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UNIVERSITY



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MILANO 1863



HDMA  
@SDSU

THE CENTER FOR  
HUMAN DYNAMICS  
IN THE MOBILE AGE



# The Outbreak of Covid-19 in Italy: Fighting the Pandemic



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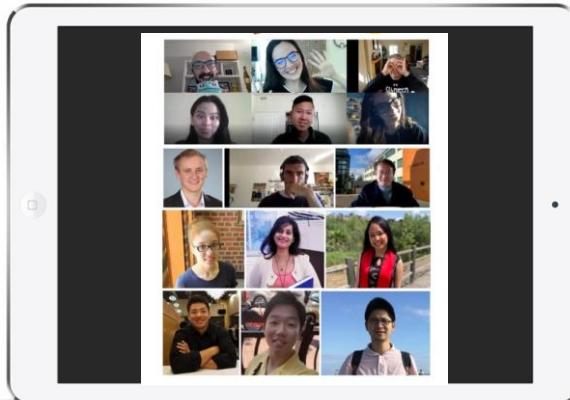
**Carol Maione**, Politecnico di Milano, Department of Management, Economics and Industrial Engineering, Milan, Italy, [carol.maione@polimi.it](mailto:carol.maione@polimi.it)

San Diego State University,  
Geography 590, Department of Geography, San Diego, California, USA  
August 24, 2020

# International Team on Covid-19 HDMA@SDSU



- Weekly Zoom Meetings
- PI: Dr. Gabriela Fernandez,
- Co-PI: Dr. Ming-Hsiang Tsou, and Intl. Co-PI: Carol Maione.
- Interdisciplinary Professionals from: Italy, Spain, Malta, New York, San Diego, London, Taiwan, Philippines, Korea, Australia and more.



Taking Action! Towards fighting Covid-19!



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IN THE MOBILE AGE



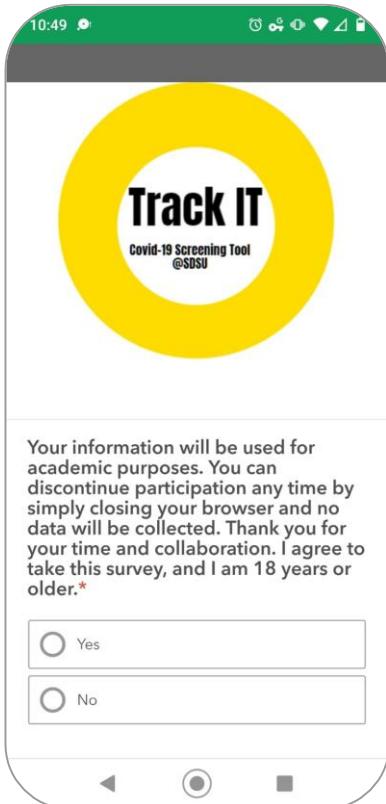
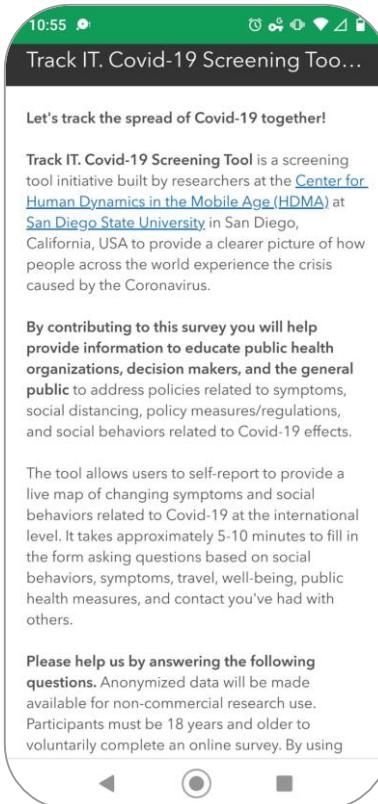
**POLITECNICO**  
MILANO 1863



**METABOLISM  
OF CITIES**

SAN DIEGO STATE  
UNIVERSITY

# Track IT. Covid-19 Screening Tool @ SDSU

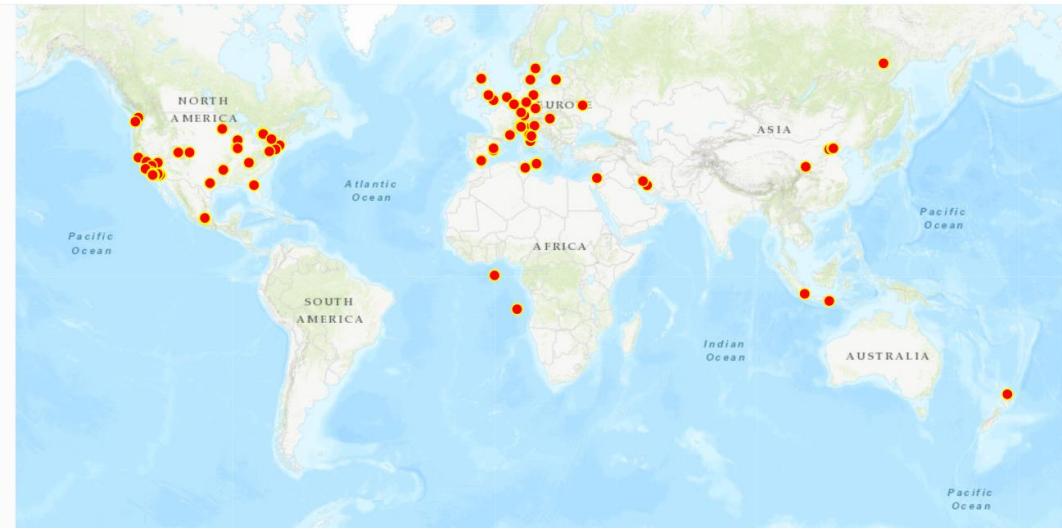


Tracking the outbreak of Covid-19 around the world: Fighting the Pandemic



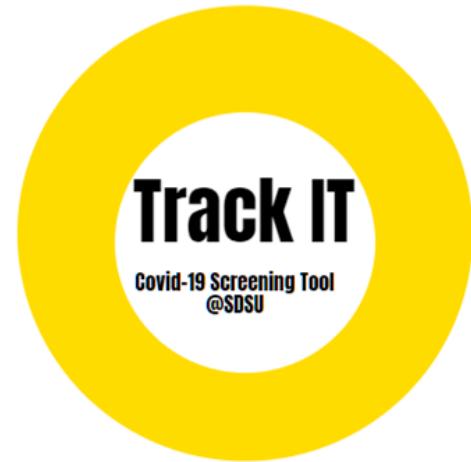
Preliminary findings

# Track IT. Covid-19 Screening Survey Tool @ SDSU



## Preliminary findings:

- 207 participants from across the world
- International survey: <https://arcq.is/1jCXqy>
- Duration: 5-10 minute
- Covid-19 effects, behaviors, well-being, health, policy, trust, socio-economic and more.



Take a picture of the QR Code to take the survey!



## Track IT. Covid-19 Screening Tool @ SDSU

10:54

Do you think your government launched the emergency response measures at the right time?

Yes  
 Too late  
 Too early  
 I prefer not to answer

To which extent do the following statement apply to you right now?

|   | Does not apply at all | Somewhat does not apply | Neither applies nor does not apply |
|---|-----------------------|-------------------------|------------------------------------|
| I am nervous when I think about current circumstances | <input type="radio"/> | <input type="radio"/>   | <input type="radio"/>              |
| I am calm and   | <input type="radio"/> | <input type="radio"/>   | <input type="radio"/>              |

◀ ▶ ⌂

10:53

How factually truthful do you think your country's government has been about the coronavirus outbreak?

Very untruthful  
 Somewhat untruthful  
 Neither truthful nor untruthful  
 Somewhat truthful  
 Very truthful  
 I prefer not to answer

What do you think: How effective are social distancing measures in your community (e.g., through a general curfew) to slow down the spread of the coronavirus?

