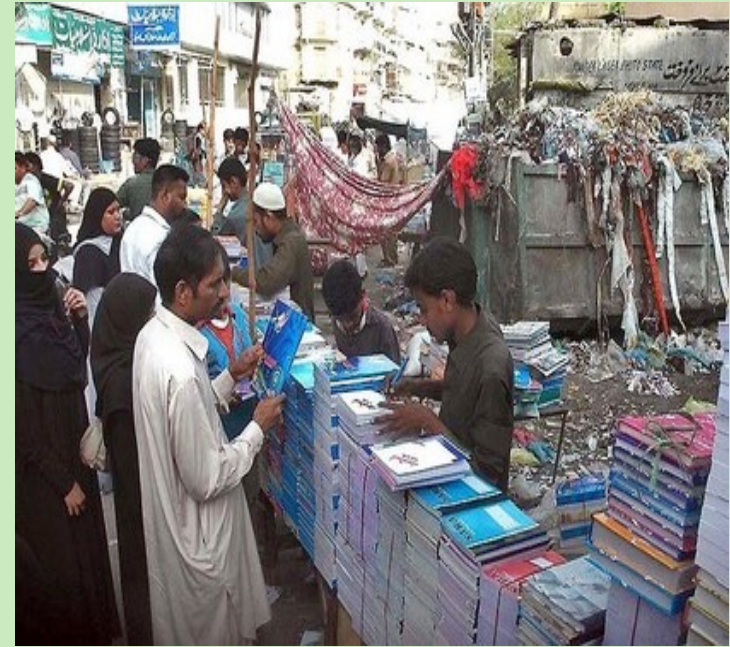


Situational Analysis

Biological Waste Poses a Serious Environmental and Public Health Threat in Pakistan

According to Pakistan's environment ministry, the country's healthcare facilities generate nearly 250,000 pounds of medical waste per day. Much of this untreated waste is dumped at regular municipal garbage sites, leaving waste-pickers extremely vulnerable to exposure to infectious diseases and toxins.





Dow Diagnostic Reference and Research Laboratory Dow University of Health Sciences

- Established in 2007, working on No Profit No Loss basis in public sector
- Provide reliable, high quality diagnostic services at very economical rates
- ISO 15189:2012 accredited
- Recognized by (CAP) 89764-25-01

