

PAIR

The PAIR Project: Charting Epidemic Frontiers with One Health Precision

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CHALLENGE

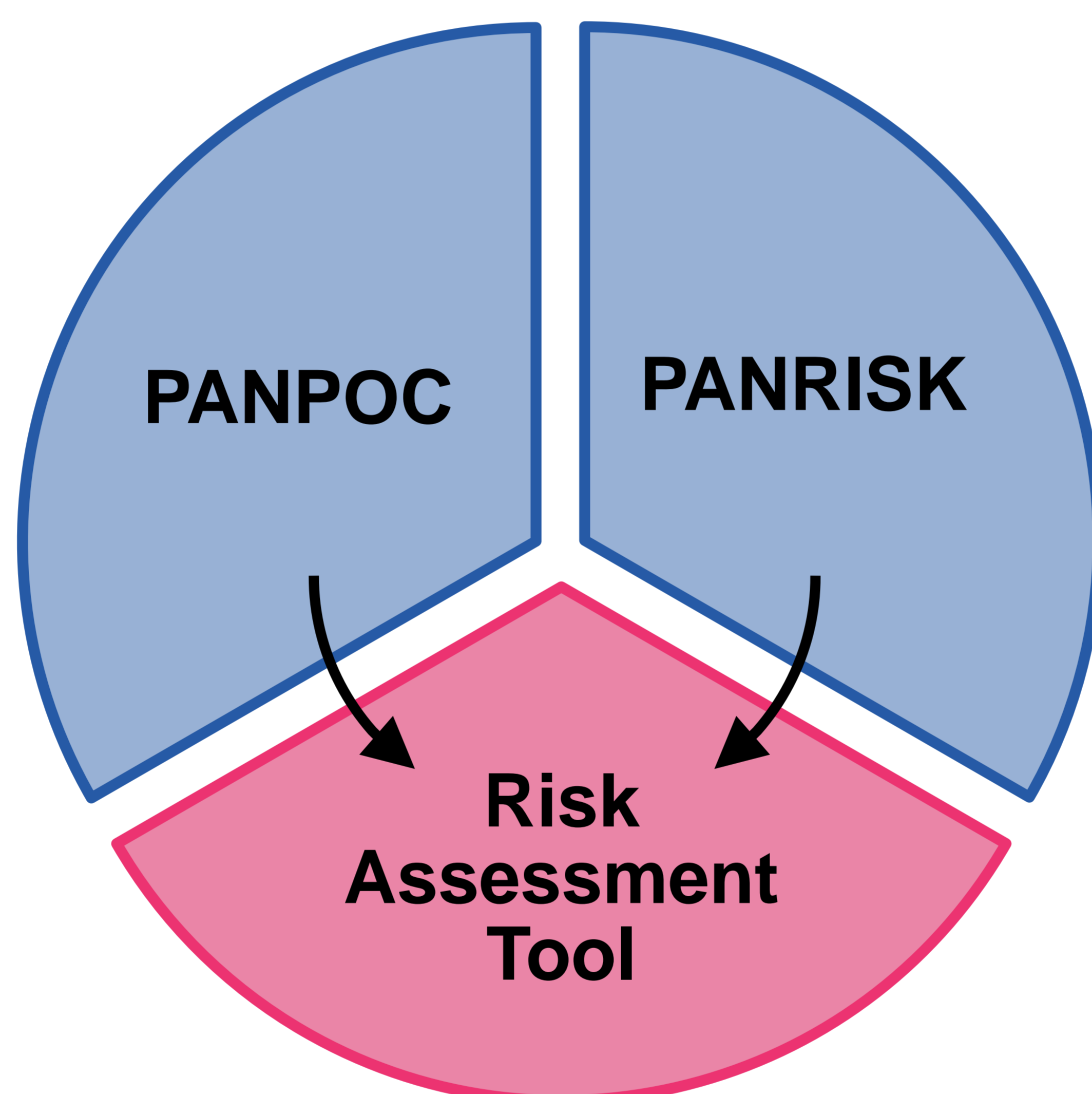
Globalization has rapidly increased the risk of pandemics with zoonotic origin. Thus, there is a urgent need for fast and effective **decision-making on new outbreaks**. A fundamental requirement for this is **rapid clinical identification** and **epidemiological evaluation** of emerging threats. To reach this goal, it is necessary to include one health expertise spanning healthcare, technology, epidemiology, social sciences, and policy.



In the PAIR project (2024-2028) **20 partners** from **9 countries** are involved. The project contains two working teams, PANPOC and PANRISK

PANPOC

Development and validation of our diagnostic **point-of-care** instrument PANPOC, utilizing a fluorescence-based detection system. This ensures rapid and reliable **detection** of respiratory RNA viruses, including the target viruses **Avian influenza**, and **SARS-CoV-2**. Designed to be portable and user-friendly, this detection unit can be deployed in healthcare facilities or field settings, enabling diagnosis within **15 minutes**.



PANRISK

In the PANRISK part, an AI-based predictive modeling platform will be developed to estimate the risk of **1) spillover to humans, 2) risk of spatial epidemic spread** of a virus, and **3) risk of temporal epidemic spread**. This will enable us to utilize data from PANPOC to forecast the spread of target viruses. This will strengthen timely responses to public health threats on a global scale.

Risk Assessment Tool

The outcome of the project will be a risk assessment tool to continuously evaluate the potential for an epidemic spread. The users will be decision makers for human and animal health. Risk assessment results can be used to direct further sampling with PANPOC.



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SOLUTION

Both PANPOC and PANRISK will be deployed and validated in multiple countries and settings, facilitating **rapid and reliable detection of viruses** while predicting their **potential for causing future epidemics**. This **risk assessment tool** will drive policy alignment and ensure a fast and effective response to **pandemic preparedness**.

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