Not at all effective  
 Not effective

◀ ▶ ⌂

10:53

Do you think the reaction of your local government to the current coronavirus outbreak is appropriate, too extreme, or not sufficient?

The reaction is much too extreme  
 The reaction is somewhat too extreme  
 The reaction is appropriate  
 The reaction is somewhat insufficient  
 The reaction is not at all sufficient  
 I prefer not to say

How much do you trust your local government to take care of its citizens?

Strongly distrust  
 Somewhat distrust  
 Neither trust nor distrust

◀ ▶ ⌂

10:54

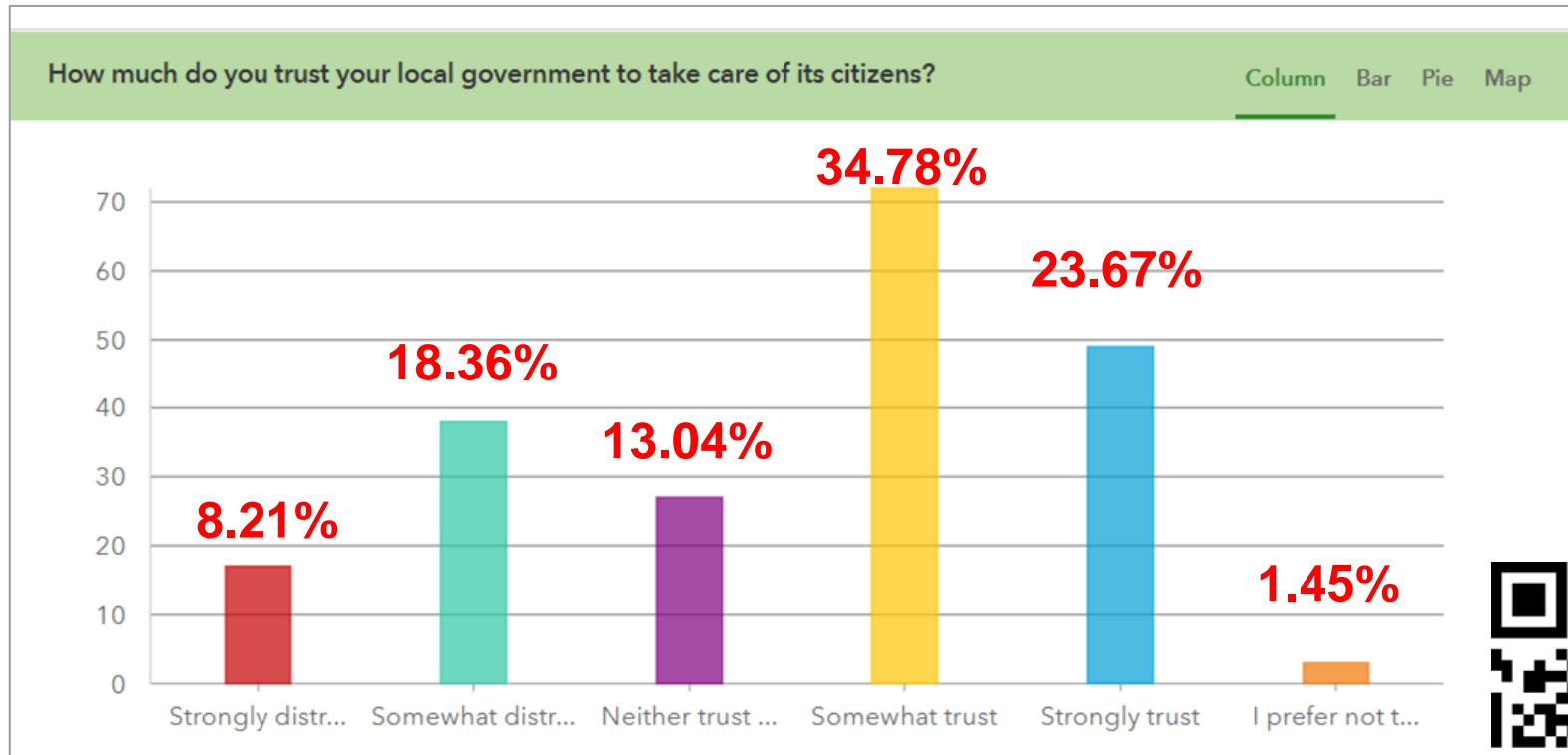
Which social media application do you use most often to discuss topics about Covid-19?  
(Select all that apply)

Facebook  
 Twitter  
 TikTok  
 Snapchat  
 Instagram  
 LinkedIn  
 Reddit  
 Tumblr  
 Sina Weibo  
 WeChat  
 WhatsApp

◀ ▶ ⌂



# Track IT. Covid-19 Screening Tool @ SDSU



# Track IT. Covid-19 Screening Tool @ SDSU

How much do you trust your local government to take care of its citizens?

Column Bar Pie **Map**



## Legend

|                            |               |
|----------------------------|---------------|
| Strongly distrust          | <b>8.21%</b>  |
| Somewhat distrust          | <b>18.36%</b> |
| Neither trust nor distrust | <b>13.04%</b> |
| Somewhat trust             | <b>34.78%</b> |
| Strongly trust             | <b>23.67%</b> |
| I prefer not to say        | <b>1.45%</b>  |
| others                     |               |



# Well-being, health, behaviors, mobility, and more

## Track IT. Covid-19 Screening Tool @ SDSU

10:51 10:52 10:53 10:52 10:50

How healthy are you?

Poor  
 Fair  
 Good  
 Excellent

Do you know someone in your community who is sick (fever, along with cough, shortness of breath, or difficulty breathing) right now?

Yes  
 No  
 Not sure

To what extent do the following statements describe your behavior for the past week?

This section asks about your personal behavior during the coronavirus crisis. (1=does not apply at all | 5=applies very much)

|   | 1                     | 2                     | 3                     | 4                     | 5                     |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| I stayed at home  | <input type="radio"/> |
| I did not attend social gatherings                                  | <input type="radio"/> |
| I kept a distance of at least two meters to other people around me. | <input type="radio"/> |
| I washed my hands more frequently than the month                    | <input type="radio"/> |

Do you have any of the following pre-existing illnesses? (Select all that apply)

Cardiovascular disease  
 Diabetes  
 Chronic respiratory disease  
 None  
 Immune deficiency disease  
 Prefer not to say  
 Hepatitis B  
 Chronic kidney disease  
 Cancer  
 Other

Did you recently relocate to your current place because you felt the current place has lower risk of exposure to Covid-19?

What is the motive to leave your home? (Select all that apply)

Grocery shopping  
 Pharmacy  
 Doctor  
 Hospital  
 Personal protective masks, scarf, mouth/nose  
 Work-related  
 Exercise