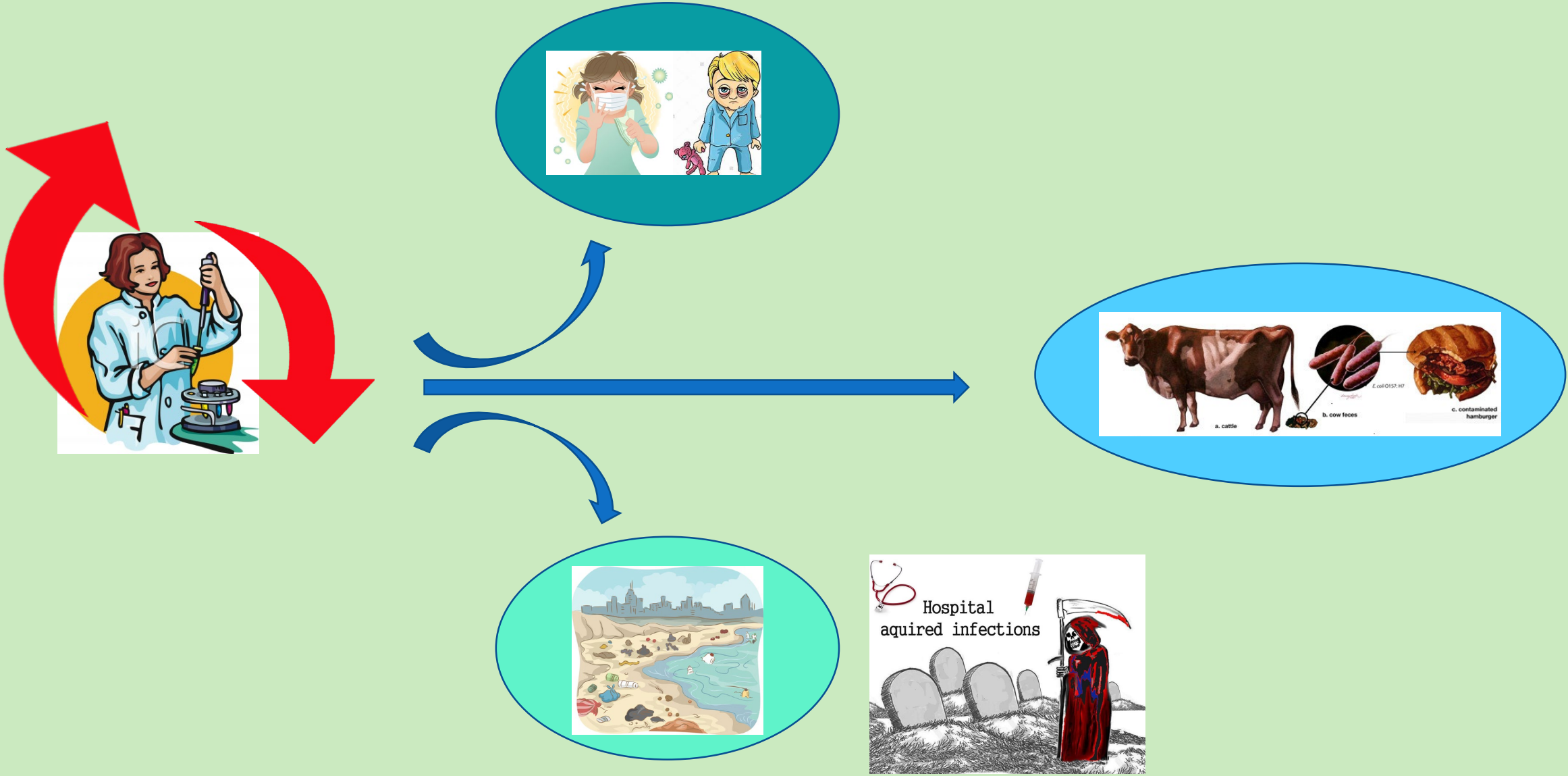


Laboratory Biosafety and Emerging Infections

Even with all the sophisticated SOPs many safety and security incidents occurred over the past years at so called advanced facilities.

This indicates that the conventional biosafety and biosecurity systems alone are not sufficient.

Source of infection Transmission





Gaining
knowledge
and getting
trained







Disseminating Knowledge and Trainings









Training workshop on bio-safety, bio-security held

Staff Report

KARACHI: Dow Center of Excellence (COE), Dow University of Health Sciences, in collaboration with Health Security Partners (USA) organized hands-on training workshop on Biosafety and Biosecurity at Ojha Campus.

The aim of the workshop was to introduce the clinical laboratory workers to basic concepts and principles of biosafety and biosecurity -- a neglected but crucial aspect of laboratory for laboratory workers.

During the workshop hands on training was given to the participants belonging to different laboratories from Karachi and Hyderabad including Dow Diagnostic Reference and Research laboratory, Indus Hospital laboratory, Liaquat National

Hospital, Chughtai Lab, Jinnah Post Graduate Medical Center, Dr. Punjawani Center for Molecular Medicine and Drug Research, Liaquat University of Health and Medical Science (LUMS), Isra University Hospital etc.

Dr. Saeed Khan, Associate Professor and Biosafety Professional and Master Trainer, delivered an informative and interactive lecture on "Introduction to Laboratory Biosafety and Biosecurity".

Then hands on training was given to the participants on proper Donning and Doffing of Personal Protective Equipments, Spill Management, and response to Needle stick Injury and eye splash in which each of the participant was presented with real-time scenarios and trained to manage the incident during the bench work in laboratory.



DUHS organises Chikungunya awareness session

Karachi 12 HOURS AGO BY PPI

Dow Centre of Excellence, Dow University of Health Sciences (DUHS) and Health Security Partners (HSP) jointly organised an informative CME session on Chikungunya and a workshop on "Biological Waste Management and Disposal for Clinical and Research Laboratories" on Tuesday at Ojha Campus.

The event was a joint venture of Dow Center of Excellence (COE) for Biosafety and Biosecurity and Health Security Partners, USA. The objective of the CME was to increase the understating of laboratory staff and doctors about Chikungunya infection and its prevention.

During the CME session, Dr Saeed Khan PhD, Associate Professor and Additional Director of DDRRL delivered a very informative lecture on "Chikungunya Virus". He explained the source of infection, symptoms, treatment, prevention and control of this infection. He also highlighted the importance of health hygiene and protection from mosquito's bite which was the main source of Chikungunya Virus infection.

The aim of this workshop and training was to enhance the skills of the healthcare workers how to manage and properly dispose the biological waste. Participants from well-reputed hospitals and universities including Dow Lab, Indus Hospital, Liaquat National Hospital, Jinnah Hospital, Liaquat University of Jamshoro, Chughtai Laboratory, Memon Hospital, Hamdard University, University of Karachi and other institutions attended this event.

During the session, Prof Dr Rana Qamar, Prof Dr Shaheen Sharafat and Dr Yahya Noori also shared their views about this event.

In-house Ideas

Implementation of in-house idea “MY MISTAKE” in the lab to discuss mistakes occurred in friendly environment.

