



Hazard Specific Handbook for Jordanian Royal Medical Services (RMS)



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Background

- Jordanian Royal Medical Services clinical laboratories
 - Supervisors – full work load, very busy with maintaining day to day operations
 - Several Sandia-trained professionals on the staff
 - Laboratory technicians have college degree in biological science, however:
 - Biosafety training has not been a priority
 - Operators may not be aware of equipment safety procedures
 - Aware of potential infectious organisms but not necessarily how to protect themselves
 - Incidents may not always be reported
 - Need additional information on disease transmission

Primary Objective

To increase the knowledge and awareness in laboratory workers of the biological risks and the measures available to control them via development of a biosafety handbook



Methodology and Resources

- Gain upper management commitment to the biorisk program
- Assemble a Biorisk Management Committee to include Sandia-trained professionals
- Gain peer commitment to the biorisk program



Methodology

- The Biorisk Management Committee was surveyed with the intent to address the most common:
 - Instruments/equipment
 - Infectious agents
 - Work practices
- Prepared and distributed the Hazard-Specific Handbook
 - Resources for information included:
 - Canadian Pathogen Safety Data Sheets
 - CDC recommendations
 - WHO Biosafety Manual
 - Biosafety in Microbiological and Biomedical Laboratories (BMBL)
 - Disinfectant manufacturer fact sheets
- Provided classroom training and video demonstrations
- Post training/learning – did a Satisfaction Survey to gauge usefulness of information and evaluate the effectiveness of training
- Observed laboratory practices in use before and after training

Methodology (continued)



Satisfaction Survey



Which of the Best Practice sheets did you find most useful?

How the Best Practice sheets understandable and clear? Yes No
(Comments)

Did you feel there were errors or misstatements on any of the Best Practice sheets? Yes No
If yes, which ones:

Would you like to see more of these Best Practice sheets? Yes No
If yes, what topics would you be interested in?

Finally, how would you rate the usefulness of the Biorisk Guidance Handbook:

Very useful, I will integrate these practices into my laboratory procedures

Handbook useful, I will consider changing some of my procedures

Some information was useful, but a lot of it was redundant or impractical for my workplace

Not very useful, I have most of the information already or it is too difficult to change my procedures

Not useful at all

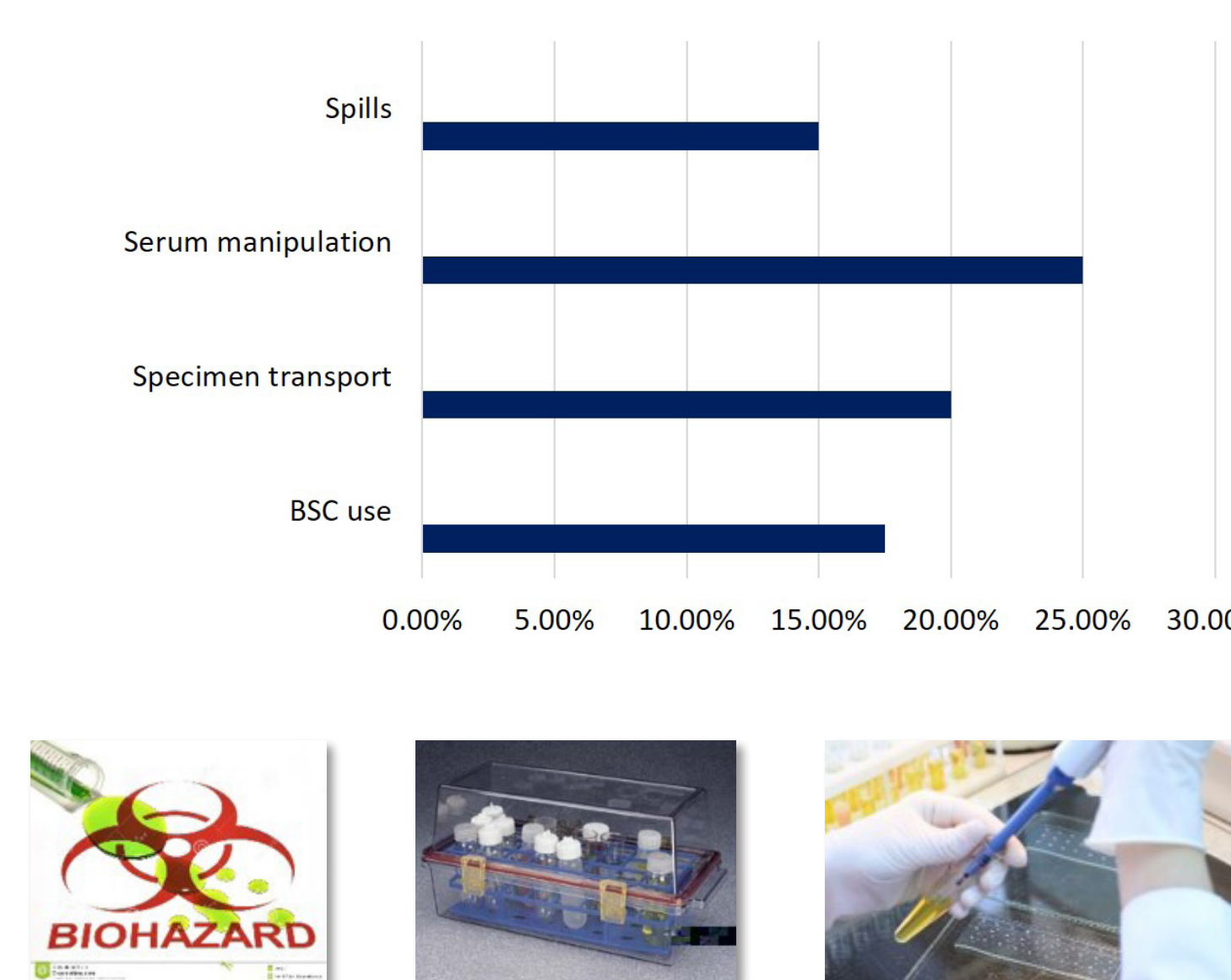
Results: Topics covered in Hazard-Specific Handbook

