The EU has invested heavily in research to improve epidemiology, modelling and monitoring systems in response to infectious disease outbreaks, such as the COVID-19 pandemic. Research and innovation, and collaborating with our partners worldwide, remain vital to tackle global health threats."

Mariya Gabriel, Commissioner for Innovation, Research, Culture, Education and Youth

A health threat emerging anywhere on the planet can quickly affect the rest of the world. Infectious diseases now spread faster and farther and know no borders. That is why the rapid development of health technologies right from the outset of an emerging infectious disease outbreak is vital. This was highlighted when Ebola struck in West Africa in 2014, and is now evident again in the battle against COVID-19.

The European Commission has invested heavily into research on preparedness and response to infectious disease outbreaks, including for a public health emergency like COVID-19, by:

- Investing in developing clinical networks and research infrastructures to ensure preparedness to deliver clinical research;
- Boosting epidemiology research and modelling to develop better monitoring systems;
- Launching emergency research funding mechanisms.

The European Commission’s independent Group of Chief Scientific Advisors (GCSA), the European Group on Ethics in Science and New Technologies (EGE) and Peter Piot, special advisor to the President of the European Commission on the response to COVID-19 have been providing and continue to provide independent expert policy advice, including a joint Opinion on Improving pandemic preparedness and management and a joint Statement on scientific advice to European policy makers in the fight against the COVID-19 pandemic.
WORKING ON A EUROPEAN AND GLOBAL SCALE

The COVID-19 pandemic has confirmed the importance of planning and investing in research and innovation before a health crisis occurs. Dialogue and collaboration between relevant organisations before an outbreak is key to supporting international and national research plans and infrastructures. Some examples:

- As the need for stronger global collaboration in research preparedness became increasingly clear, the Commission, alongside other funders, established the Global Research Collaboration for Infectious Disease Preparedness (GloPID-R) network. It is an alliance of research funding organizations across the world that facilitates effective and rapid research response to outbreaks of infectious diseases by identifying priority research needs and coordinating global research efforts.

- The European and Developing Countries Clinical Trial Partnership (EDCTP), established in 2003 by the European Commission, together with European and sub-Saharan African countries, exists to accelerate the clinical development of health technologies for poverty-related and (re-)emerging infectious diseases. Two major EDCTP initiatives, PANDORA-ID-NET and ALERRT, were established to strengthen the capacities of African countries to respond to infectious diseases outbreaks.

The Commission is supporting two international clinical research networks to treat COVID-19 and other emerging infectious diseases.

- EU-RESPONSE builds on the DisCoVeRY trial originally initiated in France at the beginning of the COVID-19 pandemic, in coordination with the WHO Solidarity trial. EU-RESPONSE is focusing on the evaluation of repurposed medicines to treat COVID-19 in multi-centric clinical trials across Europe, further including new experimental treatments as new knowledge emerges.

- The newly funded RECOVER project builds on longstanding efforts towards European preparedness for epidemics, starting with PREPARE, the EU-funded Platform for European Preparedness Against (Re-)emerging Epidemics. Established in 2014 to ensure that clinical research is built into epidemic responses, PREPARE contributed to the establishment of REMAP-CAP, a research-platform designed to be adapted during a pandemic. REMAP-CAP, further supported by RECOVER, is now testing new therapeutic agents and/or supportive therapy for severe SARS-CoV-2 infection.

A key feature of EU-RESPONSE and RECOVER is their joint coordination mechanism to ensure complementarity, harmonization and synergies with other European and international initiatives in the field.

RESEARCH AND INNOVATION PROJECTS

Investing in preparedness and response actions, projects and initiatives remains a top priority for the European Commission. Some examples:

- ZAPI project works to enable a swift response to new infectious diseases by designing new manufacturing processes for delivering effective control tools against (re-)emerging zoonotic diseases.

- COMPARE project aims at speeding up the detection of and response to disease outbreaks among humans and animals worldwide through the use of new genome technology. COMPARE was launched in 2014.

- VEO project was built on parts of the partnership developed through the COMPARE project. VEO established an interactive virtual observatory for the generation and distribution of high-quality actionable information for evidence-based early warning, risk assessment and monitoring of emerging infectious diseases threats.

- MOOD project aims to develop innovative tools for the early detection, assessment, and monitoring of infectious disease threats across Europe.

Moreover, the Commission has required all Horizon 2020 consortia with research outputs that may, in any way, be used to advance the research on COVID-19, to provide immediate open access to their related publications/data. The research projects are expected to apply the principles established in the Statement on Data Sharing in Public Health Emergencies, to which the European Commission is a signatory.
NEW PROJECTS RESPONDING TO THE COVID-19 CRISIS AND FUTURE EPIDEMICS

Building on previous investments, and responding to the current and future crises, the Commission launched an emergency call (January 2020) through which 18 projects, involving 151 teams from across Europe and beyond, were granted funding. Some examples:

- The I-MOVE-COVID-19 project aims to obtain epidemiological, clinical and virological information on coronavirus and infected patients through a surveillance network. Such networks are key to be able to effectively understand and manage the spread of the virus.

- In collaboration with European Centre for Disease Control (ECDC), we aim to identify and understand the consequences of epidemic-control decisions. The EpiPose project strives to understand the social dynamics of, and the public health response to, the COVID-19 pandemic.

A subsequent call was launched (May 2020) to complement the efforts of the first call. With €128 million 23 research projects will be funded, including:

- Orchestra project is creating a new pan-European cohort applying homogeneous protocols for data collection and sharing, sampling, and follow up, which will rapidly advance the knowledge on the control and management of COVID-19.

- UnCoVer project will work with ongoing cohorts and longitudinal registries to collect new and harmonize existing data for prognosis and prediction at the individual and population levels, while laying the foundation for fast-tracked, evidence-based cross-national response to future epidemics.

HORIZON EUROPE (2021-2027)

Horizon Europe, the next research and innovation framework programme, will further build on these investments, promoting and protecting human health and well-being, for a healthier society. Capitalising on, and further strengthening, our investments in research and innovation for infectious diseases will allow us to be better prepared for future epidemics and equipped for their recovery.