Training of the Housekeeping staff for disposal of biological waste. To give them ownership, respect and to enable them to teach their peers.

Training of the lab staff for the biological risk mitigation and to see the affect of training by evaluating the pre and post training knowledge and behaviour of the staff.

My Mistake Meeting

- While working in the hazardous environment of diagnostic and research lab the occurrence of mistakes can not be avoided.
- The staff usually hide their mistakes However we introduced a forum of MY MISTAKE, in this monthly held meeting all the staff confess and discuss their mistakes occurred during their daily lab work in front of all lab staff and laboratory head in a friendly environment, where tea and cookies are served.
- Written record of all mistakes is kept and compared with the previous data to check the pattern of mistakes occurred.

My Mistake Meeting:

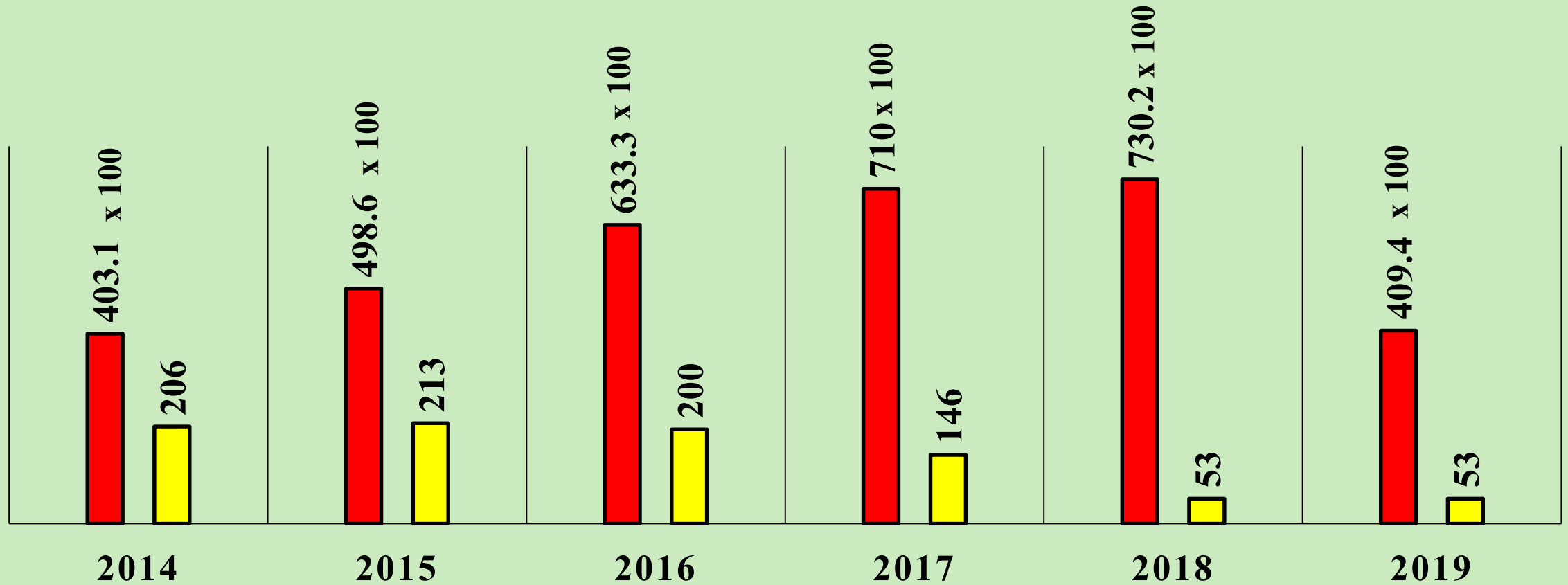
Meeting	62 th
Time	12:30 pm
Date	17-10-2017
Attendees	All Lab members
Duty Assigned	Shams & Sundus
Purpose	To minimize errors/mistakes

Agenda:

