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PRESS RELEASE

Geneva | 28 March 2024

A world network to monitor coronaviruses

A Swiss collaboration has been designated a member of the WHO's CoViNet network for the detection and surveillance of coronaviruses.

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CoViNet - CoronaVirus Network - is an international research network for the early detection, analysis and monitoring of coronaviruses worldwide. Set up by the World Health Organisation (WHO) and already operating in 20 countries, it now includes the Centre for Emerging Viral Diseases at the University of Geneva (UNIGE) and the Geneva University Hospitals (HUG), as well as the Swiss Federal Institute of Virology and Immunology (IVI), which is collaborating with the Vetsuisse Faculty of the University of Bern (UNIBE). This joint designation is part of a long-standing partnership between the WHO and these institutions. The members of the CoViNet met in Geneva on 26 and 27 March to define their strategic priorities and coordinate their actions.

The COVID-19 crisis, with its 7 million deaths worldwide, showed the importance of early detection for the effective implementation of public health policies. It brought the word 'coronavirus' into everyday vocabulary, but SARS-CoV-2 is by no means the only one in this family to threaten human beings.

Launched in early 2024, the WHO CoronaVirus Network (CoViNet) aims to detect, monitor and carry out in-depth genetic analyses of coronaviruses and their variants in humans and animals. The network is currently deployed in 20 countries on five continents. It will enhance risk assessment, information exchange and preventive measures against emerging or circulating coronaviruses. Its work will inform the WHO's actions and political decision-making at national as well as global level.

The UNIGE and HUG Centre for Emerging Viral Diseases and the Institute of Virology and Immunology (IVI) are joining CoViNet today. The two institutions have been working together since 2020 on the study of coronaviruses. Together, they will be working on new variants and on the effectiveness of the vaccines available to combat them. The work of the two teams will be based on the integrative One Health approach, which aims to balance and sustainably optimise the health of people, animals and ecosystems.

Sharing skills

The UNIGE and HUG centre will focus on new viruses emerging in humans. "We want to better understand the evolution of the virus. Since 2021, we have been coordinating national surveillance of SARS-CoV-2 throughout Switzerland. Our research aims to understand whether and why new variants of the virus escape antibodies from vaccines or infection, and whether diagnostic tests still give reliable results," explains Isabella Eckerle, co-director of the centre, who will be leading CoViNet's Geneva-based activities.

The IVI team, in collaboration with UNIBE's Vetsuisse Faculty and the UNIBE's Multidisciplinary Center for Infectious Diseases (MCID), will focus on the emergence of these viruses in humans and animals. It can draw on many years of cutting-edge research into coronaviruses and the fundamental mechanisms by which our immune system interacts with the virus. "The aim of our activities is to assess the risks associated with coronaviruses and their variants. In particular, which viral genes can make the variants more dangerous or allow them to evade our defences," explains Volker Thiel, head of the Division of Virology at the IVI and professor at the Vetsuisse Faculty at UNIBE.

Isabella Eckerle is an associate professor in the Department of Medicine at the UNIGE Faculty of Medicine, and co-director of the Centre for Emerging Viral Diseases (UNIGE-HUG). She specialises in zoonotic viruses, in particular coronaviruses. During the COVID-19 pandemic, her research team was one of the WHO reference laboratories for the development and validation of diagnostic tests in Switzerland. It has participated in several expert groups.

Head of the Division of Virology at the Institute of Virology and Immunology (IVI) and professor at UNIBE, Volker Thiel specialises in the biology of coronaviruses. He has carried out a wide range of research, particularly into their replication and associated immune responses. During the pandemic, he was a member of the Swiss National COVID-19 Science Task Force and is currently a member of the WHO Technical Advisory Group on SARS-CoV-2 Virus Evolution.

A necessary evolution

The CoViNet network is an extension of the "reference laboratories" designated by the WHO from 2020, to which the UNIGE and HUG Centre for Emerging Viral Diseases has been included in 2023. Their initial mission was to provide tests to countries with little or no capacity in this field. Since then, the need to monitor the evolution of the virus and its variants has become imperative, and with it the need to broaden the objectives of these laboratories to include animal health and environmental monitoring. To create this new network of laboratories, a CoViNet call for applications was launched by the WHO in autumn 2023.

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