

COLLEGE OF POPULATION HEALTH

***COVID-19:
Spread the Science, Not the Virus***

Lessons from Italy

May 27, 2020

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Learning objectives

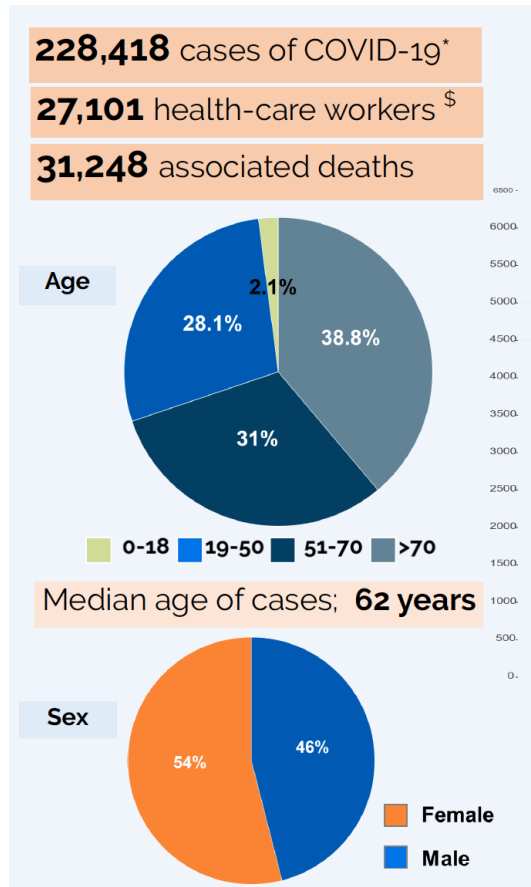
- Describe how public health and healthcare services are provided by the Italian National Healthcare System
- Define the epidemiology and pattern of the spread of COVID-19 in the Italian population
- Identify strategies that have been adopted in Italy to contain and mitigate the pandemic

Italian National HealthCare System

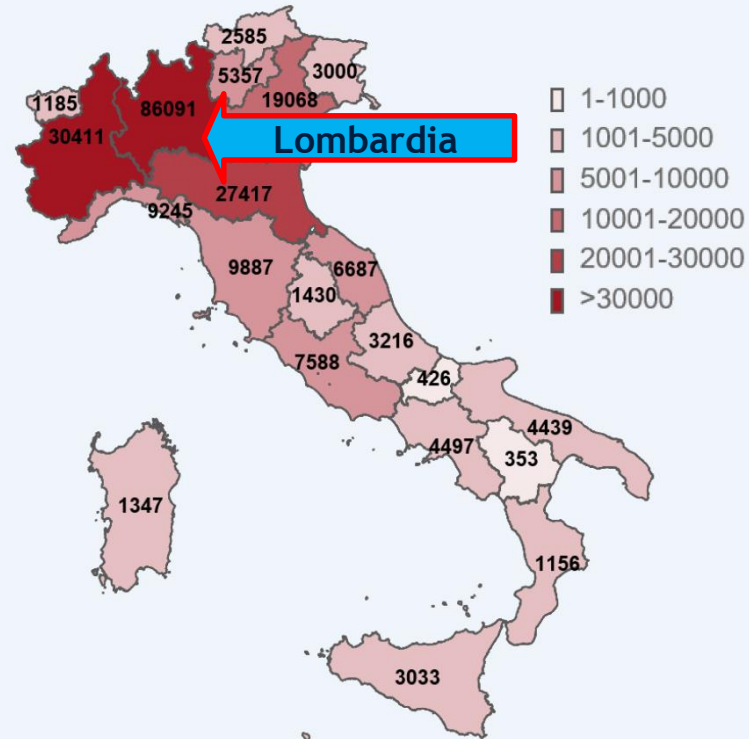


- Coverage is universal
 - Italian Constitution (art. 32) guarantees right to health care
- Financing
 - General Taxation
 - 8.8% of the GDP (2018)
- Regions (20)
 - Responsible for providing health care to residents via geographically-defined Local Health Authorities (LHAs)
 - Primary care physicians act as gatekeepers in patient treatment
 - Public hospitals (80%) and accredited private hospitals
 - Public health services provided by LHAs