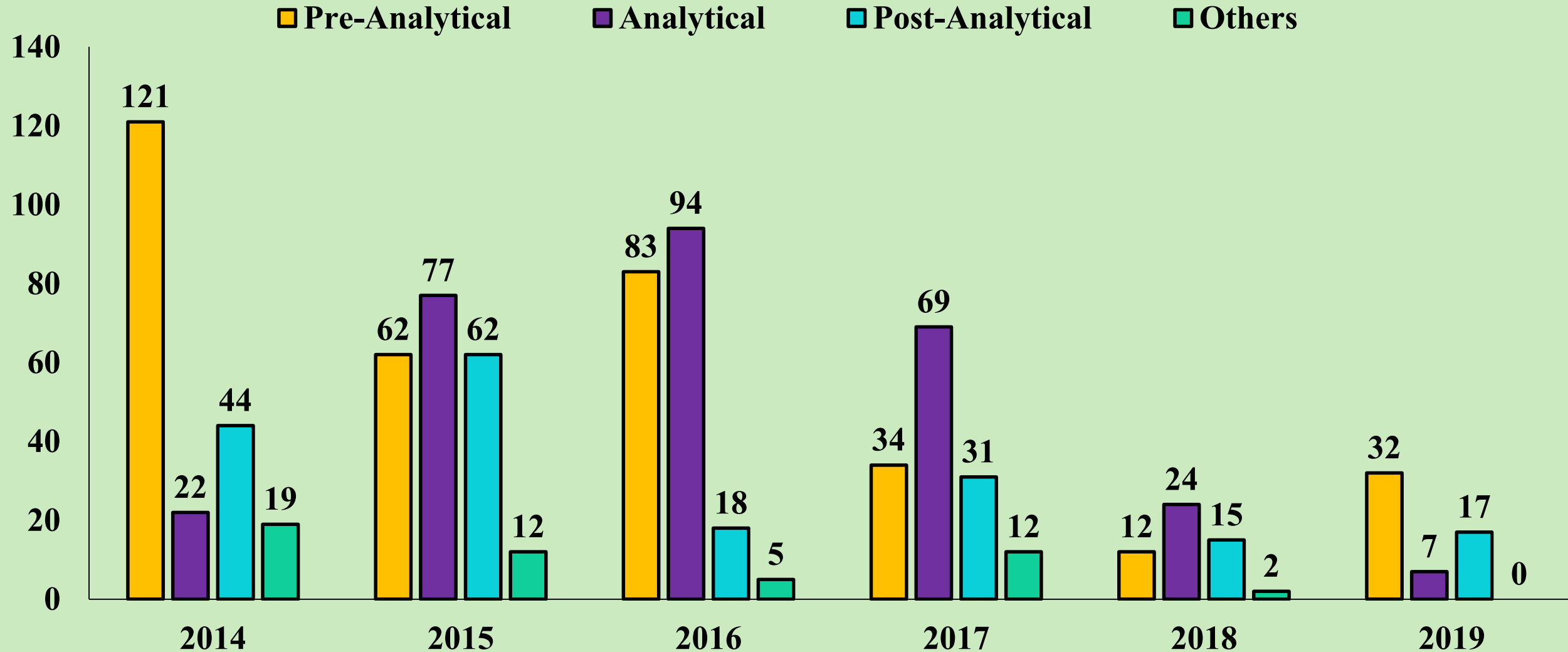
S.no	DATED	PROBLEM/MISTAKE:	COMMITTED BY:	INFORMED BY:
1.	22-09-2017	GHCV ID:17815272 performed twice in same batch.	Uzma, Maria	Shams
2.	22-09-2017	Repeat of HCV ID:17820684 not include in batch.	Waleed	Waleed
3.	23-09-2017	During print of HCV result sheet not mention the repeat on 40ct ID , so the sample was reported Positive to patient.	Shams	Shams
4.	27-09-2017	DsDNA two IDs report where delayed.	Maria. Uzma	Shams
5.	27-09-2017	DsDNA samples where left at ANA area on bench.	Maria, Uzma	Shams
6.	28-09-2017	GHBV report delayed .	Sehrish	Shams
7.	28-09-2017	GHCV result sheet not update complete.	Shams	Sehrish
8.	03-10-2017	HDV sample performed twice in same batch ID:17849327.	-	Shams
9.	05-10-2017	Repeat of HCV ID:17836963 not include in batch.	Waleed	Waleed
10.	14-10-2017	Quantiferon/IGRA ID:17908449 received on 14-10-2017, but on next day sample not took out from incubator.	Bilal Saif, Ayaz	Sabiha
11.	12-10-2017	IGRA ID:17903315, 17902794 the samples not took out from incubator.	Sampling	Sabiha
12.	16-10-2017	HCV performed twice in same batch. (ID:17911372)	Bilal Saif, Ayaz	Shams