# Monitoring Social Media Tweets during Covid: Sentiment Analysis for 10 Italian metropolitan cities

Exploring Sentiments, Covid-19 Cases, and Deaths

## Preliminary findings:

### North

- Milan
- Venice
- Turin
- Bologna



### Central

- Florence
- Rome

### South

- Naples
- Bari

### Islands

- Palermo
- Cagliari



Phase 0

Phase I

Phase II

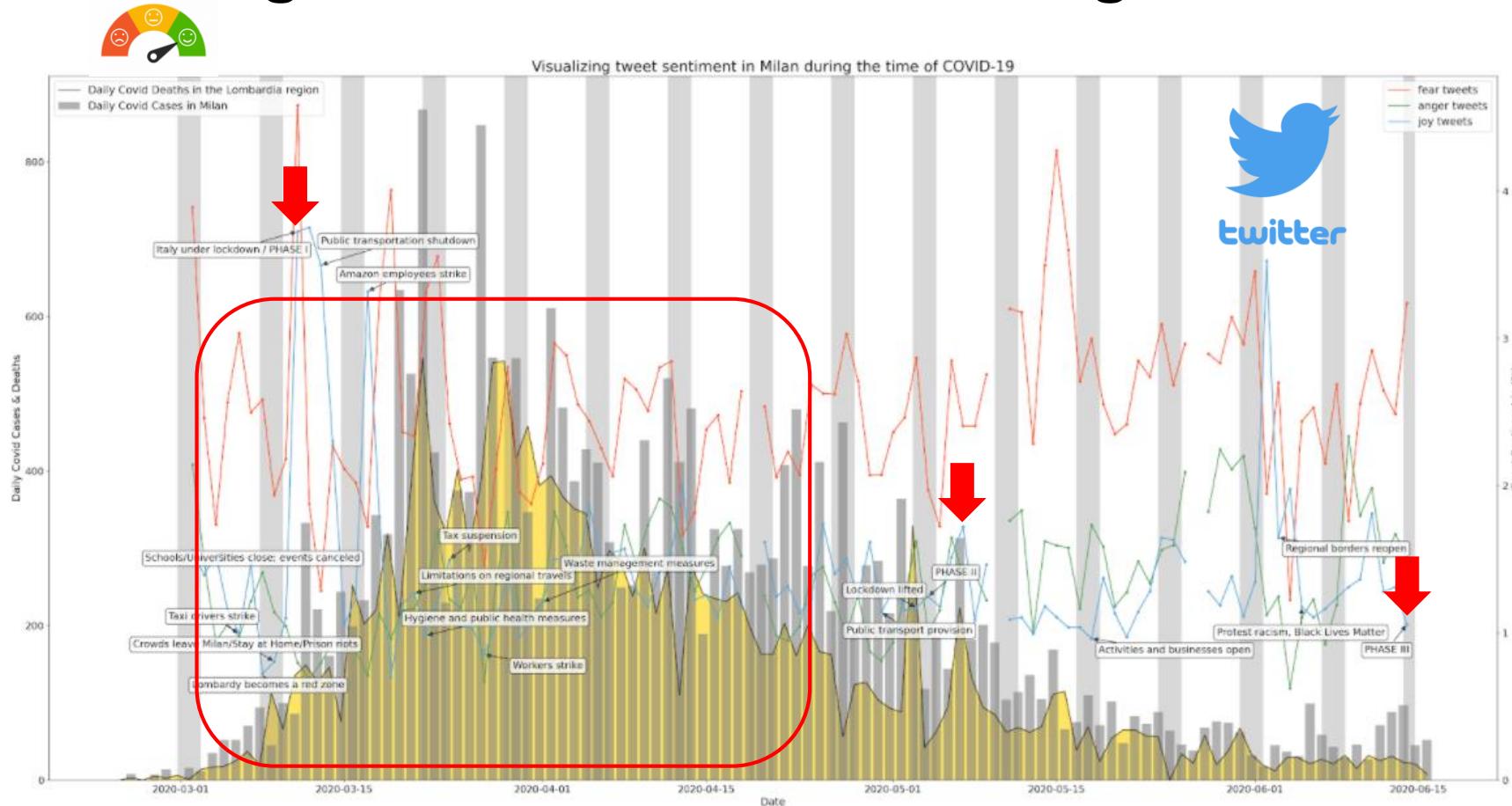
Phase III

Over 4 million  
Tweets!



twitter

# Monitoring Milan's sentiments during Covid-19



# Monitoring Milan's Sentiments During Covid-19

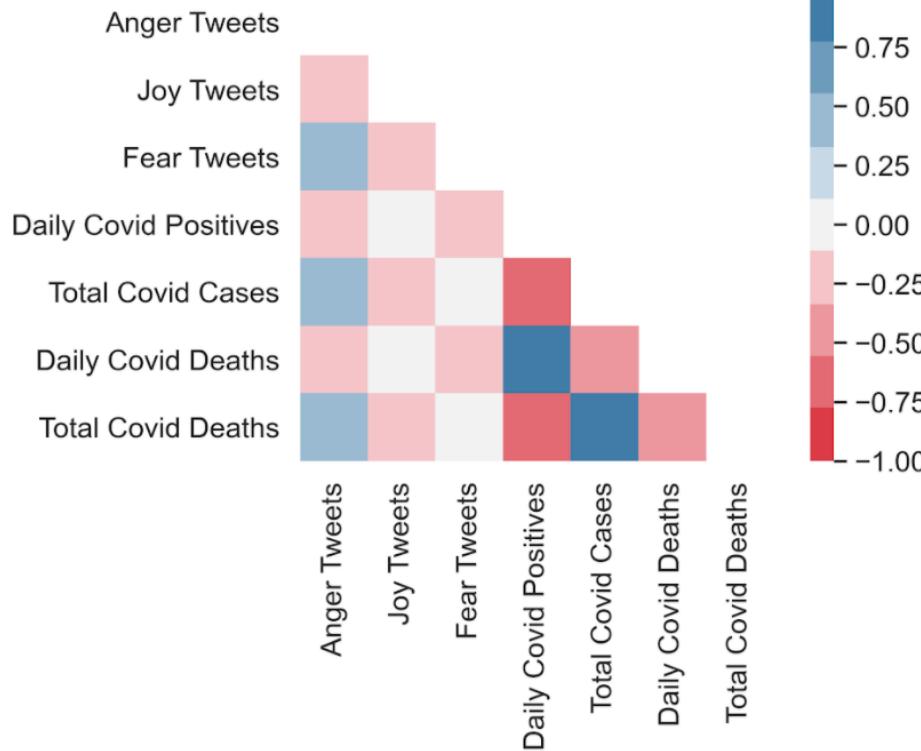
## **Preliminary findings:**

- Anger and Covid Cases
  - Anger and Deaths
  - Fear and Anger
  - Covid Cases and Covid Deaths

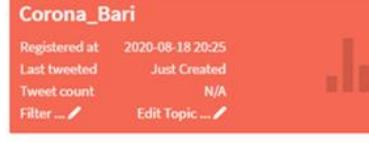
## (Policy influences)



### Milan Correlation Matrix (Regional)



# Smart Social Media Dashboard: 10 Italian Metropolitan Cities



| Type       | Metropolitan city | Region         | Area (km <sup>2</sup> ) | Population (n) |
|------------|-------------------|----------------|-------------------------|----------------|
| North      | Milan             | Lombardy       | 1,575                   | 3,190,340      |
| West       | Turin             | Piedmont       | 6,829                   | 2,293,340      |
| North East | Venice            | Veneto         | 2,462                   | 858,455        |
|            | Bologna           | Emilia Romagna | 3,702                   | 1,005,831      |
| Central    | Florence          | Tuscany        | 3,514                   | 1,007,435      |
|            | Rome              | Lazio          | 5,352                   | 4,336,915      |
| South      | Naples            | Campania       | 1,171                   | 3,128,702      |
|            | Bari              | Apulia         | 3,821                   | 1,251,004      |
| Islands    | Cagliari          | Sardinia       | 1,248                   | 431,302        |
|            | Palermo           | Sicily         | 5,009                   | 1,276,525      |

# Smart Social Media Dashboard: Milan, Italy

HDMA SMART Dashboard 3  
@SDSU Human Dynamics Center, SDSU

Stop Auto Refresh 09:50 Covid\_Italy

COVID ITALY CORONA MILAN Topic

Dashboard

- Index
- Word Cloud
- Trend
- Top URL
- Top Hashtags
- Top Mentions
- Top Retweet
- Top Media
- Geocode Status

Keywords 10

"Stay at home" Aug 19, 2020

COVID-19 Aug 19, 2020

"Social distancing" Aug 19, 2020

Positive Aug 19, 2020

Vaccine

**21**  
Since 10 min ago on 2020-08-23  
20: 00 ~ 20: 09 17  
20: 10 ~ 20: 13 4

**109**  
Since 1 hour ago on 2020-08-23  
19: 00 ~ 19: 59 ninety  
20: 00 ~ 20: 13 two 17

**4.006**  
Since yesterday  
08/22/2020 2,780  
2020-08-23 1,226

**20.085**  
Since beginning  
from 08/10/2020  
To 2020-08-23 20:13

**Trend** Tweets Filtered Options 10 min 1 hour Daily Weekly

25  
20  
15  
10  
5  
0

2:00 am 04:00 06:00 08:00 10:00 12:00 14:00 4:00 pm 18:00 8:00 pm

11:40 [3] 15:30 [1] 18:00 [2]