COVID-19 cases in Italy as of May 21



Total number of COVID-19 cases diagnosed



<https://www.epicentro.iss.it/> The COVID-19 Task force of the Department of Infectious Diseases and the IT Service Istituto Superiore di Sanità

COVID-19 mortality in Italy as of May 21

Age (years)	Deaths [n (%)]	CFR ^s
0-9	4 (0%)	0.2%
10-19	0 (0%)	0%
20-29	13 (0%)	0.1%
30-39	61 (0.2%)	0.3%
40-49	269 (0.9%)	0.9%
50-59	1105 (3.5%)	2.7%
60-69	3233 (10.3%)	10.6%
70-79	8487 (27.2%)	25.8%
80-89	12792 (40.9%)	31.8%
>=90	5284 (16.9%)	28.7%
Not reported	0 (0%)	0%
Total	31248 (100%)	13.7%

<https://www.epicentro.iss.it/> The COVID-19 Task force of the Department of Infectious Diseases and the IT Service Istituto Superiore di Sanità

Why such a high case fatality rate?

- Aging population: 23% of the population is 65 years and older
- Stringent testing strategies
- Definition of COVID-19-related deaths
- Overwhelmed health care system

Onder et al. JAMA. Published online March 23, 2020. doi:10.1001/jama.2020.4683

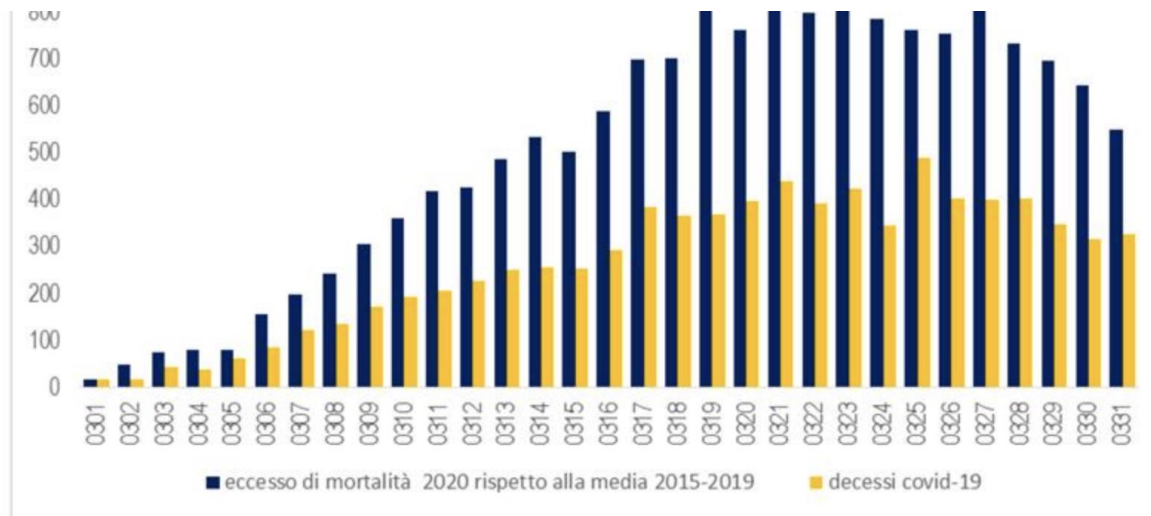
Boccia et al. JAMA Intern Med. Published online April 7, 2020. doi:10.1001/jamainternmed.2020.1447

COVID-19 mortality rate by country as of May 22

Country	Total deaths	Deaths/1M pop
Belgium	9,237	797
Spain	28,628	612
Italy	32,616	539
UK	36,393	536
France	28,289	433
Sweden	3,992	396
USA	97,775	296

<https://www.worldometers.info/coronavirus/#countries>

Additional daily deaths in March 2020 with respect to the average daily deaths using 2015-2019 data in subjects 50+ years old in Lombardia



Note: (a) decessi della sorveglianza integrata Covid-19

Fonte: Istat. Base dati integrata mortalità giornaliera comunale, Iss Sistema di sorveglianza integrata Covid-19

a Figura 8 del Rapporto l'eccesso di mortalità in Lombardia per il mese di marzo e nella classe "dai 50 anni di età in avanti". In giallo i decessi ufficialmente d-19 e in blu i decessi totali (in eccesso rispetto alla media 2015-2019).

