

Guided Exercise

PPE

Goal: This exercise includes three separate activities that will be used to build upon basic understanding of PPE and Risk Assessment to teach students how to make risk-based mitigation decisions to protect themselves: 1. Give students practice identifying appropriate PPE for a particular scenario. 2. Allow the students to identify appropriate PPE substitutes when PPE is limited and/or unavailable. 3. Practice donning and doffing PPE. In addition, each activity will serve as an opportunity for students to practice the process of understanding and evaluating the risk of exposure – risk assessment. This exercise is intended for students who have a basic understanding of the principals of risk assessment and PPE.

Know:

- That a risk assessment is valuable for guiding PPE selection.
- The order in which PPE is donned and doffed is important.

Feel

- Confident in choosing suitable PPE.
- Knowledgeable about donning and doffing PPE correctly.

Do

- How to assess and evaluate the risk for PPE selection.
- Don and doff PPE to minimize the risk of exposure.

Materials:

- Instructor notes
- PPE Scenario Cards (translated)
- Flip Charts for each group
- Tape
- Markers
- Demo PPE (TBD..)
- Glow Germ
- Black Light
- Interpreter for discussion, if needed

Instructor Notes:

This exercise will primarily be inquiry driven, meaning that the students will be given some time to work on the exercise and the instructor will be there to help them work through the activities (not just give them the answers). In fact, there will not always be a

right answer, instead the goal is to get the students thinking about risk and how to practice making educated mitigation control decisions based on their risk assessment. Keeping that in mind, as long as the students have a solid rationale for why they made the decisions they did, then that is ok. It will be the role of the instructor to monitor whether the information the students are basing their decisions on is valid. For example, if a group wants to use a respirator to protect themselves against a blood-borne pathogen, likely they will not have a very good rationale for why they choose a respirator, or it will be based upon false information. In this case, the instructor would need to re-focus the group to consider the route of exposure for the pathogen and how a respirator, will provide some protection, a respirator is more appropriate for a pathogen that is transmitted via an aerosolized route. Note: the students will have a tendency to want to use “all” the PPE with the rationale that more PPE is better protection. This rational is not valid as not all PPE is always available and furthermore PPE can be cumbersome to performing everyday tasks, and could even increase the risk of exposure if not used properly. PPE is a way to decrease the likelihood of exposure – it doesn’t have any influence on consequences of exposure.

The students will be given a mock scenario, which they will use to suggest PPE mitigation controls. It is expected that not all of the students will be very familiar with the details for how each PPE option protects, so the instructors are encouraged to explain this information to them as they work through the exercise.

A key point to demonstrate is how a risk assessment can support appropriate PPE mitigation strategies. The students should be prepared to defend their PPE selection – and their answer should always be because either the risk assessment warrants it or it doesn’t. The overall goal is to have an in depth conversation about how PPE can be used properly to reduce the risk of exposure. How in depth this conversation gets will depend on the background and student interest.

Time	Step: Description of Activity	Notes
5 min	1. Introductions. Review Goals, Objectives, timeframe	Verbally review the goals of the exercise as well as the objectives listed above - read
15 min	2. Introduction to PPE and Scenarios 3. Have one of the instructors “dress up” in as much PPE as possible. Tell the students that the person is collecting a field sample from a suspected anthrax case. Ask the students “What is wrong with this?” – Lead a guided discussion, prompting the students to ask questions to see if all the PPE is really necessary and what other considerations there may be.	<p>It should be obvious that the person is overdoing it in terms of PPE, but this will prompt the question of what is appropriate and then the instructor can lead the students into how to choose appropriate PPE for this scenario.</p> <p>Expected responses for the “What’s wrong with this?”: This will lead into a discussion where the students should ask why are they wearing the</p>

