

**Laboratory Safety Improvement Recommendations
Progress as of July 1, 2015**

CDC, Report on the Potential Exposure to Ebola Virus, February 4, 2015

	Recommendation	Completed	Pending Actions
Ongoing CDC laboratory safety improvement efforts			
1	<i>Leadership should ensure full understanding and implementation of previously recommended laboratory safety improvement actions, including 1) the completion of a Material Transfer Certificate (MTC) for transfer of any material from high containment laboratories to lower biosafety level laboratories and 2) appropriate secondary verification of critical safety control points, including additional installation of camera systems for review and verification of critical steps in a protocol</i>	✓	
Recommendations for the CDC Viral Special Pathogens Branch (VSPB)			
2	<i>Enlist a team to evaluate preparations that have been performed by the laboratory technicians involved in this incident to confirm that similar errors related to processing the wrong tubes for nucleic acids did not occur.</i>	✓	
3	<i>Identify a designated, senior scientist who understands the scientific basis for the procedures used in both the diagnostic and research activities of the Branch, maintains select agent compliance, ensures appropriate competency-based training, and serves as a resource for scientists if they have safety or security questions.</i>	✓	
4	<i>Ensure mission-critical work is not affected when key leaders are deployed or on detail to support other public health priorities.</i>	✓	
Recommendations for CDC's high containment laboratories (HCL)			
Note: Implementation and timelines for VSPB and broader implementation in other HCLs are addressed separately.			
5	<i>Work with CDC scientists from HCLs to establish a peer-review system of written research plans to foster critical thinking on how to optimize workflows and minimize error.</i>		VSPB: Protocols pending LSRB approval. HCL: Finalize and implement plan.
6a	<i>Enhance standard operating procedures for materials intended for inactivation and removal from laboratories.</i>		VSPB: Complete.

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	<i>Ensure that all materials are in standard, appropriately labeled tubes</i>		HCL: Finalize and implement plan.
6b	<i>Ensure the use of multiple, redundant visual safeguards (e.g., coloring for liquids, distinctive size and shape specimen handling and storage containers) so that laboratory staff can more easily determine that the correct material is being taken out of a high containment laboratory.</i>		VSPB: Complete. HCL: Finalize and implement plan.
6c	<i>Establish a requirement that inactivation procedures for a single protocol be performed or, at a minimum, checked by a single, highly trained individual within that team who understands the scientific reasons for each step of the procedure, unless exceptions are reviewed and cleared by a supervisor.</i>		VSPB: Complete. HCL: Finalize and implement plan.
6d	<i>When possible and not detrimental for the end use of the materials, samples coming out of the BSL-4 laboratory should undergo gamma irradiation sufficient to inactivate any virus present. Materials not irradiated should require extra attention to verification of the inactivation procedures employed</i>		VSPB: Complete. HCL: Finalize and implement plan.
7	<i>Enhance safety for individuals working in the BSL-4 laboratory outside of normal work hours by 1) establishing an on-call system to ensure after-hours availability of a BSL-4 supervisor or designee and 2) developing a standard operating procedure that requires laboratory staff entering the BSL-4 laboratory after hours and on weekends to inform the on-call individual of their plans, and contains steps to ensure that laboratory staff have exited safely.</i>		VSPB: Document and implement approved procedures. HCL: Finalize and implement plan.
8	<i>When possible, scientists should not work in the BSL-4 laboratory unaccompanied.</i>		VSPB & HCL: Evaluate solutions to implement proposed recommendation.