<https://www.epicentro.iss.it/>



📷 *Caskets in Bergamo waiting to be moved to a crematorium in Florence, April 7 (Marco Di Lauro/Getty Images)*



Dove le bare sono così numerose che è stato chiamato l'esercito a portarle via dai capannoni per la cremazione.



October 17, 2005

2008 National Preparedness and Response Plan to an Influenza Pandemic

- Promptly identify, confirm and describe cases of influenza caused by new viral subtypes in order to quickly recognize the start of the pandemic.
- Minimize the risk of transmission and limit morbidity and mortality due to the pandemic.
- Reduce the impact of the pandemic on healthcare and social services and ensure the maintenance of essential services.
- Ensure adequate training of the staff involved in the response to pandemic.
- Ensure up-to-date and timely information for decision-makers, healthcare professionals, the media and the public.
- Monitor the effectiveness of interventions undertaken.

<https://www.saluteinternazionale.info/wp-content/uploads/2020/04/pianopandemico.pdf>

Something went wrong from a public health standpoint...

- Three alarming signals
 - Patient zero has never been identified
 - Patient 1 was identified by chance
 - Large numbers of clusters of hospital healthcare professionals have been infected

Filippo Curtale. C'era una volta il Piano pandemico. Salute Internazionale. 5 April, 2020.

Issues in the structure and organization of the National Healthcare System

- The National Healthcare System has undergone continuous spending cuts and rounds of privatization
 - Decreased number of hospital beds
 - Low number of ICU beds
 - About 5,000 ICU beds (8.4 per 100K population) - for instance, US has about 96,000 ICU beds (34.7 per 100K population)
 - Hiring freeze of healthcare personnel
 - Reduced funds for prevention and public health

Boccia et al. JAMA Intern Med. Published online April 7, 2020.doi:10.1001/jamainternmed.2020.1447

Critical Care Statistics <https://www.sccm.org/Communications/Critical-Care-Statistics>

Lo Stato della Sanità in Italia. http://www.upbilancio.it/wp-content/uploads/2019/12/Focus_6_2019-sanit%C3%A0.pdf

And here comes COVID-19...

- **Jan. 22:** The Minister of Health convened a COVID-19 Task Force
- **Jan. 31:** Italy imposed a ban on flights from/to China, immediately after a Chinese couple in Rome tested positive for the virus
- **Feb. 2:**
 - During an interview on a popular show, a famous virologist, Roberto Burioni, stated that the risk of a COVID-19 epidemic Italy was “equal to zero”
 - The Minister of Health, Roberto Speranza, proposed a lockdown, but his voice remained unheard
- By February, masks and other PPE were difficult to find

The pandemic began...

- **Feb. 20:** First case identified in a 38-year-old man at the hospital of **Codogno** in the province of Lodi (close to Milan), **Lombardia**. It is believed that this super-spreader infected more than 160 people inside and outside the hospital
- **Feb. 21:** A cluster of cases identified in **Vò** in the province of Padova, **Veneto**
- **Feb. 22:** 2 cases hospitalized in **Piacenza**, **Emilia-Romagna**
- **Feb. 23:** the Italian government created **two “red zones”** around 10 towns in Lodi and around the town of Vò in Padova province, effectively **quarantining 50,000 people**

The political reaction...

