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EUROPEAN CORPORATE COUNCIL ON AFRICA AND MIDDLE EAST

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Building bridges with Africa and the Middle East:
the role of Gruppo San Donato and GK Investment Holding Group in the future of healthcare

Covid-19 medical research

Gruppo San Donato

GK INVESTMENT HOLDING GROUP

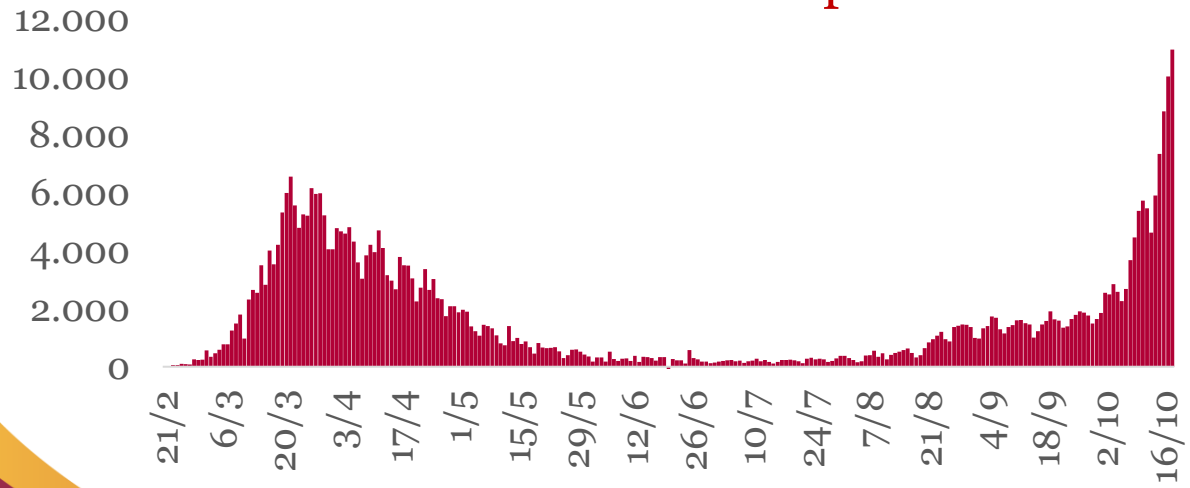
In collaboration with

The European House Ambrosetti

After the first outbreak in Wuhan, Italy became the main hotspot of the Covid-19 epidemic

In a matter of days, intensive care units were flooded with patients with an **unknown disease** for which there was **no cure and limited diagnostic capacity**

Italy Covid-19 lab tested cases,
Number of infections since patient 1



Source: The European House – Ambrosetti on Italian Ministry of Health data, 2020.

