Diagnostic tests are essential to detect the novel coronavirus (SARS-CoV-2) that causes COVID-19 in people and to identify those who might have acquired immunity, either by recovering from the disease or through vaccination (once a vaccine is available).

Identifying infected people quickly and reliably is crucial in order to isolate patients to prevent spread of the disease, and to give them the right treatment. This is essential to preserve life and to contain the epidemic. At the same time, identifying those who have acquired immunity allows public health authorities to better monitor the spread of the disease through the population over time. Eventually, it will also be useful to know who will require vaccination. Extensive use of tests are a crucial part of managing the pandemic, including to plan and implement exit strategies.

There are two types of diagnosis, but many different diagnostic tests. Viral detection tests determine if a person is infected by detecting the SARS-CoV-2 virus RNA (or another part of the virus), while serological (or antibody) tests detect the antibodies resulting from the body’s immune response.
Many types of viral detection tests and a growing number of antibody tests are commercially available, but with varying speed of detection, reliability, costs and ease of use. **Foundation for Innovative New Diagnostics (FIND) has an overview of SARS-CoV-2 tests.**

For both types of diagnosis, different tests (of varying quality) are currently used across the world and even within countries. This makes comparisons difficult and reduces the effectiveness of testing programmes, and thus the ability to contribute to effective patient management and exit strategies.

Diagnostic tests must be as reliable possible and give fast results, but should also be affordable and easy to use, including in some cases at the point of care or even at home. In addition, they need to provide comparable information to ensure healthcare authorities have reliable tools to detect current or past infection.

### What R&I actions is the EU already taking

The EU continues to support the development of diagnostic tests through consecutive framework programmes for research and innovation. This includes recent dedicated emergency funding for coronavirus research under Horizon 2020 which includes new projects on diagnostics, and more is expected through a special call by the Innovative Medicines Initiative (IMI) and from of the European Innovation Council (EIC) Accelerator call. This complements earlier investments including those in research infrastructures such as the European Virus Archive (EVA-Global), which provides researchers with the material needed for diagnosing coronavirus.

Since April 2020, the Commission’s Joint Research Centre is providing a positive control material to laboratories to control their coronavirus tests. This will also enable the harmonisation of tests across Europe and beyond.

A joint procurement on laboratory equipment (kits, reagents, hardware) was carried out in March and April 2020.

Also in April, the Commission issued a communication on **Guidelines on COVID-19 in vitro diagnostic tests and their performance.**