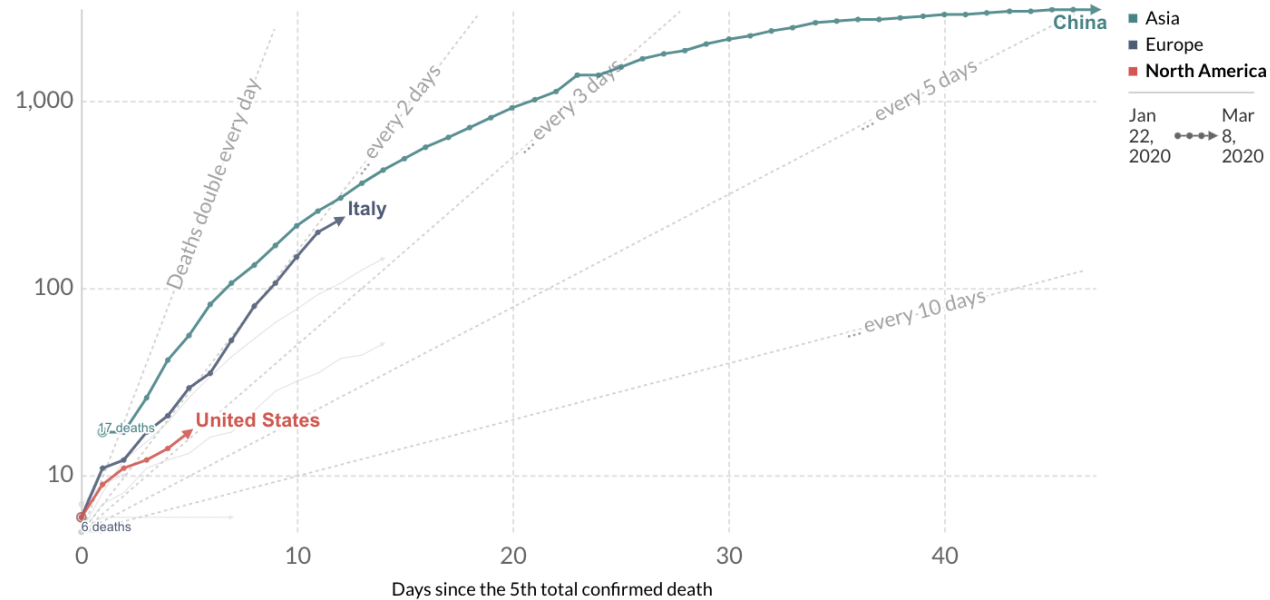
- **Feb. 25-27:**
 - The Prime Minister, Mr. Conte, said that “Italy is a safe country and probably safer than many others”
 - In Milan, Mr. Zingaretti, a prominent politician, posted his *aperitivo* picture
 - The Mayor of Milan, Beppe Sala, launched a *Milan Doesn't Stop* campaign, allowing bars to remain open in the evening
 - The country's Foreign Minister, Luigi Di Maio, said: “In Italy, we went from the risk of an epidemic to an infodemic,” adding that only “0.089 percent” of the Italian population was quarantined
- **Mar. 3:** In Milan, the city's landmark cathedral - that is a draw for tourists - reopened

The situation by March 8

Total confirmed COVID-19 deaths: how rapidly are they increasing?

Limited testing and challenges in the attribution of the cause of death means that the number of confirmed deaths may not be an accurate count of the true number of deaths from COVID-19.

LOG



Source: European CDC - Situation Update Worldwide - Last updated 7th May, 11:15 (London time)

CC BY

▶ Jan 21, 2020 May 8, 2020

[Select countries](#) Zoom to selection

CHART

DATA

SOURCES



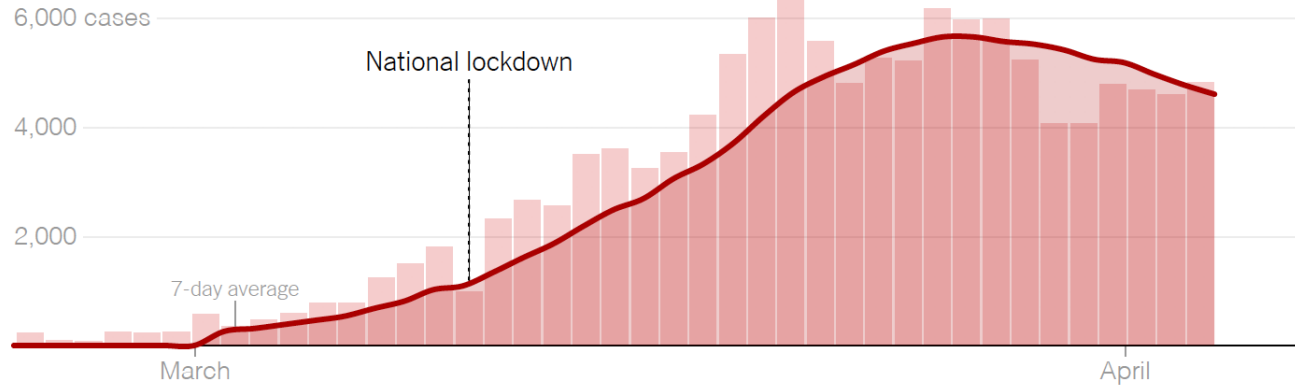
In Italy on 3/8:
 Total N. of cases
7,375
 Total N. of deaths
366

