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 biosafety program
- Assemble a Biosafety Management Committee to include Sandia-trained professionals
- Gain peer commitment to the biosafety program

Methodology

- The Biosafety 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

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 Biosafety Management in RMS
  - Formation of an active Biosafety 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 Biosafety 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, video)
- Believe in yourself and your ability to make changes
- Teamwork is critical to accomplish progress

Issues

- Original plan was to utilize the existing Biosafety Management Committee to write/edit material
  - Biosafety 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 biosafety management program to national level
- Work with the Biosafety Management Committee to implement laboratory inspections

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