

CENTRIFUGE BIOSAFETY IN BL2 RESEARCH LABORATORIES & UPGRADES – CASE STUDY

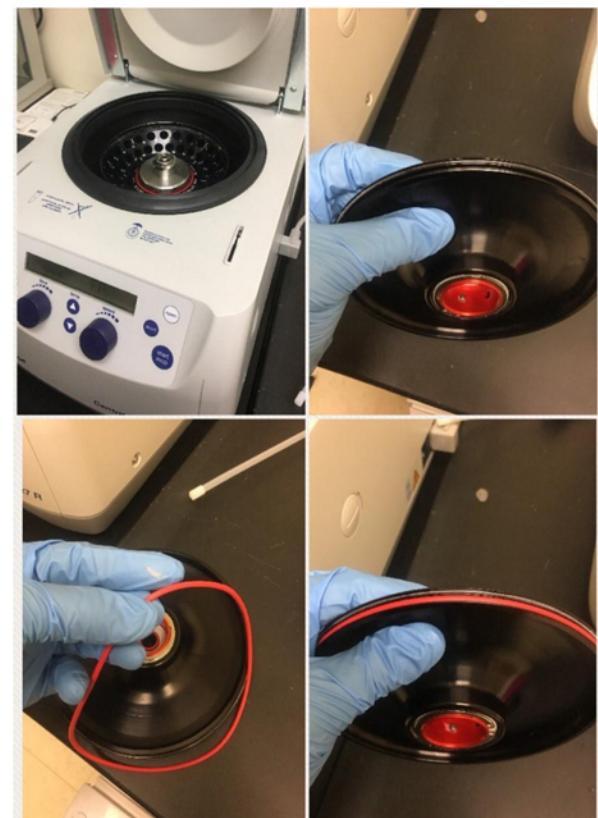
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Abstract

Health care facilities around the world employ over 59 million workers at risk of occupational exposure to blood borne pathogen (BBP) infections from work with human blood, tissue and other potentially infective material (OPIM). Researchers at Dana-Farber Cancer Institute (DFCI), routinely use human primary samples and compliance with the OSHA Bloodborne Pathogen Standard is required. OSHA requires containment for centrifugation of human samples. An audit identified centrifuges that lacked safety caps, gaskets or required repair. To save time, funds were requested by biosafety to order the required accessories and repair. The users were educated on proper use when the parts were delivered.

Objectives

- (1) Compliance with the OSHA Bloodborne Pathogen Standard 1910.1030 containment equipment section (e)(2)(iii)(A), requiring centrifuge safety cups, sealed centrifuge rotors... shall be used for all activities with other potentially infectious materials that pose a threat of exposure to droplets, splashes, spills, or aerosols.”
- (2) Improvement of centrifuge safety/biocontainment procedures
- (3) Use of a consolidated biosafety response to address problems flushed out with an internal audit.

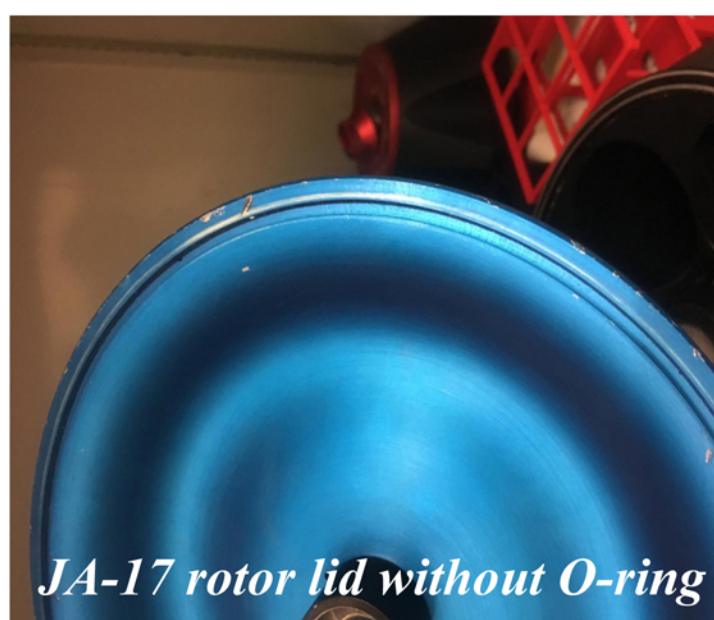


Method

254 biological research registration documents were reviewed to determine the number of laboratories centrifuging human primary samples. A list of 167 labs in 9 buildings was generated. 145 centrifuges were checked to verify that safety bucket covers were available & functional gaskets were present on sealed rotors. Quotes were obtained for needed bucket covers, gaskets and safety features from 5 vendors and funds were requested and approved.

Results

Out of 145 centrifuges, 71 required bucket covers, gaskets (O-rings) or lid support repairs. Supplies were delivered and training provided to laboratory staff at that time. Stickers were applied to centrifuge lids to reinforce of proper practice. Unexpected findings included discovery of an obsolete centrifuge with no safety engineering. The unit was immediately confiscated and a new replacement centrifuge ordered. Two centrifuges had defective lid hydraulic support arms and were located under shelves so the lid could not be opened completely. These support arms were replaced and either the shelf above was removed or the table was lowered.



Acknowledgements

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Pls	88		
Buildings	9		
Rooms	139		
		CLSB	6
		Dana	43
		Mayer	31
		Dry Dock	6
		Jimmy Fund	12
		Smith	24
		HIM	5
		Longwood	11
		Burlington Ave	1
		Total rooms	139
Centrifuges	145		Need covers
		Legend	78
		Sorvall/Thermo	
		Beckman	33
		Eppendorf	31
		Hermle	2
		Nuwind	1
		Total centrifuges	145
			71



Conclusion:

This exercise generated goodwill with the laboratories and improved both regulatory compliance and centrifuge use safety.