The containment measures

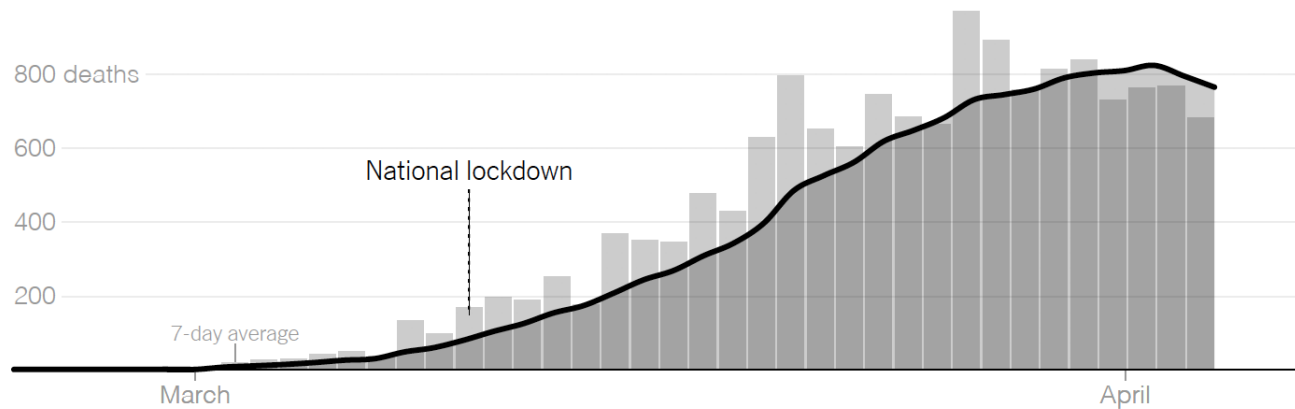
- **March 8:** The government restricted the movement of roughly 16 million people in northern Italy. But the order leaked early, and many people fled the area (to the south) before it took effect.
- **March 10:** The Prime Minister banned all nonessential movement across the country. But the rules of the lockdown were difficult to enforce

The effect of the lockdown

Italy's Virus Shutdown Came Too Late. What Happens Now? - The New York Times



... but it is taking longer for the number of **new deaths** to fall.



Source: Italian Department of Civil Protection

COVID-19 mortality rate by Italian region as of May 23

Country	Cases	Total deaths	Deaths/100K pop
Lombardia	86,825	15,840	157.5
Emilia-Romagna	27,513	4,047	90.8
Piemonte	30,137	3,771	86.5
Veneto	19,069	1,865	38.0
Italia	229,327	32,735	54.2

Protezione Civile <http://www.protezionecivile.gov.it/home>

Lombardia

- At the beginning of the COVID-19 surge, many local prominent politicians minimized the issue
- Insufficient number of testing and no contact tracing
- Regional healthcare system centered on hospital care
 - Too many patients presented to hospitals
 - Inability to offer care to everybody
 - Spread of the virus in the hospitals