Summary of mistakes by Laboratory Workers

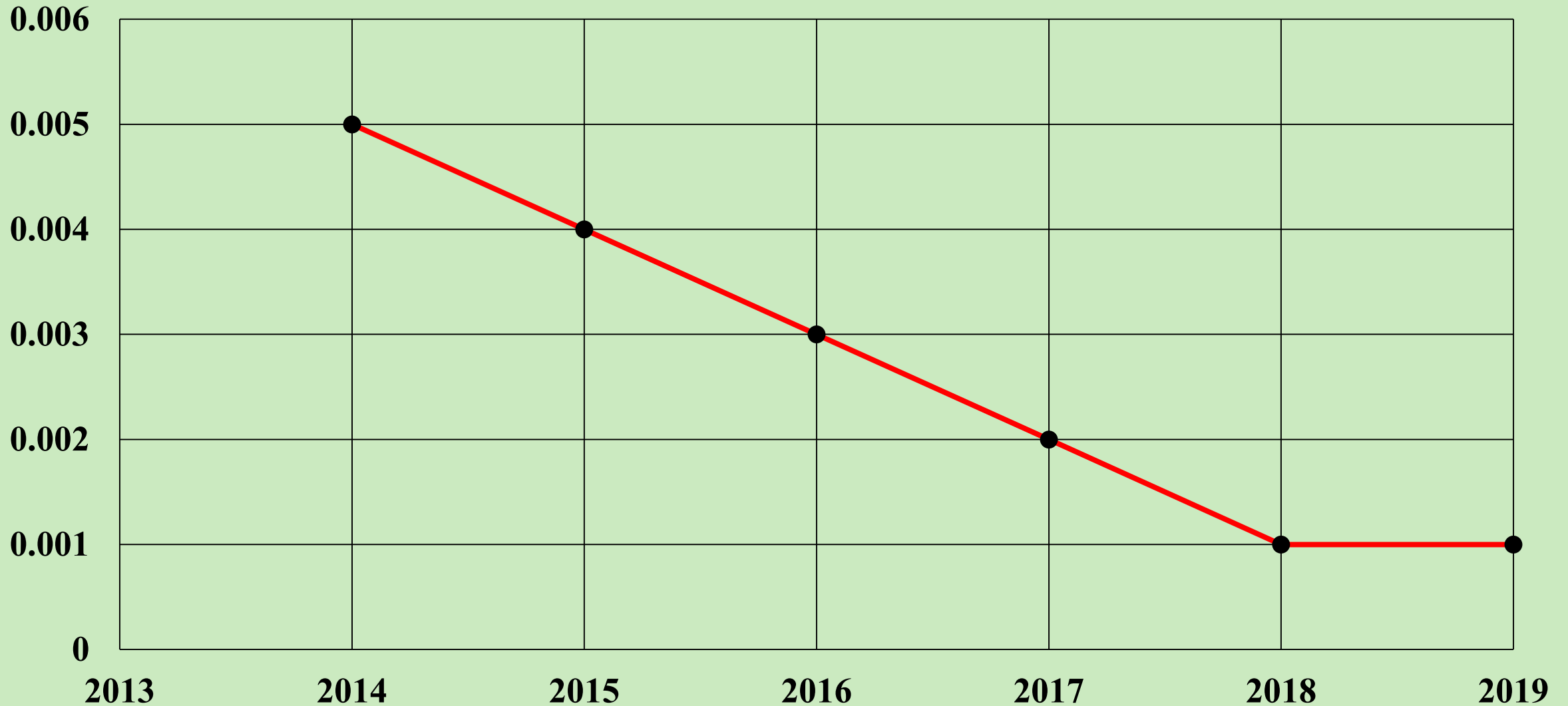
■ No of Sample Processed ■ No of Mistakes



Categorical Distribution of Mistakes



Frequency of Mistake Per Sample





**Acknowledgment and
Appreciation of housekeeping
staff**



Empowering the Housekeeping staff

**Housekeeping staff giving presentation
on proper waste management**

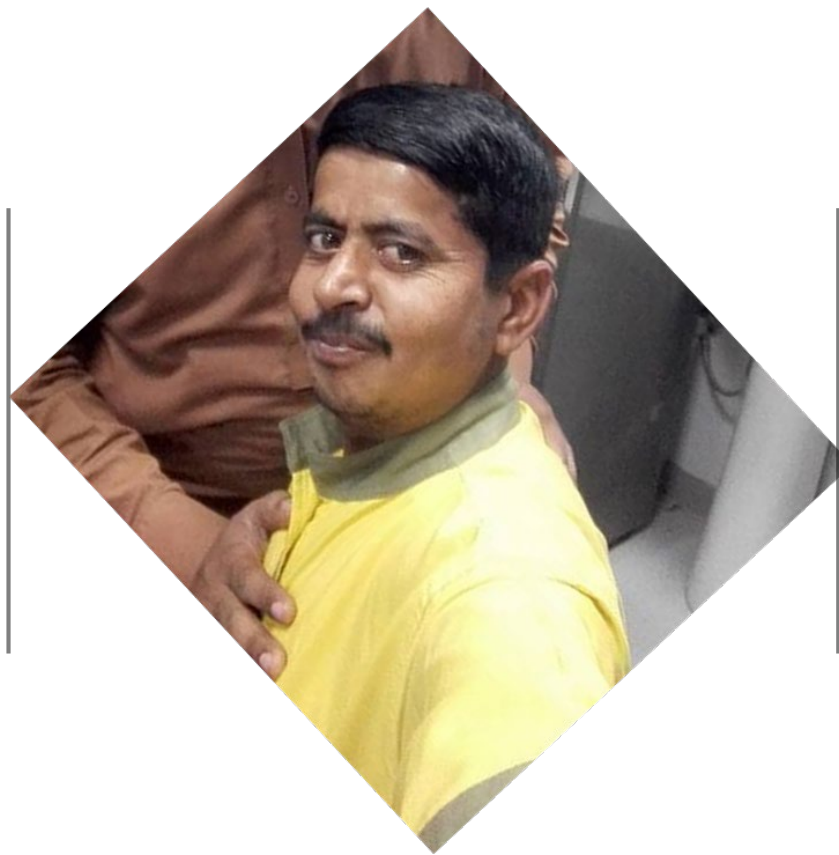
Encouraging and Supporting the Workforce



