

## Prevention of pandemics

**Volkswagen Foundation to fund international research project with around 1.5 million euros. Interdisciplinary team led by the Institute for Global Health at Heidelberg University Hospital to research the transmission of pathogens from animals to humans in Thailand and Laos. Long-term goal is to develop sustainable preventive measures against future pandemics.**

Suddenly everything was different: everyday life was restricted, the healthcare system overloaded, the economy faltering and millions of people falling ill within a short period of time. The culprit was a pathogen that originally came from wild animals - a zoonosis, as experts call it. "COVID-19 has shown how urgent it is to develop sustainable strategies for pandemic preparedness and prevention," says Professor Dr. Joacim Rocklöv of the Heidelberg Institute for Global Health at Heidelberg University Hospital (UKHD) and Interdisciplinary Centre for Scientific Computing (IWR) of Heidelberg University. The expert in infectious disease epidemiology and modeling is leading the project "Preventing pandemic risk by improving pandemic literacy among communities at the frontline of disease emergence in Southeast Asia," or PANDA. The research work is funded by the Volkswagen Foundation with almost 1.5 million euros over a period of four years. In communities along the northern Thai-Laotian border, a hotspot area for zoonotic disease emergence, the scientists want to study the transition of pathogens from animals to humans and develop and test prevention measures.

Experts agree that zoonotic diseases have the potential to cause pandemics at any time, threatening global health as well as economies. "Current approaches that explore the origin of such animal-borne infectious diseases cannot comprehensively represent the mechanisms of pathogen transmission. However, this is necessary to develop effective and sustainable strategies for prevention," explains Rocklöv, a Humboldt professor.

The focus is on regions along the Thai-Laotian border because transmission of pathogens from animals to humans occurs regularly there. One of the reasons for this is that the growing world population is opening up new settlement areas and agricultural land, for example by cutting down virgin forests. In this way, natural barriers disappear, increasing interactions between wildlife and humans. In many regions of the world, people also consume any protein foods, which is why the meat of exotic animals is often on the menu.

The studies in Thailand and Laos are being conducted by a team of researchers from the universities of both countries. In selected villages, the scientists will study the virological and ecological correlations as well as the social factors. The Heidelberg team led by Prof. Rocklöv is coordinating the project, planning studies, evaluating data and deriving prevention strategies.

### What increases the risk of virus transmission from animal to human?

Among other things, the researchers want to take swabs and blood samples from wild animals as potential virus carriers. Genetic engineering methods will be used to identify those pathogens that are present in the animal hosts and their tissues and could become dangerous to humans by consuming the meat of these animals. In addition, the project is looking for answers to the following questions: How does intensive land use by humans affect wildlife? Which behavior of the people living there favors zoonotic infections? Where and how do transmissions occur?

To find out more about risk behaviors, interviews and observational studies are being conducted. "With this, we want to better understand what local people know or don't know about infection risks and how cultural factors influence their behavior," explains Dr. Marina Treskova epidemiologist and co-leader of PANDA. "All information about potential animal hosts harboring highly dangerous viruses and the results of the interviews and observational studies will inform the development and implementation of a pandemic preparedness and prevention intervention. PANDA will evaluate the implementation and effectiveness of this measure," explains Professor Till Bärnighausen, director of the Heidelberg Institute of Global Health and also PANDA project leader. "Our goal is to have sustainable strategies based on all this evidence that can be applied beyond local communities."

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**Press release**

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Source: Heidelberg University Hospital

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**Further information**

- ▶ Heidelberg University Hospital
- ▶ Heidelberg Institute of Global Health (HIGH)