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

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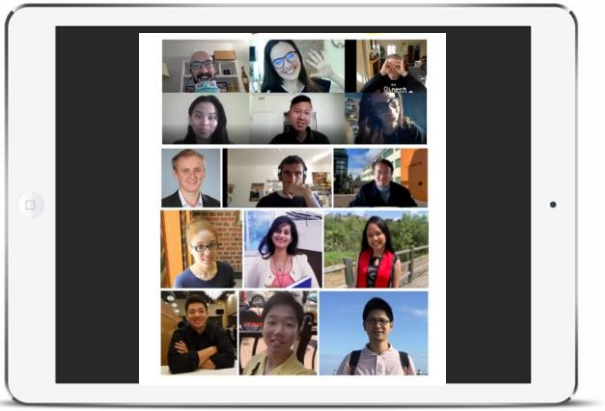
August 24, 2020

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!

crowdfight COVID-19

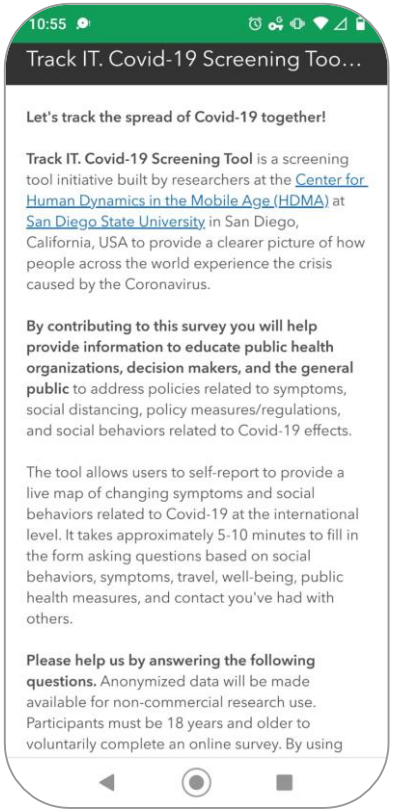
HDMA @SDSU
THE CENTER FOR HUMAN DYNAMICS IN THE MOBILE AGE

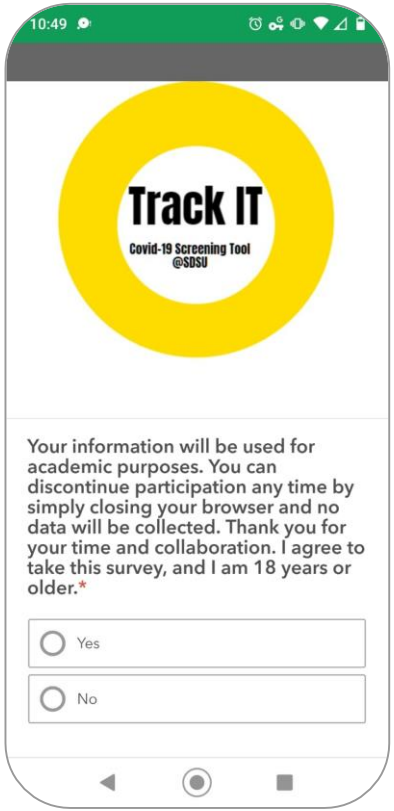
POLITECNICO MILANO 1863

METABOLISM OF CITIES

SAN DIEGO STATE UNIVERSITY

Track IT. Covid-19 Screening Tool @ SDSU





Help us track Covid-19!