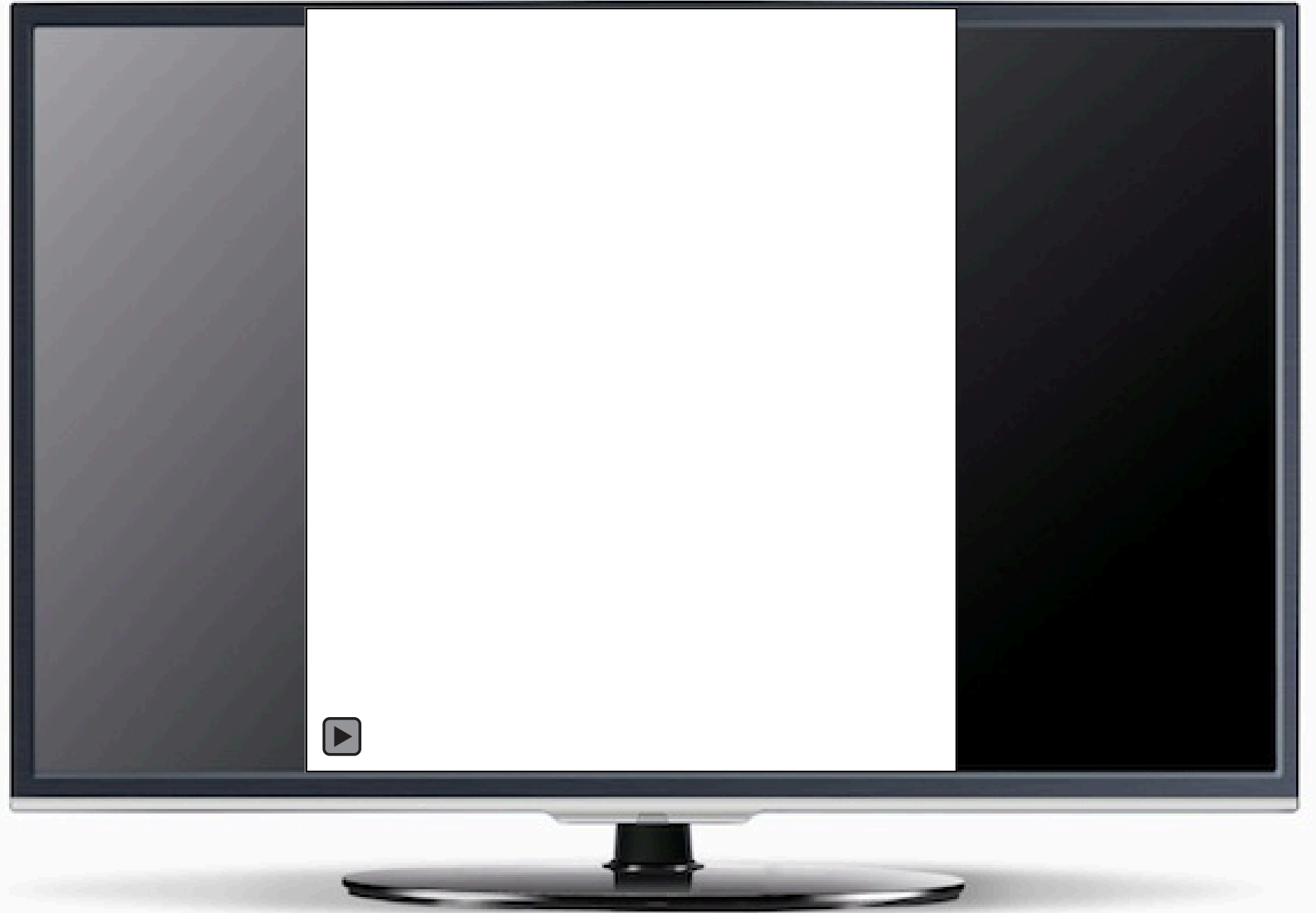
From House
keeping staff
to a Nurse







From House Keeping to Medical Receptionist





Helping the housekeeping staff for better future by educating them

Impact of Training on Biosafety Practices

Training of the lab staff for the biological risk mitigation and to see the affect of training by evaluating the pre and post training knowledge and behaviour of the staff

Methodology



Baseline survey based on questionnaire were filled by the laboratory personals in 2013.

