



Contribution ID: 427

Type: Oral presentation

FLUPREP: A National Early-Warning System for Emerging Influenza Threats

Tuesday, October 6, 2026 1:19 PM (9 minutes)

Influenza A viruses (IAVs) frequently breach species barriers, posing a persistent pandemic threat. Mitigating this threat requires systems capable of detecting high-risk strains at the animal–human interface and implementing targeted countermeasures before human spillover occurs. Although international frameworks like TIPRA or IRAT routinely assess IAV risks, data gaps and lengthy consensus-building can hamper national preparedness. Hence, Germany needs its own rapid early warning system for emerging influenza threats. To fill this gap, we established FLUPREP, a national One Health consortium funded by the BMFTR. Uniting six core partners—RKI, Charité Berlin, FLI, University of Münster, University Medical Center Freiburg, and LGL—FLUPREP seeks to proactively characterize IAVs emerging at the human–animal interface to generate comprehensive risk profiles that drive evidence-based pandemic preparedness. Central to FLUPREP is an integrated experimental pipeline that evaluates pandemic potential by quantifying key risk factors, such as human-type receptor specificity, airborne transmissibility, and resistance to diverse immune barriers. The measured data are then converted into a pandemic risk score calibrated against contemporary and historical IAVs. Graded risk score thresholds will act as actionable triggers, enabling local, state, and federal authorities to scale response measures from routine surveillance to emergency protocols, securing Germany’s future pandemic resilience.

Keywords

FLUPREP, Pandemic Preparedness, Influenza A Virus, Pandemic Potential, Lab Testing

Registration ID

212

Professional Status of the Speaker

Professor

Junior Scientist Status

No, I am not a Junior Scientist.

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Session Classification: Session 7: Research consortia on the topic of “Pandemic prevention and response within a One Health framework”

Track Classification: Research consortia on the topic of “Pandemic prevention and response within a One Health framework” (only for the Pandemic networks currently funded by the BMFTR)