	<p>4. Next ask “What should they wear?”</p> <p>5. The next part of the discussion should emphasize the point that PPE also needs to be useful in that basic tasks still need to be preformed in the PPE and that this should be a consideration as well. For example, picking up a phone, writing notes, bending down.</p>	<p>PPE that they are. The goal here is to emphasize that more is not always better or needed – based on the risk. Answers will vary but as long as the protection to/from are reasonable (ie not a respirator for a blood borne pathogen) it is ok. Factors that should be considered will be: cost, availability, ability to disinfect/dispose of PPE, technical skills needed to use the PPE, and ergonomics. The instructor should then re-dress according to what the class decides is necessary.</p>
20 min	<p>6. Introduce the second activity – PPE for a Scenario (limited availability) – Now the students will be provided a scenario for which they need to chose appropriate PPE – in a “real world” situation (not all PPE will be available)</p> <p>7. Students will have 15 minutes to identify which PPE would be appropriate for their scenario. Ask them to keep track of their rationale for picking each piece of PPE as they will be presenting a group member dressed up in the PPE that they have chosen.</p> <p>8. Have each group present their group member dressed up in the PPE plan and some things that influenced their PPE choices.</p> <p>9. Ask other groups to provide feedback to the group regarding their decisions. They may pick up some weak rationales and the class can discuss the best choice.</p> <p>10. Instructor reviews key messages before moving on to the next activity.</p>	<p>Instructors will pass out one scenario and students will be allowed to pick actual PPE to use.</p> <p>Expected responses: Answers will vary but as long as the protection to/from is reasonable (ie not a respirator for a blood borne pathogen) it is ok.</p> <p>The main idea here is to build upon the previous demonstration, letting the students work through the process of selecting PPE for their scenario – and factoring in a number of considerations to come up with their final solution.</p> <p>Feedback on the group read-outs should emphasize a risk-based approach to deciding what PPE to use. If a group is off base – ask another group if they would have done something differently, and if so what – and they may have a more solid rationale.</p>
30 min	11. Introduction to third activity –	Instructors make sure the order is

	<p>Donning and Doffing.</p> <p>12. Students will be given 15 minutes to come up with a plan for safe donning and doffing of the PPE selected in the previous activity.</p> <p>13. They will list the order on their flip charts.</p> <p>14. Once the students have their plan set each group will have a chance to practice their donning and doffing technique. Allow one member of each group to don the PPE and then the instructor should place some “glow germ” on the person’s hands and then ask them to doff the PPE. Afterward the person will be inspected to see how much “contamination” was left on the person after doffing – hopefully very little if not, then the procedure needs to be revised.</p> <p>15. Instructor reviews key messages before moving on to the next activity.</p>	<p>logical and that it will not spread contamination.</p> <p>Background information for instructor: Order of donning is important because: Some PPE needs to go over the top of others. For example, 1st pair of gloves under the gown cuffs, second pair of gloves over the gown cuffs. If using a PAPR does the filter/battery belt go over or under the laboratory gown?</p> <p>Order of doffing is important because: It is important to recognize that PPE may have become contaminated and the doffing order can help to avoid contamination coming in contact with uncontaminated skin. Also, how the PPE is removed (turning contaminated side outside to in and avoid touching or coming into contact with contaminated surfaces). Recognize that removing PPE could result in generation or re suspension of aerosols so if wearing a respirator is should be the second to last item removed (last item is the inner glove).</p>
10 min	16. Review Plenary Discussion – Ask the students what they learned, what it means, and where to go from here?	Instructors will ask for any additional questions and answer them. If additional questions exist – they can be put in the parking lot and addressed at a later time.
90 min total	Evaluation - Dismiss	Pass out Level 1 evaluations KFD for the students. After activity Instructors will fill out Level 2 evaluations.

Scenarios:

1. Interviewing a person potentially infected with a highly infectious unknown agent.
2. Collecting field patients suspected of being infected with *Salmonella typhi*.
3. A biological bacterial spill in a laboratory studying *Yersinia pestis*.
4. First responders on site to help an injured laboratory worker who has fallen ill in a lab studying influenza.