After survey we conducted workshop/lectures on Biosafety and Biosecurity.

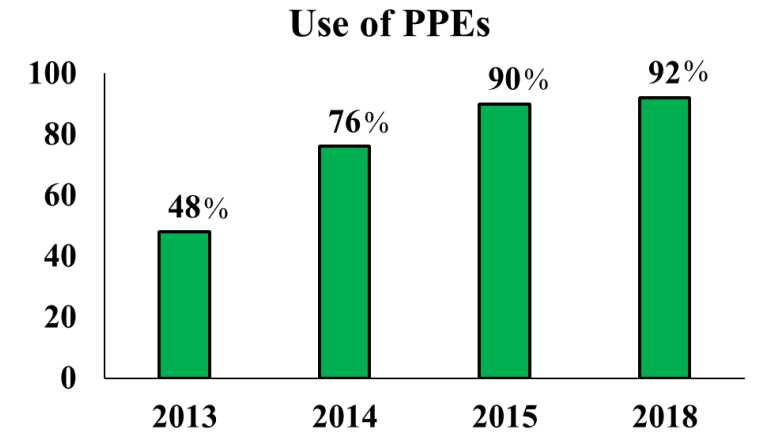
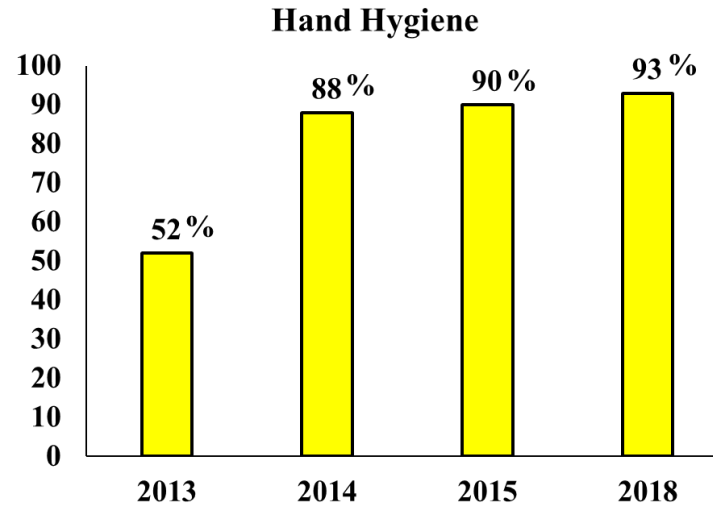
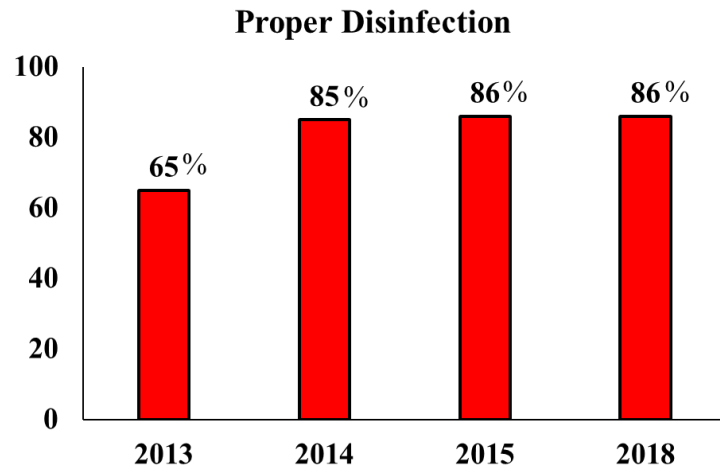
We conducted another survey in 2014 to check the level of awareness and impact of workshop and lectures.

Continues sessions of drills, CME/lectures, and hands on training regarding biosafety and biosecurity.

Another study of the biosafety practices among lab staff was conducted in 2015.

Recent study of the biosafety practices among lab staff was conducted in 2018.