Plus 24 Pathogen Safety Data Sheets

Common Procedures
Hypodermic needle use
Liquid culture of bacteria
Tissue culture
Separation of serum
Use of gloves/PPE
Hand washing
Sample transport between laboratories
Spill cleanup
Disinfection
Opening ampoules of infectious material

Common Equipment
Centrifuge
Micro centrifuge
Biological safety cabinet
Autoclave
Flow cytometer
Vortex mixer
Microscope
Incubator

Most Useful "Tips" (n=40)



Results

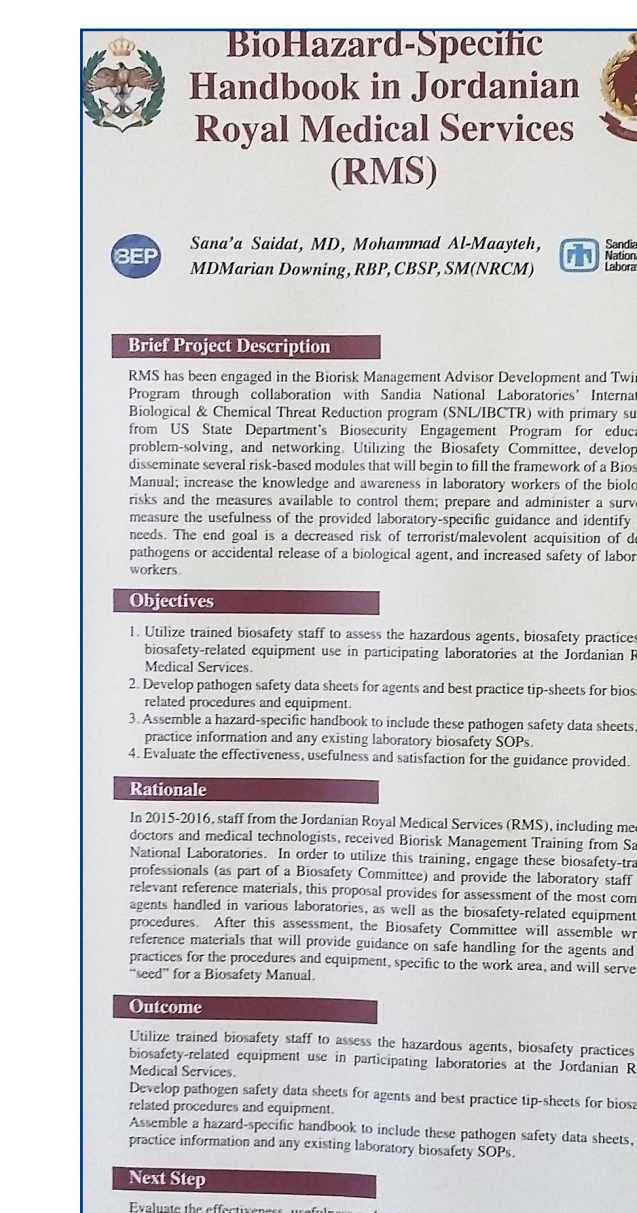
- Project inspired many other safety efforts:
 - Engineering support trained to certify BSCs
 - Emergency call list generated for hospital laboratory

Results (continued)

- Appointed biosafety officer for each laboratory (5 Sandia-trained)
 - Their mission has been developed and approved
- Generated safety data sheets for chemicals

Conclusions

- Initial biosafety project (Hazard Handbook) resulted in:
 - Increased interest and enthusiasm for Biorisk Management in RMS
 - Formation of an active Biorisk Management Committee
 - Utilized Sandia-trained doctors and medical technologists
 - Reevaluation of equipment status, training, SOPs, manuals
 - Generation of written reference material in each laboratory
- Management endorsement of Biorisk Management efforts:
 - Poster presentation at Advancing Jordan's national biosecurity effort (Middle East Scientific Institute for Security) conference
 - Participation in other conferences and training opportunities
- Previously, exposures were not reported. These efforts may increase the number of reported exposures.



Lessons Learned

- Upper management commitment is critical
- To be most effective, training should include multiple methods (classroom, handbook, demonstrations, videos)
- Believe in yourself and your ability to make changes
- Teamwork is critical to accomplish progress

Issues

- Original plan was to utilize the existing Biorisk Management Committee to write/edit material
 - Biorisk Management Committee members were subject to military missions elsewhere during the project
 - Did most of the work personally on the Manual, BUT:
 - Committee helped with training on Manual
- Additional mandatory military missions assigned during the project timeline
 - New automated instruments introduced into laboratory (extensive troubleshooting and staff resistance)
 - Review of instrument manuals to provide training
 - Blood bank supervisor assignment
 - Social programs (military engagement)

Moving Forward

- Train other laboratory personnel in RMS
- Expand audience for training and Handbook to other Army facilities
- Work to expand biorisk management program to national level
- Work with the Biorisk Management Committee to implement laboratory inspections

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