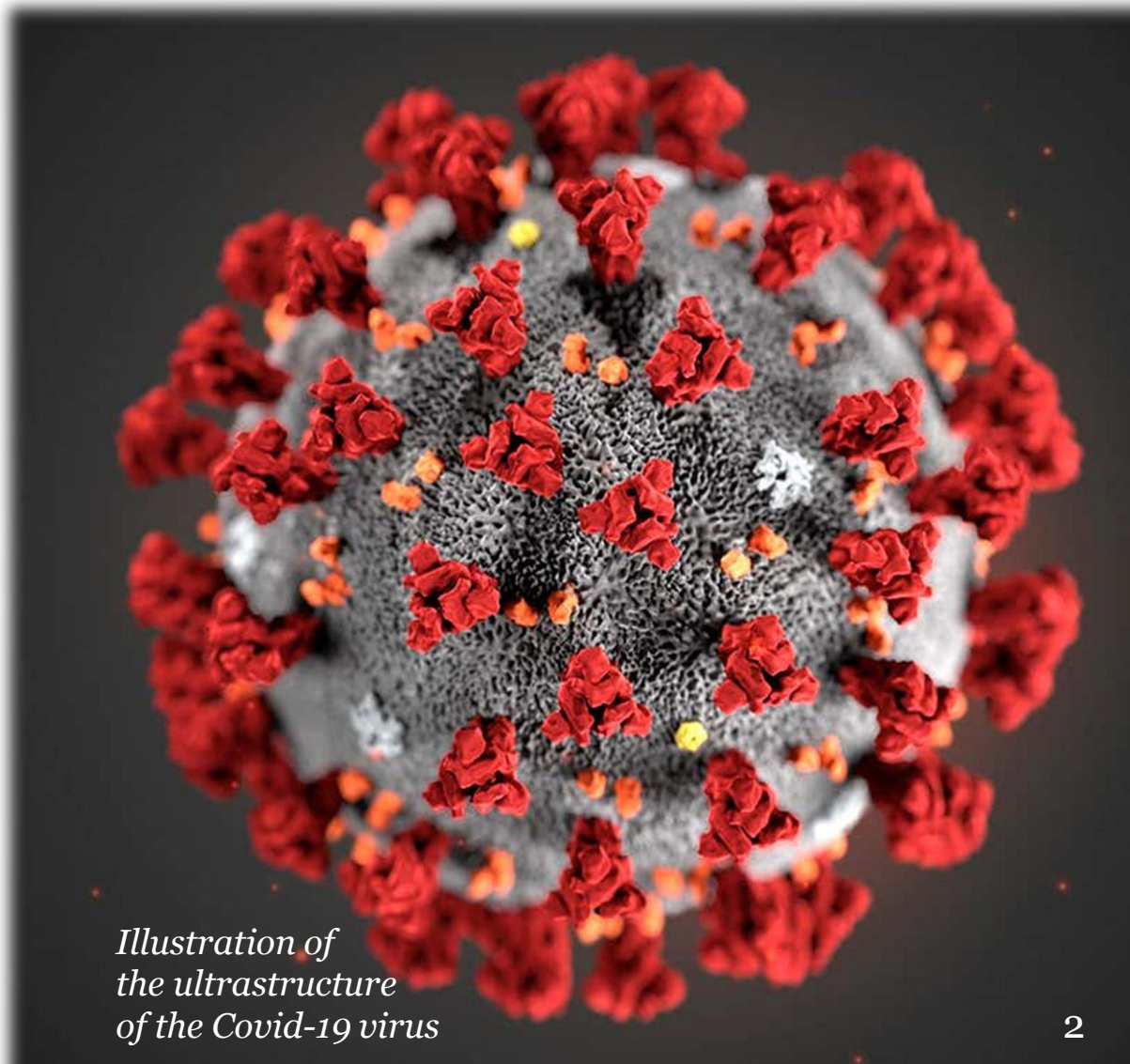
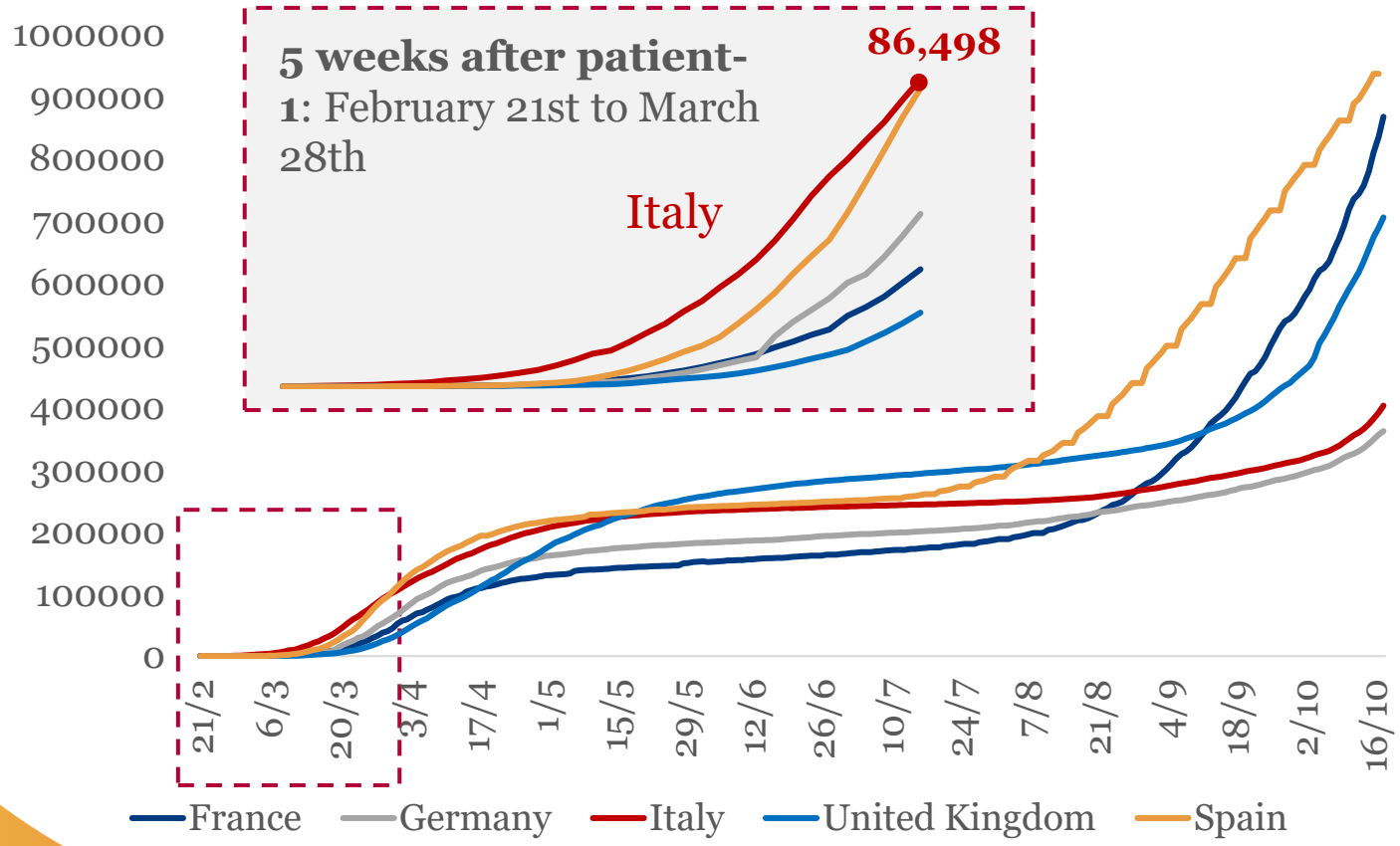