**Top Media** All 2020-08-10 ~ To week Aug 2020-08-16 ~ Yesterday 2020-08-22 ~ Today 2020-08-23

59 Napoli 55 Milano

Roma Bergamo

<http://pbs.twimg.com/media/EfrvPOSx0AEwm.png>



## Word Cloud

All

2020-08-10 ~

To week Aug

2020-08-16 ~

Yesterday

2020-08-22 ~

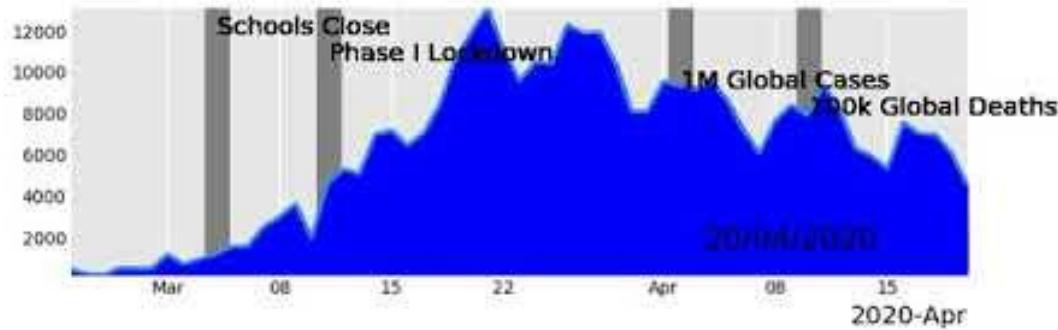
Today

2020-08-23



# Covid-19 Confirmed Cases: Italy's Animated Statistics Over Time

Italy COVID-19 Confirmed Cases up to 27/05/2020



Cases by Region



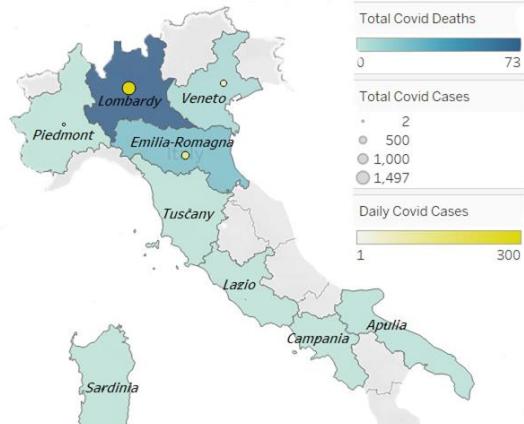
Cumulative Total Cases



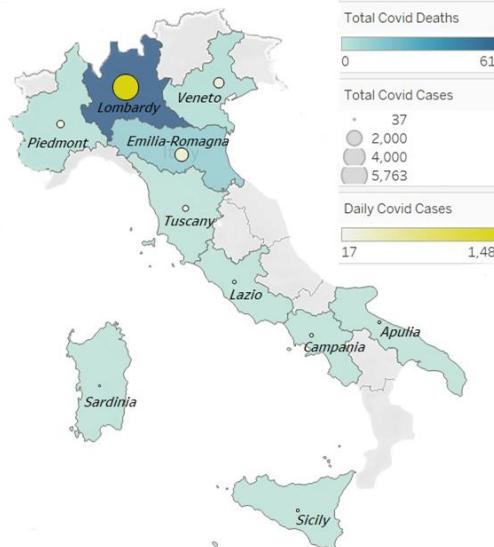
# The Start of Covid-19 in Italy



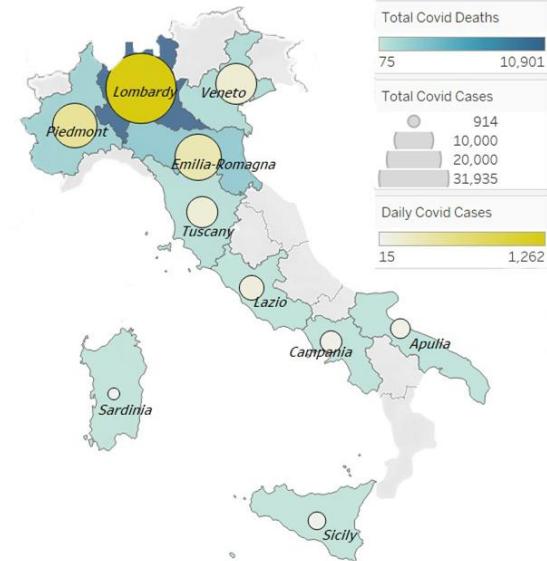
# Timeline of Covid-19 spread



**Phase 0 - March 4th**  
Code Red in the North



**Phase 1 - March 11th**  
National lockdown



**Phase 1 - April 13th**  
Phase 2 announced

# Phase 0: the effects of Covid based on geography

Data as of March 4, 2020: Closure of activities and cancellation of mass events

|                             | Daily Covid cases | Total Covid cases | Daily Covid deaths | Total Covid deaths | Hospitalized with symptoms | Intensive care | Home isolation |
|-----------------------------|-------------------|-------------------|--------------------|--------------------|----------------------------|----------------|----------------|
| Lombardy (North-West)       | 300               | 1,497             | 18                 | 73                 | 877                        | 209            | 411            |
| Piedmont (North-West)       | 26                | 82                | 0                  | 0                  | 26                         | 13             | 43             |
| Veneto (North-East)         | 53                | 345               | 3                  | 6                  | 76                         | 23             | 246            |
| Emilia Romagna (North-East) | 124               | 516               | 3                  | 22                 | 256                        | 26             | 234            |
| Tuscany (Central)           | 19                | 37                | 0                  | 0                  | 15                         | 2              | 20             |
| Lazio (Central)             | 16                | 27                | 0                  | 0                  | 15                         | 3              | 9              |
| Campania (South)            | 1                 | 31                | 0                  | 0                  | 11                         | 0              | 20             |
| Apulia (South)              | 3                 | 7                 | 1                  | 1                  | 4                          | 0              | 3              |
| Sardinia (Islands)          | 1                 | 2                 | 0                  | 0                  | 1                          | 0              | 1              |
| Sicily (Islands)            | 11                | 16                | 0                  | 0                  | 5                          | 0              | 11             |