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

Preliminary findings

Track IT. Covid-19 Screening Survey Tool @ SDSU

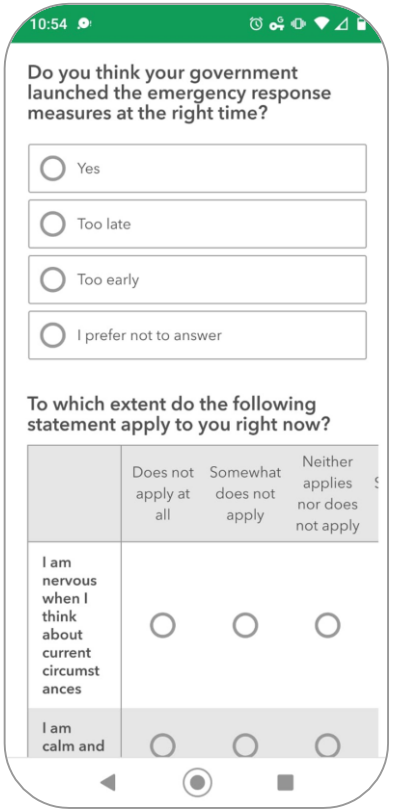
Track IT
Covid-19 Screening Tool @SDSU

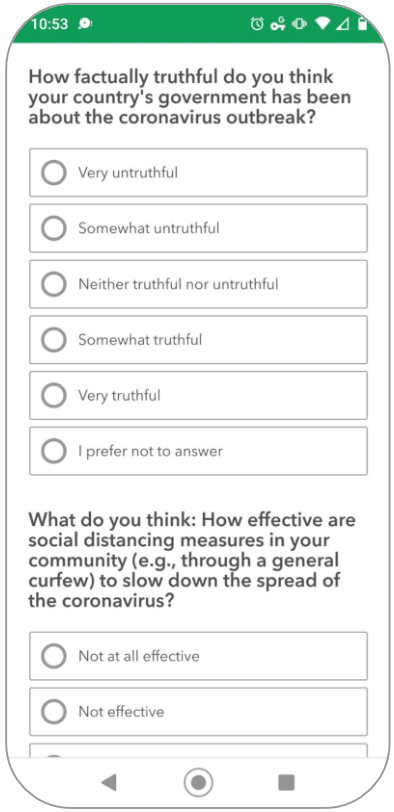
Take a picture of the QR Code to take the survey!

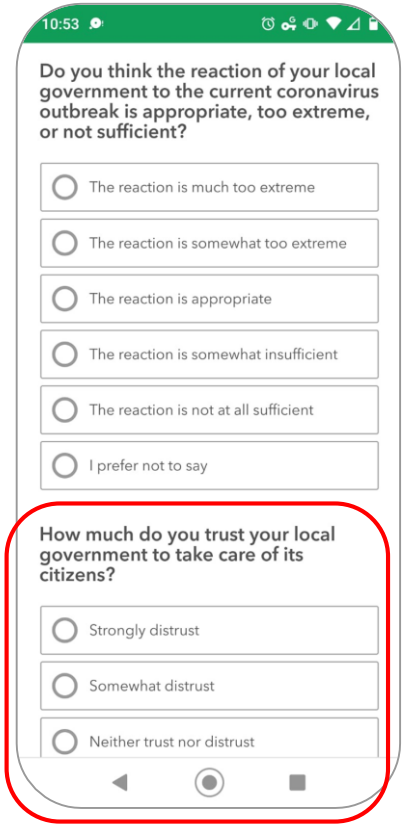
Preliminary findings:

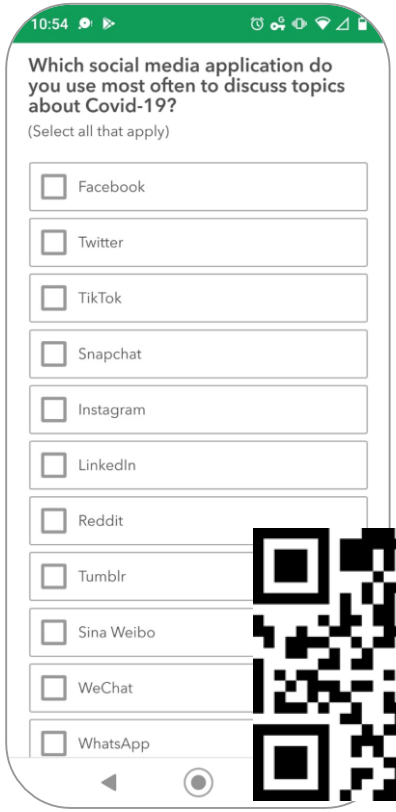
- **207 participants from across the world**
- **International survey:** https://arcg.is/1jCXqy
- **Duration: 5-10 minute**
- **Covid-19 effects, behaviors, well-being, health, policy, trust, socio-economic and more.**