Illustration of the ultrastructure of the Covid-19 virus

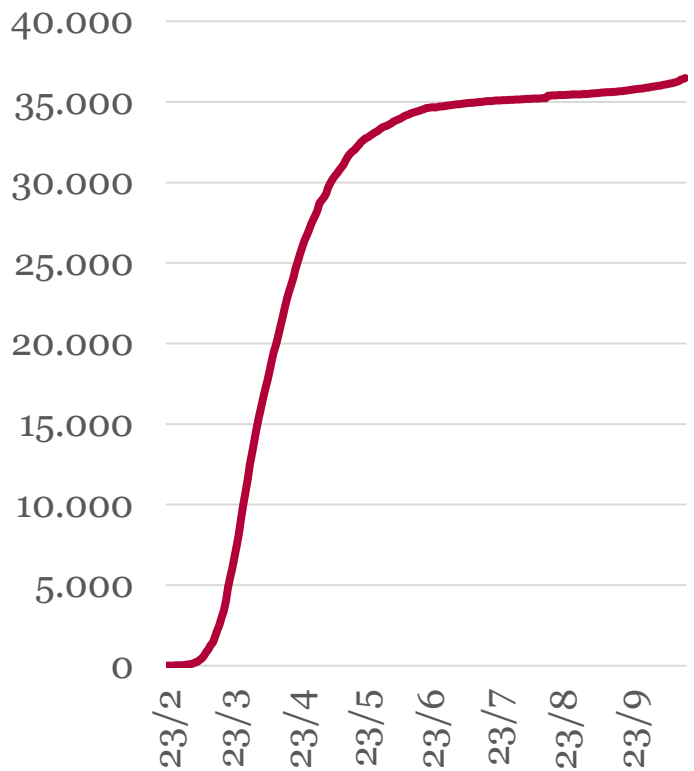
In that period, Italy faced a faster surge of infections and mortality compared to other EU countries

Covid-19 lab tested cases,
Number of infections since patient 1,main EU countries



Source: The European House – Ambrosetti on Worldometer data, 2020.