# Phase 1.1: the effects of Covid based on geography

Data as of March 11, 2020: Beginning of lockdown

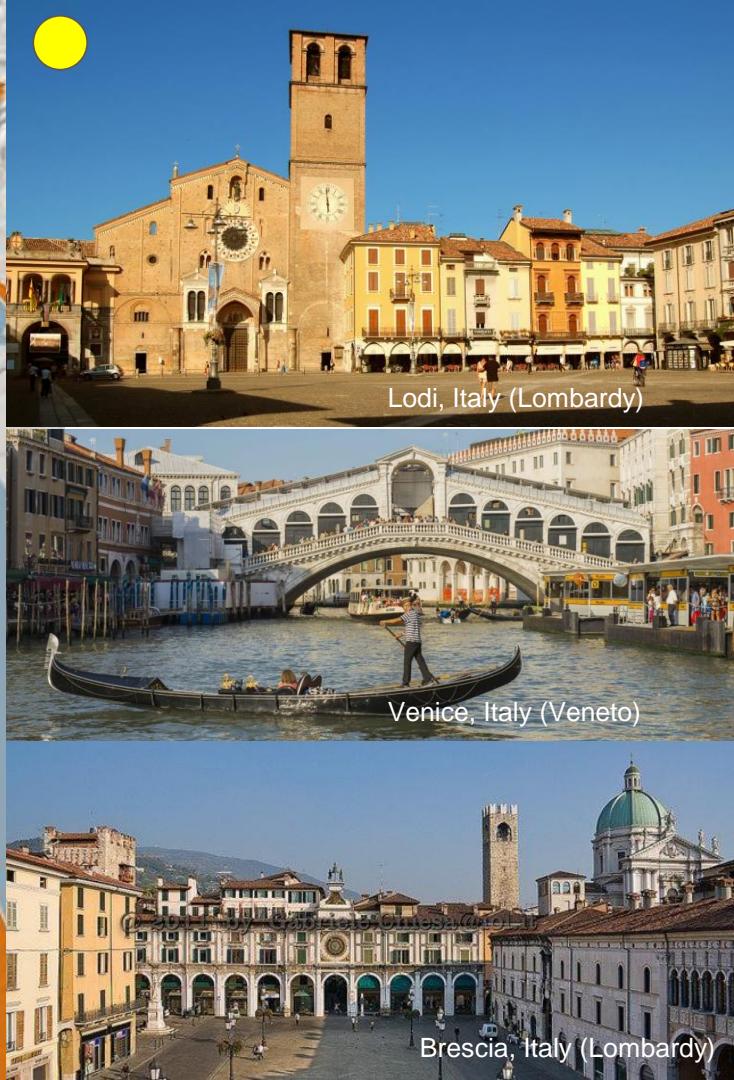
|                             | Daily Covid cases | Total Covid cases | Daily Covid deaths | Total Covid deaths | Hospitalized with symptoms | Intensive care | Home isolation |
|-----------------------------|-------------------|-------------------|--------------------|--------------------|----------------------------|----------------|----------------|
| Lombardy (North-West)       | 1,489             | 5,763             | 149                | 617                | 3,852                      | 560            | 1,351          |
| Piedmont (North-West)       | 48                | 480               | 4                  | 21                 | 319                        | 75             | 86             |
| Veneto (North-East)         | 167               | 940               | 3                  | 29                 | 262                        | 68             | 610            |
| Emilia Romagna (North-East) | 206               | 1,588             | 28                 | 113                | 745                        | 104            | 739            |
| Tuscany (Central)           | 56                | 314               | 0                  | 1                  | 87                         | 54             | 173            |
| Lazio (Central)             | 34                | 125               | 0                  | 6                  | 67                         | 18             | 40             |
| Campania (South)            | 27                | 149               | 1                  | 1                  | 56                         | 11             | 82             |
| Apulia (South)              | 18                | 71                | 2                  | 5                  | 38                         | 4              | 29             |
| Sardinia (Islands)          | 17                | 37                | 0                  | 0                  | 10                         | 0              | 27             |
| Sicily (Islands)            | 21                | 81                | 0                  | 0                  | 23                         | 1              | 57             |

# Phase 1.2: the effects of Covid based on geography

Data as of April 13, 2020: Announcement of Phase 2

|                    | Daily Covid cases | Total Covid cases | Daily Covid deaths | Total Covid deaths | Hospitalized with symptoms | Intensive care | Home isolation |
|--------------------|-------------------|-------------------|--------------------|--------------------|----------------------------|----------------|----------------|
| Northern Italy     | 1,262             | 31,935            | 280                | 10,901             | 12,028                     | 1,143          | 18,764         |
|                    | 474               | 12,765            | 97                 | 1,826              | 3,344                      | 379            | 9,042          |
|                    | 174               | 10,766            | 26                 | 882                | 1,427                      | 245            | 9,094          |
|                    | 342               | 13,818            | 51                 | 2,615              | 3,490                      | 331            | 9,997          |
| Tuscany (Central)  | 155               | 6,257             | 23                 | 518                | 992                        | 225            | 5,040          |
| Lazio (Central)    | 123               | 3,920             | 5                  | 284                | 1,314                      | 200            | 2,406          |
| Campania (South)   | 66                | 3,062             | 6                  | 248                | 606                        | 80             | 2,376          |
| Apulia (South)     | 76                | 2,512             | 7                  | 267                | 600                        | 71             | 1,841          |
| Sardinia (Islands) | 15                | 914               | 2                  | 75                 | 107                        | 27             | 780            |
| Sicily (Islands)   | 42                | 2,050             | 8                  | 171                | 554                        | 51             | 1,445          |

# Red Zones (Northern Italy)



# Italy Open Data Dashboard (Protezione Civile, 2020)

COVID-19 Situazione Italia

Data 8/21/2020

Regione Tutte

Attuali positivi **16,678**  
Incremento **664**

Dimessi / Guariti **204,960**  
Incremento **274**

Deceduti **35,427**  
Incremento **9**

Totale casi **257,065**  
Incremento **947**

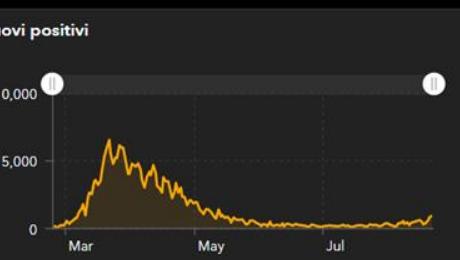
Altri dati e informazioni

- Aggiornamento dati sanitari [storico]
- Infografica epidemiologica ISS
- Sorveglianza settimanale Regioni
- Aggiornamento nazionale ISS [storico]

Andamento nazionale



Nuovi positivi



Map of Italy and surrounding regions showing the distribution of current positive cases. Yellow circles of varying sizes represent the number of cases in different areas.

Regioni - attuali positivi   Province - casi totali

Positivi   Variazione

Licenza: CC-BY-4.0 - Visualizza licenza  
Scheda metadati RNDT: dati - aree  
Temi del dataset: Salute umana e sicurezza (Inspire) - ISO 19115: Salute  
Dati forniti dal Ministero della Salute  
Elaborazione e gestione dati a cura del Dipartimento della Protezione Civile

Download schede e dati:

- Schede riepilogo PDF
- Dati CSV / JSON
- Shape aree
- Metadati

Regioni   Province

Note

20/8/2020  
La Regione Sardegna comunica il seguente ricalcolo: dal totale di ieri sono stati eliminati 5 casi in provincia di Nuoro poiché duplicati.

18/8/2020



**Prime minister Giuseppe Conte orders closure of all schools, major events, and sporting events due to Covid-19 (March 4, 2020)**



Venice, Veneto



Bergamo, Lombardy



Bergamo, Lombardy



Claudio Furlan, La Presse via AP, 2020, Bergamo, Italy (Lombardy)

# Clinicians and Nurses Paid a Very High Price in Italy



Paolo Miranda, 2020, Cremona, Italy (Lombardy)

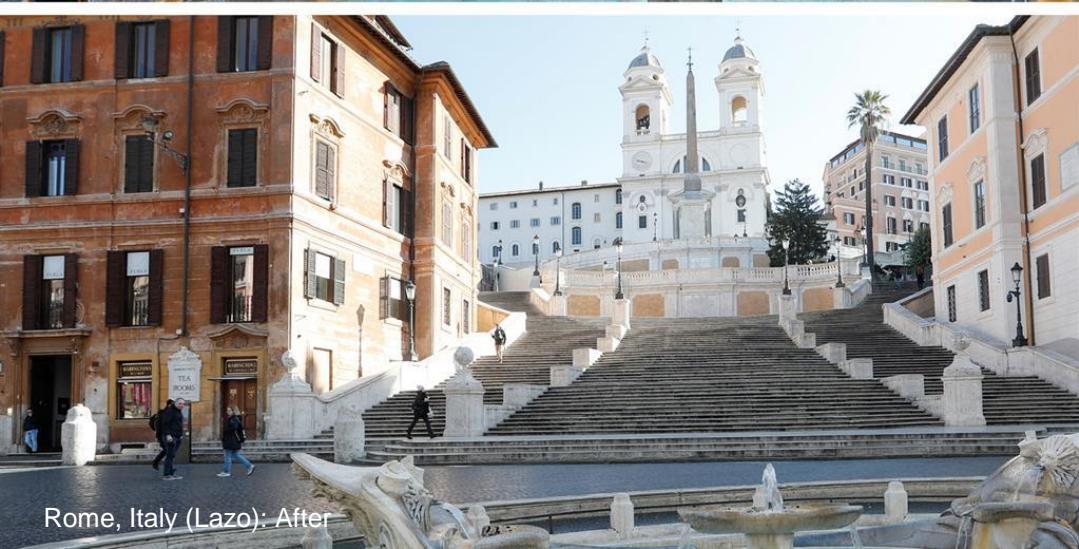
# Ghost Towns across Italy



Rome, Italy (Lazio): Before



Milan, Italy (Lombardy)



Rome, Italy (Lazio): After

# Policy Decree: #Stay at home, “#Io resto a casa”



Leaving home is only allowed to under-65 y.o. for essential activities.