Track IT. Covid-19 Screening Tool @ SDSU

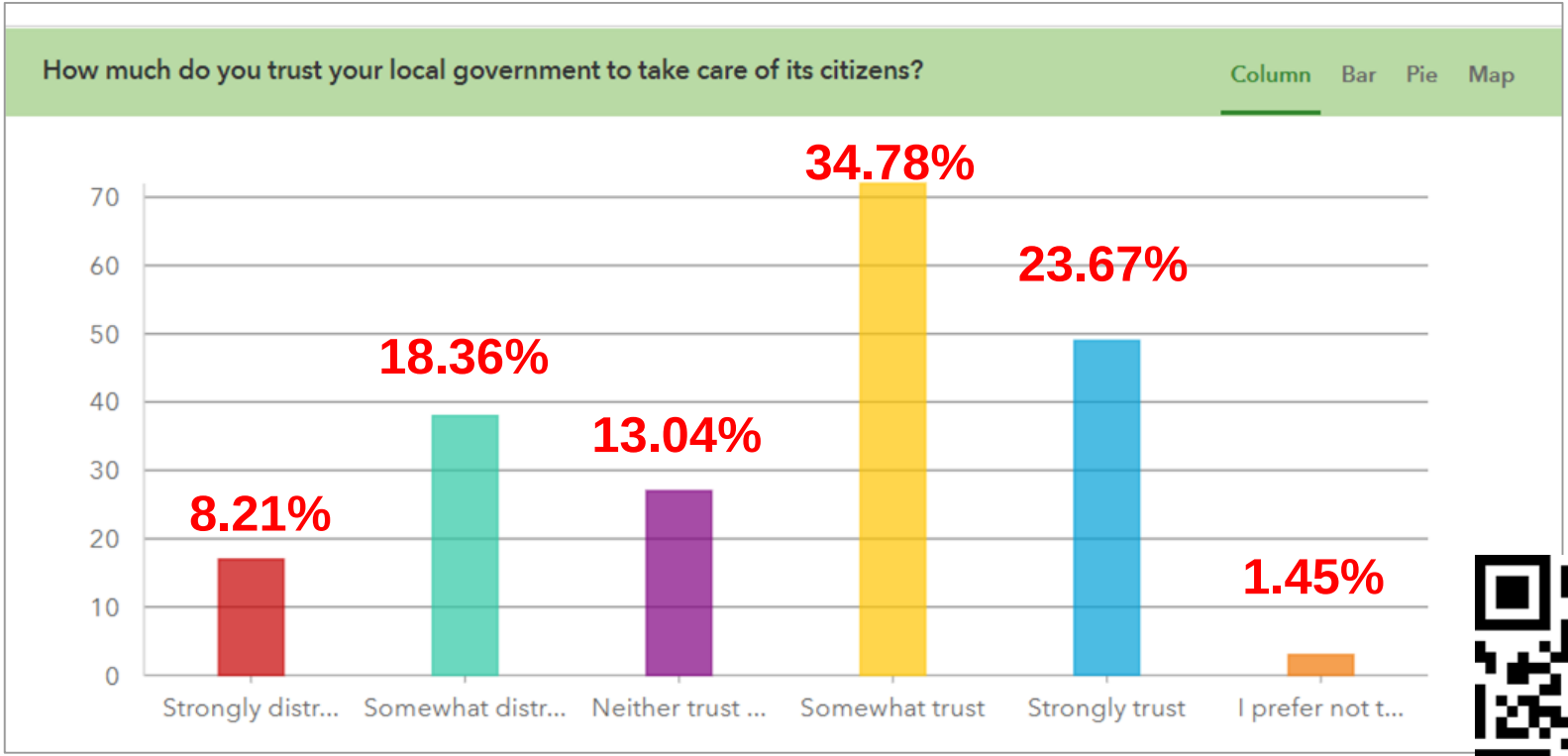