Italy Covid-19 deaths,
Number of deaths since the first one



Lombardy, the heart of the Italian economy, became one of the world's hardest hit regions

- As one of the major university and research hospitals in the region, this tragic emergency positioned us **at the frontline in the scientific battle against Covid-19**, providing us with a scientific edge to develop treatment and diagnostic capacity

GRUPPO OSPEDALIERO SAN DONATO

OSPEDALE SAN RAFFAELE

- We therefore launched our **Program Project Covid-19**, a multidisciplinary project to fill the scientific gap surrounding Covid-19 and Sars-Cov-2

	Number of Covid-19 cases	Number of Covid-19 deaths
Italy	414,241	36,543
Lombardy	126,769 **30,4%**	17,078 **46,7%**

Lombardy key figures

- **10.06 million people** (16.6% of the total national population)
- €366 billion in 2019 **(21.8% of Italy's GDP)**

Source: The European House – Ambrosetti on Italian Ministry of Health and World Bank data, 2020.

Program Project Covid-19 aimed at rapidly developing scientific knowledge and capacity with multiple goals

Program Project Covid-19 goals

Short term

Develop **evidence-based knowledge** to both diagnose and treat Covid-19 infections

Medium term

Improve our understanding of Covid-19 pathogenesis and Sars-Cov-2 characteristics, thanks to data collected from patients and to the analysis of biobanked samples

Long term

Create **BSL-2 and BSL-3 structures** to safely handle dangerous viruses and carry out projects to develop innovative antiviral treatments

The immediate goal was to develop treatment capacity to face the Covid-19 medical emergency…

Short term

Given the short timespan, we had to rely on **evidence-based medicine** through testing of a wide array of drugs and empirically building observations to face the medical emergency.

Methodology

- The project was **multidisciplinary** in its approach, involving a wide array of medical specialists

Main findings

- Covid-19 is not merely a lung infection, it is a **systemic disease** which could generate damage in a range of tissues
- Some drugs — especially antivirals and immunomodulatory drugs — are highly effective in containing early-stage infections
- **Only university and research hospitals with multiple specialized units,** working together with experimental units, can effectively develop protocols to manage Covid-19 and carry out innovative therapeutic treatments

...while in the medium-term to fill the Covid-19 scientific vacuum

Medium term

Improve our understanding of Covid-19 pathogenesis and Sars-Cov-2, thanks to data collected from patients and to the analysis of biobanked samples

In the medium-term, the goal is to improve our understanding of Covid-19 pathogenesis and Sars-Cov-2, building on **scientific**, rather than empirical, **observations**

Methodology

- Creation — and analysis — of a **biobank with >2,500 biological samples** from Covid-19 patients
- International consortium with other leading international polyclinics and top scientific institutions

Main findings

- Alongside age and pre-existing pathologies, **genetic predisposition** plays a key role in determining the severity of Covid-19 disease

GSD hospitals are at the forefront of Covid-19 scientific research

PROGRAM PROJECT COVID-19 KEY NUMBERS

123 **Clinical and experimental projects**

Covid-19 patients in GSD hospitals >6,000

Scientific publications (as of Oct. 12th) 310

Biological samples from Covid-19 patients Biobanked >2,000

Physicians and experimental scientists involved (about 50% of staff) 516

These results were possible only because of the **San Raffaele Model**

The San Raffaele Model

San Raffaele hospital was built based on the Italian IRCCS (***University and Research Hospital***) model, a large (1,000+ bed) multi-specialization facility designed to develop innovative diagnostic and therepeutic approaches by combining:

- Clinic
- Teaching
- Research

The University and Research Hospital model allows for the development of medical and **scientific excellence** in specific areas, and its maintenance over time by **cultivating human capital** through integrated education facilities

An integrated private hospital provides multiple economic and scientific benefits

Economic benefits

- Transparency
- Meritocracy
- Economic efficiency
- Critical mass

Scientific benefits

- Major integrated university and reserach hospitals can partner with each other to **push the scientific frontier**
- Only facilities with multiple specilized units interacting with each other (**multi-disciplinarity**) can effectively develop — and carry out — therapeutic treatments and research on **systemic diseases, such as Covid-19**

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Thank you!

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