Masks are mandatory in all public spaces and gloves are mandatory on public transports and in grocery stores.



All travels are suspended and public transport are reduced to minimum activity.



Education at all levels goes online.



Work goes online where possible; many workers are laid off or on forced-vacation.



Goods movement between the mainland and islands is disrupted.

# Lockdown: Essential vs. Non-Essential Activities



## Where:

- Grocery stores & food-related.
- Hospitals and pharmacies.
- Post offices, banks, and insurance companies.
- Production activities.
- Work places.\*

## Who:

- People under 65 years old

## How:

- Auto certificate.
- Policy approval.
- Employer approval.

# Lockdown: Tracking Movement Form

Il sottoscritto \_\_\_\_\_, nato il \_\_\_\_\_ a \_\_\_\_\_, residente in \_\_\_\_\_, via \_\_\_\_\_, identificato a mezzo \_\_\_\_\_ nr. \_\_\_\_\_ utenza telefonica \_\_\_\_\_, consapevole delle conseguenze penali previste in caso di dichiarazioni mendaci a pubblico ufficiale (art 495 c.p.)

## DICHIARA SOTTO LA PROPRIA RESPONSABILITÀ

➤ Di essere a conoscenza delle misure di contenimento del contagio di cui all'art. 1, comma 1, del Decreto del Presidente del Consiglio dei Ministri del 9 marzo 2020 concernenti lo spostamento delle persone fisiche all'interno di tutto il territorio nazionale, nonché delle sanzioni previste dall'art. 4, comma 1, del Decreto del Presidente del Consiglio dei Ministri dell' 8 marzo 2020 in caso di inottemperanza (art. 650 C.P. salvo che il fatto non costituisca più grave reato);

➤ Che lo spostamento è determinato da:

- comprovate esigenze lavorative;
- situazioni di necessità;
- motivi di salute;
- rientro presso il proprio domicilio, abitazione o residenza.

A questo riguardo, dichiara che \_\_\_\_\_  
(LAVORO PRESSO.... STO RIENTRANDO AL MIO DOMICILIO SITO IN.... DEVO  
EFFETTUARE UNA VISITA MEDICA.... ALTRI MOTIVI PARTICOLARI. ETC....)

Data, ora e luog

Firma del dichiarante

- I am aware of the containment measures.
- My transfer concerns: work necessity; basic needs; health problems; home transfer.

## AUTODICHIARAZIONE AI SENSI DEGLI ARTT. 46 E 47 D.P.R. N. 445/2000

Il sottoscritto \_\_\_\_\_, nato il \_\_\_\_\_ a \_\_\_\_\_ (\_\_\_\_\_), residente in \_\_\_\_\_ (\_\_\_\_\_), via \_\_\_\_\_, e domiciliato in \_\_\_\_\_ (\_\_\_\_\_), via \_\_\_\_\_, identificato a mezzo \_\_\_\_\_ nr. \_\_\_\_\_ rilasciato da \_\_\_\_\_ in data \_\_\_\_\_, utenza telefonica \_\_\_\_\_, consapevole delle conseguenze penali previste in caso di dichiarazioni mendaci a pubblico ufficiale (art. 495 c.p.)

## DICHIARA SOTTO LA PROPRIA RESPONSABILITÀ

➤ di non essere sottoposto alla misura della quarantena ovvero di non essere risultato positivo al COVID-19 (fatti salvi gli spostamenti disposti dalle Autorità sanitarie);  
➤ che lo spostamento è iniziato da \_\_\_\_\_ (indicare l'indirizzo da cui è iniziato) con destinazione \_\_\_\_\_;  
➤ di essere a conoscenza delle misure di contenimento del contagio vigenti alla data odierna ed adottate ai sensi degli artt. 1 e 2 del decreto legge 25 marzo 2020, n. 19, concernenti le limitazioni alle possibilità di spostamento delle persone fisiche all'interno di tutto il territorio nazionale;  
➤ di essere a conoscenza delle ulteriori limitazioni disposte con provvedimenti del Presidente della Regione \_\_\_\_\_ (indicare la Regione di partenza) e del Presidente della Regione \_\_\_\_\_ (indicare la Regione di arrivo) e che lo spostamento rientra in uno dei casi consentiti dai medesimi provvedimenti \_\_\_\_\_ (indicare quale);  
➤ di essere a conoscenza delle sanzioni previste dall'art. 4 del decreto legge 25 marzo 2020, n. 19;  
➤ che lo spostamento è determinato da:

- comprovate esigenze lavorative;
- assoluta urgenza ("per trasferimenti in comune diverso", come previsto dall'art. 1, comma 1, lettera b) del Decreto del Presidente del Consiglio dei Ministri 22 marzo 2020);
- situazione di necessità (per spostamenti all'interno dello stesso comune o che rivestono carattere di quotidianità o che, comunque, siano effettuati abitualmente in ragione della brevità delle distanze da percorrere);
- motivi di salute.

A questo riguardo, dichiara che \_\_\_\_\_ (lavoro presso ...., devo effettuare una visita medica, urgente assistenza a congiunti o a persone con disabilità, o esecuzione di interventi assistenziali in favore di persone in grave stato di necessità, obblighi di affidamento di minori, denunce di reati, rientro dall'estero, altri motivi particolari, etc....)

Data, ora e luogo del controllo

Firma del dichiarante

L'Operatore di Polizia

- I am not quarantined or positive to COVID-19.
- I am aware of the containment measures.
- I am aware of any further restriction.
- My transfer concerns: work necessity; urgent situations; basic needs; health problems.

# Lockdown: Tracking Movement

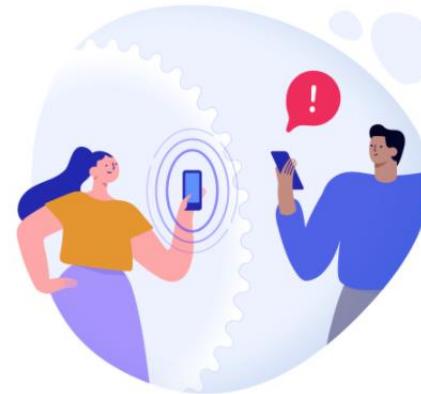
@ Stefano Guidi



Guidi



@ France 24



## Tracking devices:

- Drones.
- Sensors detecting people presence.
- Video Cameras.
- Mobile apps.

## Immuni takes care of you

If you've been in contact with a user who has subsequently tested positive for the virus, Immuni notifies you and gives you instructions to protect your health and the health of your loved ones.

@ Immuni

## Penalties:

- Fines (€ 400-3,000).
- Jail (up to 6 months).