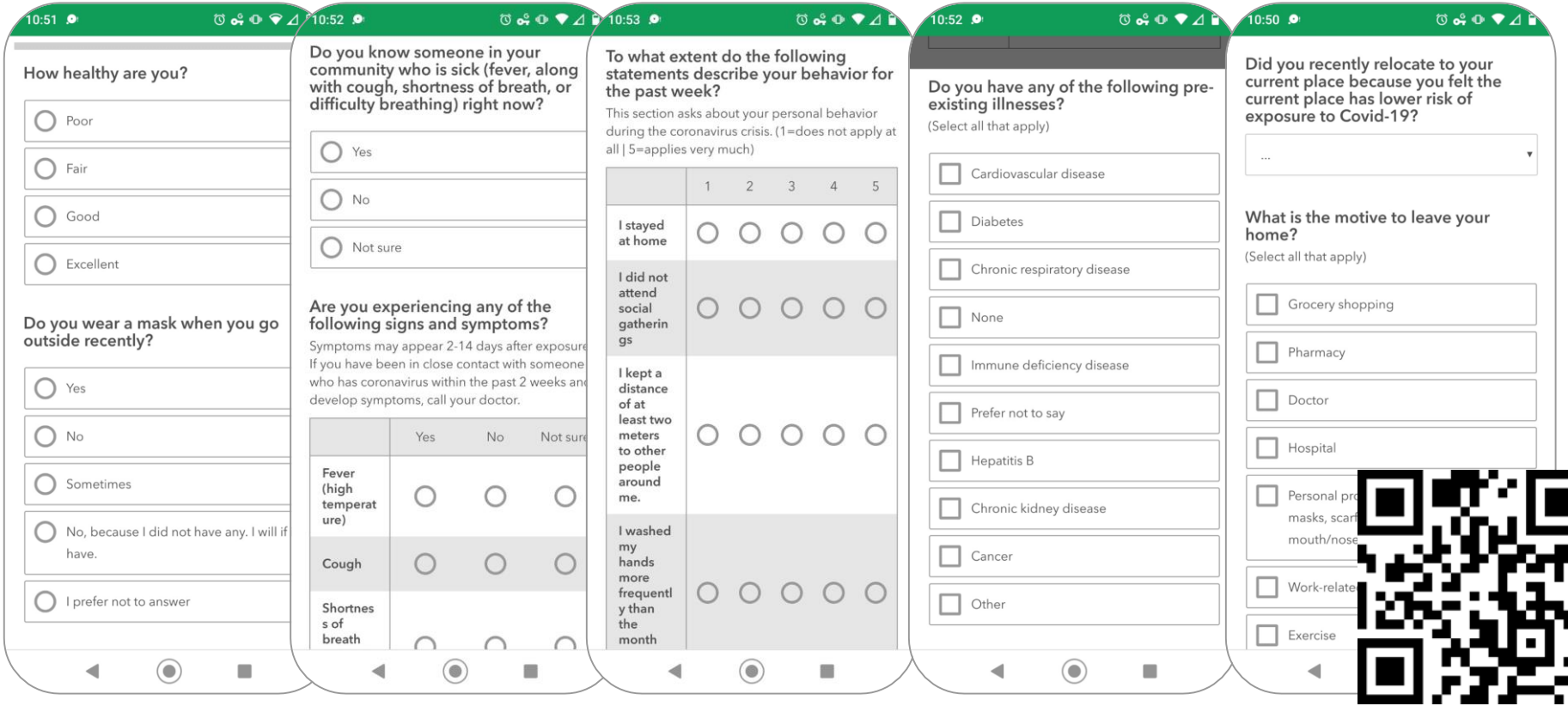
Track IT. Covid-19 Screening Tool @ SDSU



