VEO- Versatile Emerging infectious disease Observatory

Researchers will build a Versatile Emerging infectious disease Observatory (VEO) for the generation and distribution of high-quality actionable information for evidence-based early warning, risk assessment and monitoring of Emerging Infectious Diseases and Antimicrobial resistance. This is an iterative process between data science and technology experts, disease experts, social scientists, and citizen scientists. The platform will support mining, sharing, integration, presentation and analysis of traditional and novel data sources, integrating both publicly available and confidential data. VEO will be (co)designed and tested through five scenarios, reflecting main pathways of disease emergence, to attune developments to the needs of its intended users, and obtain proof-of-principle of utility, including ethical, legal and social implications.

Our vision is to establish a Versatile forecasting, nowcasting, and tracking system (VEO) serving as an interactive observatory for the generation and distribution of high quality actionable information for evidence-based early warning, risk assessment and monitoring of Emerging Infectious Diseases and Antimicrobial resistance by public health actors and researchers in the One-Health domain.VEO will be built by an iterative process between data science and technology experts, disease experts from public health and academia, social scientists, and citizen scientists. The VEO data platform will support mining, sharing, integration, presentation and analysis of traditional and novel 'Bio data' with a range of "Contextual data", integrating publicly available and confidential data.
The VEO analytical platform will support data-intensive interdisciplinary collaboration of geographically distributed international teams, co-creation of novel advanced analytical solutions, and involving citizen scientists through crowdsourcing of specific challenges. In addition, we will develop workflows to integrate high density laboratory data (genomics, phenotyping, immunomics) into the VEO system and into risk assessments. The VEO system is (co)designed and tested through five complementary use case scenarios, reflecting main pathways of disease emergence, to attune developments to the needs of its intended users, and obtain proof-of-principle of utility, including ethical, legal and social implications.

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