# Social Response & Solidarity

@ Xinhua/Cheng Tingting



@ Wanted in Rome



@ CCTV News app



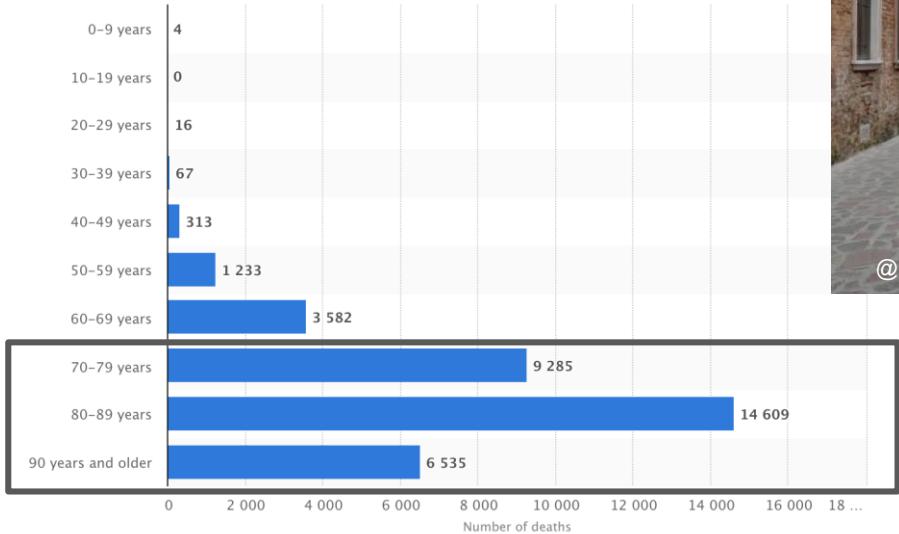
@ Aviation



# Social Response & Solidarity

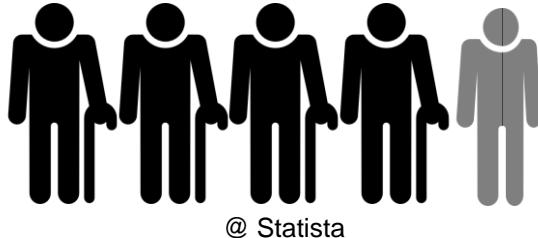


# Covid-19 victims: Who is the most affected?



@ Manuel Silvestri/Reuters

@ il Mattino di Padova

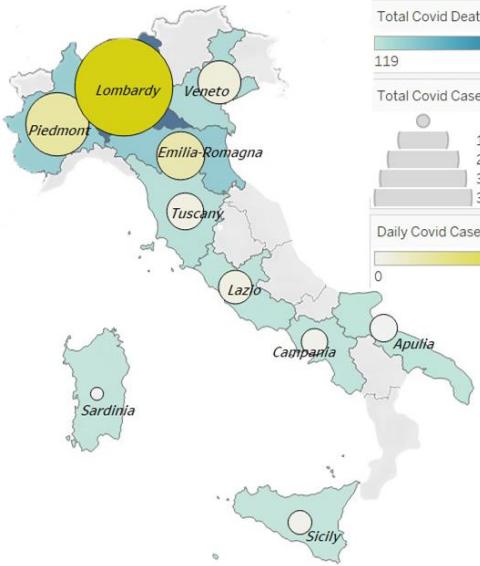


70+

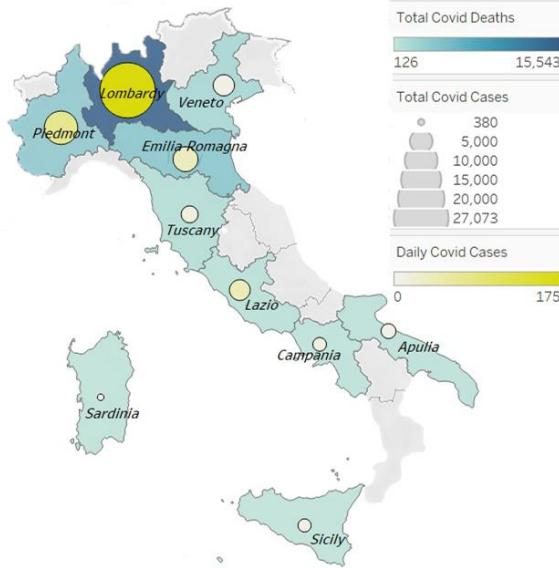
@ Statista

- **1/4 people are aged 65+.**
- **An entire generation is disappearing.**
- **Social and cultural identity.**
- **Insufficient access to technology and mass media.**
- **Isolation during emergencies.**
- **Elderly day centers situation.**
- **Saying goodbye to a loved one.**

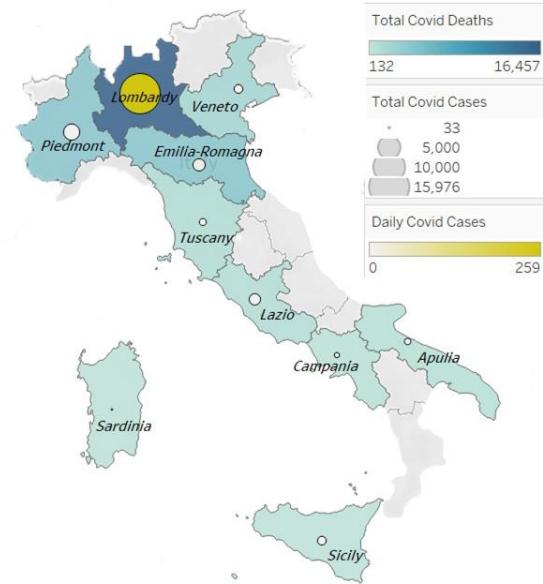
# Timeline of Covid-19 spread



**Phase 2 - May 4th**  
Lockdown lifted



**Phase 2 - May 18th**  
New measures



**Phase 3 - June 15th**  
Borders and activities opened

# Phase 2.1: the effects of Covid based on geography

Data as of May 4, 2020: Containment measures are eased

|                             | Daily Covid cases | Total Covid cases | Daily Covid deaths | Total Covid deaths | Hospitalized with symptoms | Intensive care | Home isolation |
|-----------------------------|-------------------|-------------------|--------------------|--------------------|----------------------------|----------------|----------------|
| Lombardy (North-West)       | 577               | 37,307            | 63                 | 14,294             | 6,414                      | 532            | 30,361         |
| Piedmont (North-West)       | 192               | 15,562            | 34                 | 3,186              | 2,391                      | 161            | 13,010         |
| Veneto (North-East)         | 55                | 7,234             | 12                 | 1,528              | 955                        | 101            | 6,178          |
| Emilia Romagna (North-East) | 159               | 8,984             | 24                 | 3,666              | 1,968                      | 199            | 6,817          |
| Tuscany (Central)           | 38                | 5,279             | 9                  | 881                | 512                        | 107            | 4,660          |
| Lazio (Central)             | 38                | 4,385             | 16                 | 524                | 1,335                      | 95             | 2,955          |
| Campania (South)            | 14                | 2,711             | 2                  | 366                | 438                        | 24             | 2,249          |
| Apulia (South)              | 9                 | 2,945             | 5                  | 429                | 397                        | 39             | 2,509          |
| Sardinia (Islands)          | 0                 | 653               | 0                  | 119                | 91                         | 9              | 533            |
| Sicily (Islands)            | 15                | 2,202             | 2                  | 244                | 376                        | 27             | 1,799          |

# Phase 2.2: the effects of Covid based on geography

Data as of May 18, 2020: Activities resume

|                             | Daily Covid cases | Total Covid cases | Daily Covid deaths | Total Covid deaths | Hospitalized with symptoms | Intensive care | Home isolation |
|-----------------------------|-------------------|-------------------|--------------------|--------------------|----------------------------|----------------|----------------|
| Lombardy (North-West)       | 175               | 27,073            | 24                 | 15,543             | 4,482                      | 252            | 22,339         |
| Piedmont (North-West)       | 72                | 9,874             | 20                 | 3,632              | 1,589                      | 99             | 8,186          |
| Veneto (North-East)         | 9                 | 4,004             | 9                  | 1,803              | 263                        | 22             | 3,719          |
| Emilia Romagna (North-East) | 35                | 5,525             | 13                 | 3,986              | 708                        | 105            | 4,712          |
| Tuscany (Central)           | 13                | 2,573             | 5                  | 989                | 197                        | 66             | 2,310          |
| Lazio (Central)             | 39                | 3,826             | 6                  | 628                | 1,137                      | 73             | 2,616          |
| Campania (South)            | 11                | 1,673             | 3                  | 399                | 342                        | 17             | 1,314          |
| Apulia (South)              | 7                 | 1,995             | 1                  | 471                | 254                        | 22             | 1,719          |
| Sardinia (Islands)          | 0                 | 380               | 1                  | 126                | 72                         | 10             | 298            |
| Sicily (Islands)            | 7                 | 1,539             | 0                  | 267                | 137                        | 13             | 1,389          |

