COMBATTING EMERGING BIOLOGICAL THREATS – PREPARING FOR THE FUTURE TODAY

Empirical Research In Biosafety

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In this session, we will present data from our empirical work in biosafety and our work exploiting existing data sets to inform biosafety. Overall, we hope this talk will illustrate how relatively simple experiments in biosafety can be conducted to close longstanding data gaps in biorisk management. We will discuss our methodological framework for studying aerosols generated by laboratory accidents, and present information on the aerosols produced by dropping microtiter plates and tissue culture flasks. Also in the physical sciences, we will present data on the rate that conical centrifuge tubes leak and the frequency that splashes occur when opening microcentrifuge tubes via various opening methods. We will discuss the rate of spills and splashes when pipetting as drawn from experiments using volunteers and blinded samples in clinical laboratories. We will describe factors that influence this accident rate including workload and experience of the researcher. Interestingly, this experiment also sheds light on the ability of the researcher to know when they are making mistakes and take corrective action. We will present data on the rate at which needle sticks can be expected in the laboratory. We will examine how biosafety findings are distributed amongst laboratories in several institutions and what can be learned about the culture of biosafety.