

Cataract University Scenario

Amil works in a Biosafety Level 2 research lab at Cataract University studying anthrax vaccines. He recently visited the emergency room with a serious skin infection on his neck. Doctors determined this infection was caused by *Bacillus anthracis* and started treating him with antibiotics. He is expected to make a full recovery.

Amil was surprised to learn of this diagnosis because he only works in the lab with the Sterne strain of *Bacillus anthracis*, a non-lethal strain used to vaccinate animals. Although the high containment lab in the adjacent building works with the fully virulent strain, Amil never enters there.

Upon learning of the infection through the news, the lab director asked for a study to be done to determine what went wrong and whether or not Amil contracted the agent in the lab. Amil reported that he had been working with Barbara two weeks prior to grow up cultures of the non-lethal, live vaccine strain. Barbara was working in the Biological Safety Cabinet (BSC) to prevent contamination. After transferring a small amount of broth culture to a micro-centrifuge tube, Barbara sealed the tube and wiped it down with alcohol before transferring the tube to Amil, who placed the tubes in a labeled container and walked them down the hallway to put them in a common use refrigerator. Amil was not wearing gloves during the process as he explained "I was not directly handling the agent and Barbara was wiping them down with alcohol so I did not think there was anything to worry about." Neither researcher was aware of the fact that alcohol would have little effect on *Bacillus* spores.

The lab director suggested that the cultures in the lab be tested to determine whether or not the strains were indeed the vaccine version or the fully virulent strain. However, the samples turned up missing after a search of the common refrigerator where they had been stored. No one is sure what happened to them. The custodian cleaned out the refrigerator the week before and may have inadvertently tossed them in the trash but he does not remember. Fortunately, Barbara saved some of the stock solution and upon testing was surprised to find that it was the fully virulent strain of *B. anthracis* and matched the strain that was cultured from Amil's lesion. Barbara had ordered the vaccine strain from Acme Labs several months ago.

When questioned about the possibility of sending the wrong strain to Cataract University, a manager at Acme lab reported that it is very unlikely because they only shipped the virulent strains to labs that are registered with Acme and Cataract was not registered. However, the manager did concede that their shipping supervisor happened to be on vacation when the shipment was sent to Cataract so some of the records were not kept during that period.