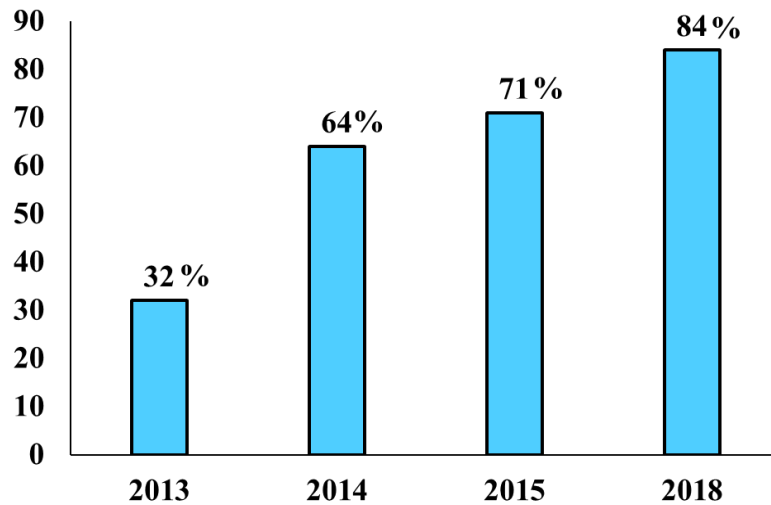
We compare all the survey results



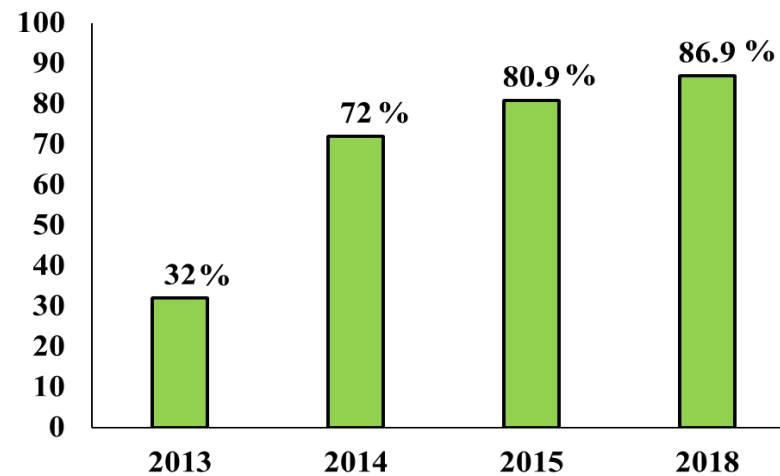
Impact of Training on Behaviour

Impact of Training on Behaviour

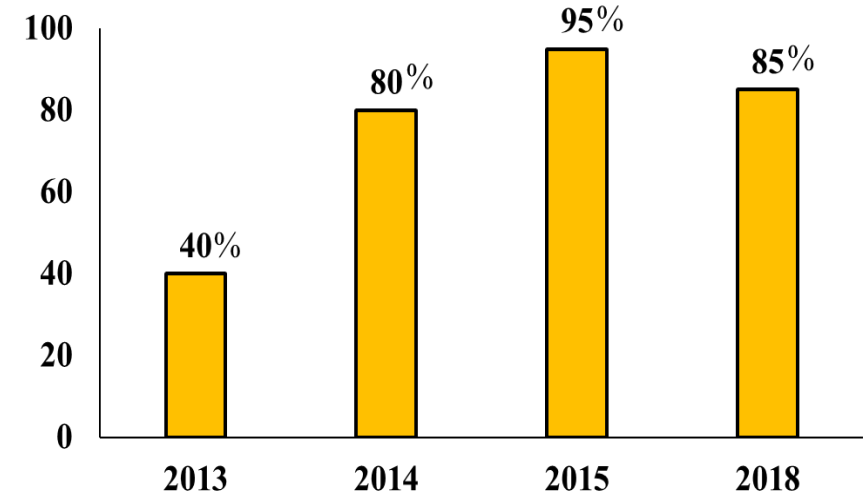
Proper Management of Hazardous Waste



Biosafety Level



The Incident Reporting









Conclusions

- The results show that besides the limited resources the implementation of our unique MY MISTAKE meetings has significantly improved the practices of our laboratory workers.
- After each training we observed significant change in awareness level, practices and attitude of the employees.
- Continuous and frequent workshops and trainings improved the quality of biosafety practices among the lab personals.
- This is the first step towards the implementation of Biorisk management system in our institution to bring **change** in biosafety **culture** with the support of our local and international partners.

Take Home Message

- Limited resources can not be presented as reason for failure in biosafety.
- Leadership providing better and continues training to the staff can have better impact on their behavior and practices.
- Implementation of in-house ideas like MY MISTAKE and empowering the house keeping staff can tremendously improve the safety culture.

Thank You



saeed.khan@duhs.edu.pk