# Phase 3: the effects of Covid based on geography

Data as of June 15, 2020: All activities are resumed and national travel is allowed

|                    | Daily Covid cases | Total Covid cases | Daily Covid deaths | Total Covid deaths | Hospitalized with symptoms | Intensive care | Home isolation |
|--------------------|-------------------|-------------------|--------------------|--------------------|----------------------------|----------------|----------------|
| North Italy        | 259               | 15,976            | 8                  | 16,457             | 2,018                      | 94             | 13,864         |
|                    | 2                 | 2,604             | 0                  | 4,012              | 517                        | 28             | 2,059          |
|                    | 1                 | 755               | 0                  | 1,978              | 38                         | 1              | 716            |
|                    | 11                | 1,500             | 3                  | 4,207              | 188                        | 13             | 1,299          |
| Tuscany (Central)  | 8                 | 489               | 3                  | 1,088              | 31                         | 16             | 442            |
| Lazio (Central)    | 3                 | 1,292             | 3                  | 811                | 304                        | 37             | 951            |
| Campania (South)   | 4                 | 289               | 0                  | 430                | 58                         | 2              | 229            |
| Apulia (South)     | 1                 | 410               | 2                  | 534                | 56                         | 2              | 352            |
| Sardinia (Islands) | 0                 | 33                | 0                  | 132                | 12                         | 0              | 21             |
| Sicily (Islands)   | 1                 | 805               | 1                  | 280                | 30                         | 4              | 771            |

# Post-Lockdown: How life has changed



Leaving home is allowed if social distancing and no-gatherings are respected.



Hybrid in-class and online education will be resumed from September.



Masks are mandatory in indoor spaces, on public transport, and at night.



In-office work resumes; some activities permanently shifts to online; many workers have lost their jobs.



Travels are allowed across regions and across borders. International travelers are allowed based on origin.



Goods movement resumes.

# Post-Lockdown: Mobility



# Post-Lockdown: Mobility

## DATI ANAMNESTICI

Ha avuto negli ultimi 21 giorni uno o più di questi sintomi?

|                 |                                  |                     |              |
|-----------------|----------------------------------|---------------------|--------------|
| Febbre > 37,5°* | Tosse*                           | Stanchezza*         | Mal di gola* |
| NO              | NO                               | NO                  | NO           |
| Mal di testa*   | Dolori muscolari e/o articolari* | Congestione nasale* | Nausea*      |
| NO              | NO                               | NO                  | NO           |
| Vomito*         | Perdita di olfatto o gusto*      | Congiuntivite*      | Diarrea*     |
| NO              | NO                               | NO                  | NO           |

## DATI EPIDEMIOLOGICI

Comunicare quanto di propria conoscenza

|  |  |  |
|--|--|--|
| Esposizione a casi accertati di COVID-19*    | Esposizione a casi sospetti di COVID-19*   | Contatti con familiari di casi sospetti di COVID-19* |
| NO   | NO   | NO   |
| Conviventi con febbre o sintomi influenzali* | Contatti con febbre o sintomi influenzali* |  |
| NO   | NO   |  |

Ha effettuato viaggi negli ultimi 40 giorni?\*

|    |
|----|
| NO |
|----|

vodafone IT

11:05 PM

41%

vodafone IT

11:04 PM

41%

## HEALTH DECLARATION



Please read carefully the following health requirements all passengers must fulfill:



Passengers haven't been diagnosed with COVID-19 during the 14 days prior to flight and haven't had symptoms during the 8 days prior to flight (fever, newly developed cough, loss of taste or smell, shortness of breath).



Passengers haven't been in close contact with a person who has COVID-19 (e.g. less than 2 metres for more than 15 minutes) and aren't required to be in quarantine by local or national regulation for a period that includes the date of the flight.

## HEALTH DECLARATION



Please note that all passengers must follow these rules at the airport:



Bring your own mask. You must wear it at all times.



Keep physical distancing of 1,5m during check-in and boarding.



Review the updated hand baggage policy.

By clicking on "Get boarding passes" you acknowledge all the previous health rules and regulations and understand **you must advise Volotea if this health declaration changes before going to the airport.**

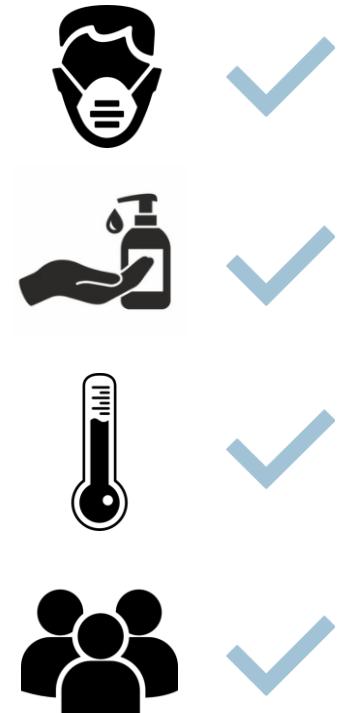
Go back

I understand, continue



Get boarding passes (2 of 2)

# Post-Lockdown: New social distance measures



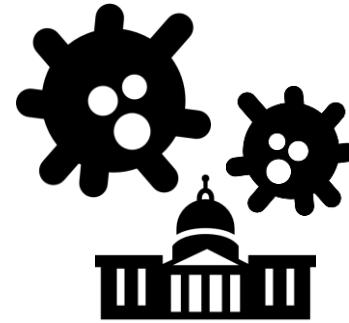
# Barriers & Government's preparedness



Shortage of medical supplies: masks, ventilator, medical wear.



National v. regional legislation: separate decisions; lack of coordination; different health systems



Timing of closure: the virus was circulating since January.



Lack of communication: unclarity on ordinances and bans.



Political divide: bureaucratic delays and conflicts.

# Mayors Launch a Green and Just COVID-19 Recovery Plan & Demand National Governments End Fossil Fuel Subsidies



# Learning from Italy's pandemic summary



- Italy's response to Covid-19 was characterized by 4 phases: Phase 0, Phase 1, Phase 2, Phase 3.
- Strengths: early closure of national and regional borders; masks and social distancing ordinance.
- Weaknesses: cross-region medical and political divide; non-essentials and tourism sector underwent a big economic crisis.
- Lessons learned: preparedness is not sufficient if policy decisions are not prompt and inclusive.



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METABOLISM  
OF CITIES



# Questions?



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August 24, 2020

# References and Sources

Ciro Indolfi and Carmen Spaccarotella J Am Coll. Cardiol Case Rep 2020; 2:1414-1418.

Paolo Miranda. 2020. Italy has a world class health system. The coronavirus has pushed it to the breaking point. NBC News. Cremona, Italy. <https://www.nbcnews.com/health/health-news/italy-has-world-class-health-system-coronavirus-haspushed-it-n1162786>

Claudio Furlan. 2020. Coffins arriving Bergamo. Business Insider, Milan, Italy.

<https://www.businessinsider.com/coronavirus-covid-19-victims-bodies-burials-morgues-cemeteries-photos-2020-4>

Dipartimento della Protezione Civile. 2020. Covid Data. <http://www.protezionecivile.gov.it/>

Ministero dell'Interno. 2020. <https://www.interno.gov.it/it/speciali/coronavirus>

Statista. 2020. Coronavirus (COVID-19) deaths in Italy as of August 11, 2020, by age group.

<https://www.statista.com/statistics/1105061/coronavirus-deaths-by-region-in-italy/>

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