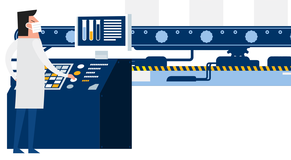
Roche

The Backbone of Health Systems: Inside the Diagnostic Supply Chain

Learn more about our healthcare supply chain that transcends geographical boundaries with the focus on providing medical diagnostics to everyone on time, even in times of crisis.



Producing Diagnostics: a Global Effort

Manufacturing

Reagents

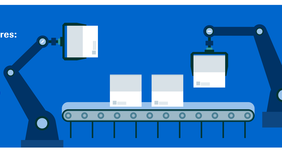
Highly specialised formulations used in the analyses of samples. The reagents used in Roche's diagnostic tests come from production facilities in Germany, China and other locations across the world that adhere to standard manufacturing practices and stringent quality standards.

The Roche Suzhou Plant in China Manufactures:

149 immunochemistry and clinical chemistry assays

22 system reagents

4 PCR media products



Instrument (Analyzer)

A medical laboratory instrument designed to measure different analytes, proteins or viruses in a number of samples (blood, nasal, urine and others) quickly. Automated analyzers require minimal human assistance.

Manufacturing of the Roche test kits takes place in the US and Germany.

Sample Collection

Obtaining samples from patients requires specific types of sample collection swabs and tubes, depending on the type of test.

Assembling

Final production of the instruments takes place in Switzerland or Japan (depending on the product). It can include approximately 23,000 components sourced all over the world, with 101 sub-assemblies and a total assembly time of approximately 450 hours each.

Shipping

The entire system must be disassembled into modules before joining the healthcare supply chain and being shipped to countries around the world.

Complexity and Scale

Building specialised equipment like this cannot be rushed, even when demand soars.

A Single COVID-19 PCR Test Can Require

20 different items including reagents, RNA extraction kits and probes.[1]

When Testing of Healthcare Supply Chains Breaks Down, So Do Health Systems

Border closures affect supply routes and cause bottlenecks in procuring raw materials.

This strains health systems and testing capacities, which can

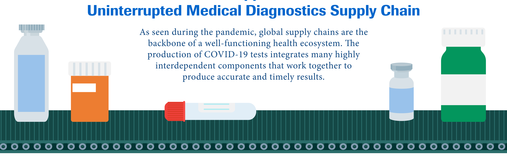
1. impact medical diagnostic delivery

2. delay treatment decisions and

3. increase the number of undiagnosed patients due to deferred routine care

A Collaborative Approach Towards an Uninterrupted Medical Diagnostics Supply Chain

As seen during the pandemic, global supply chains are the backbone of a well-functioning health ecosystem. The production of COVID-19 tests integrates many highly interdependent components that work together to produce accurate and timely results.



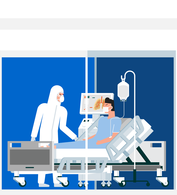
How Can a Smooth Healthcare Supply Chain Be Ensured?

Sustain Cooperation Beyond the Pandemic

Throughout the world there has been intensive cooperation among industries, healthcare providers, non-profits, governments and regulatory bodies to contain the novel coronavirus. These efforts must continue even after the pandemic to tackle other equally pressing health needs.

Protect Intellectual Property

Innovative solutions represent a commitment to advancing science. Countries should avoid implementing nationalistic measures that lay claim to essential components or Intellectual Property. We must work together as a global society to ensure the broadest possible availability of tests and test supplies to overcome the current crisis.



Craft Preparedness Strategies

Healthcare systems must develop a prioritisation strategy for medical tests, supplies and therapies, as well as a comprehensive approach to managing increased patient populations while protecting medical professionals.

1. McKinsey (2020). COVID-19: Overcoming supply shortages for diagnostic testing. Retrieved from https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/covid-19-overcoming-supply-shortages-for-diagnostic-testing#