Veneto

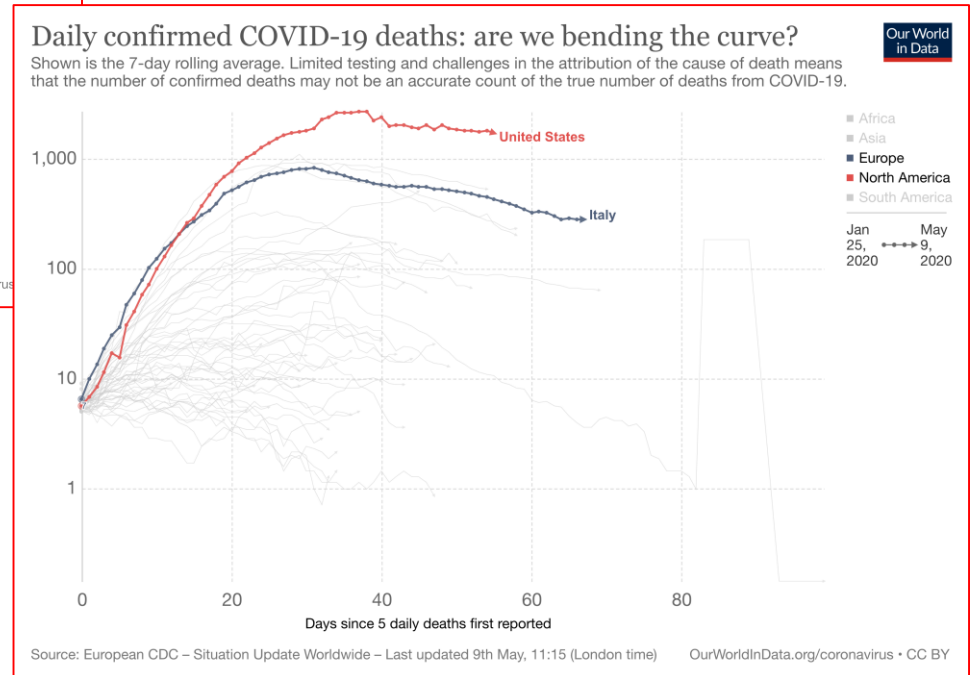
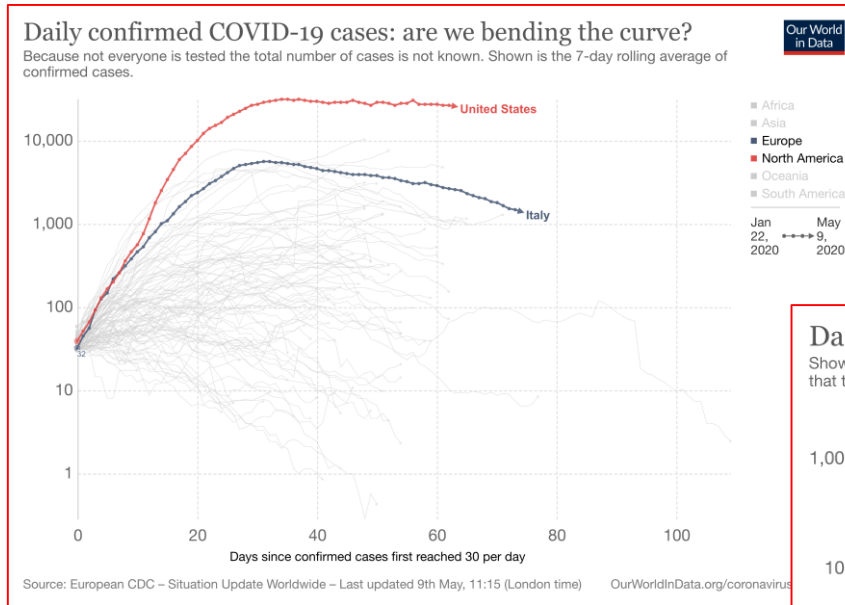
- Regional government consulted with microbiologists, epidemiologists, and public health experts and took the issue seriously
- Immediate quarantine of towns affected by COVID-19
 - 3T approach (testing, tracing, and treatment)
- Regional Healthcare System centered on primary care
 - Patients, when possible, were treated at home by primary care physicians and/or physicians on call

Emilia-Romagna

- Regional government consulted with microbiologists, epidemiologists, and public health experts and took the issue seriously
- Regional Healthcare System centered on primary care
 - Set up COVID-19 hospitals
 - Patients, when possible, were treated at home by primary care physicians
 - Creation of Special Units of Continuity of Care (400 physicians and 100 nurses, social workers and other healthcare professionals) to care patients at home

Bending the curve on May 9

May 11: Italy cautiously started reopening the country



A few final thoughts...

- In a pandemic, preparedness, early interventions, and surveillance system are critical
- Politicians should place greater trust in the science and the scientists



Stefano Del Canale, MD, PhD, and Claudia Tagni, RN

Thank you!



Thank you!

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