Viral hemorrhagic fever (VHF) is caused by infection with one of over 25 different lipid-enveloped viruses, including Ebola, Marburg, and Lassa. These viruses pose a threat not only to infected persons, but also to healthcare workers, laboratorians, and researchers in potential contact with blood and other bodily fluids. Although specialized Biosafety Level 4 laboratories have been developed for researchers to safely manipulate these viruses and diagnose VHF, few standard clinical laboratories have these resources, putting workers at clinical laboratories at risk. However, various means of inactivation of lipid-enveloped viruses have been reported that may help protect workers in clinical laboratories, including solvent/detergent combinations (Triton X-100/TnBP/Tween 80), heat, gamma-irradiation, formalin, psoralens, and UV light. However, since the point of testing in clinical laboratories is to measure parameters important in guiding clinical management, it is important to understand the effect of the various inactivation techniques on each parameter in question. We performed a study to evaluate the effects of proven or assumed virus inactivation techniques on clinical laboratory parameters commonly measured in the blood and useful in the treatment of patients with VHF, including complete blood count cells, electrolytes, and chemistries, including coagulation parameters. Each parameter is measured before and after the inactivation step on the Piccolo Xpress blood analyzer (Abaxis Co.), a point-of-care instrument, and the percent change noted. Triton X-100/TnBP/Tween 80 has minimal effect on tested clinical parameters. In contrast, there were significant changes on each parameter in question. We performed a study to evaluate the effects of the various inactivation techniques on clinical laboratory parameters commonly measured in the blood and useful in the treatment of patients with VHF, including complete blood count cells, electrolytes, and chemistries, including coagulation parameters. Each parameter is measured before and after the inactivation step on the Piccolo Xpress blood analyzer (Abaxis Co.), a point-of-care instrument, and the percent change noted. Triton X-100/TnBP/Tween 80 has minimal effect on tested clinical parameters. In contrast, there were significant changes.