Track IT. Covid-19 Screening Tool @ SDSU

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

Track IT. Covid-19 Screening Tool @ SDSU



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**

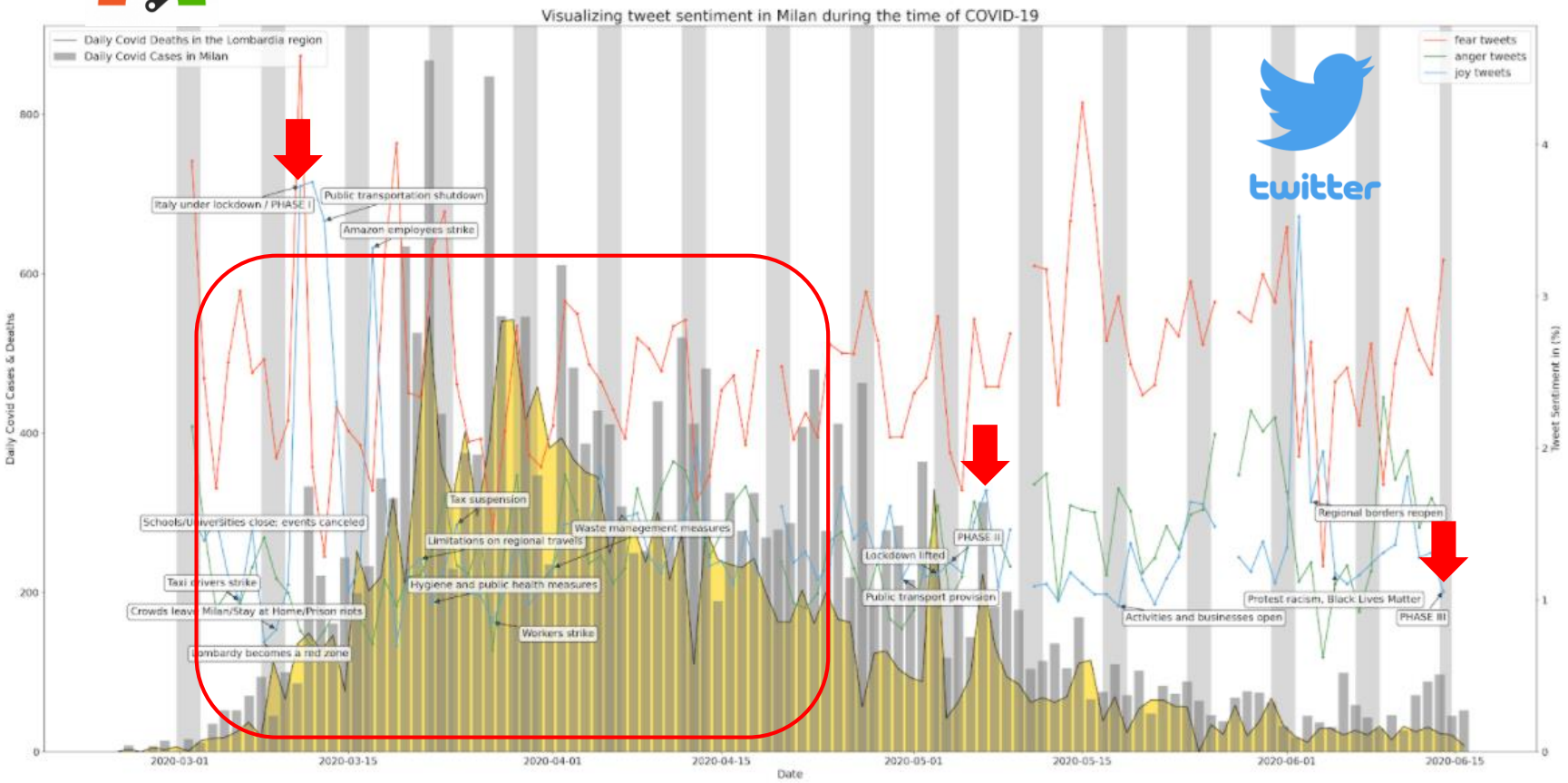
Islands
- **Palermo**
- **Cagliari**

Over 4 million Tweets!

twitter

Phase 0 **Phase I** **Phase II** **Phase III**

Monitoring Milan's sentiments during Covid-19

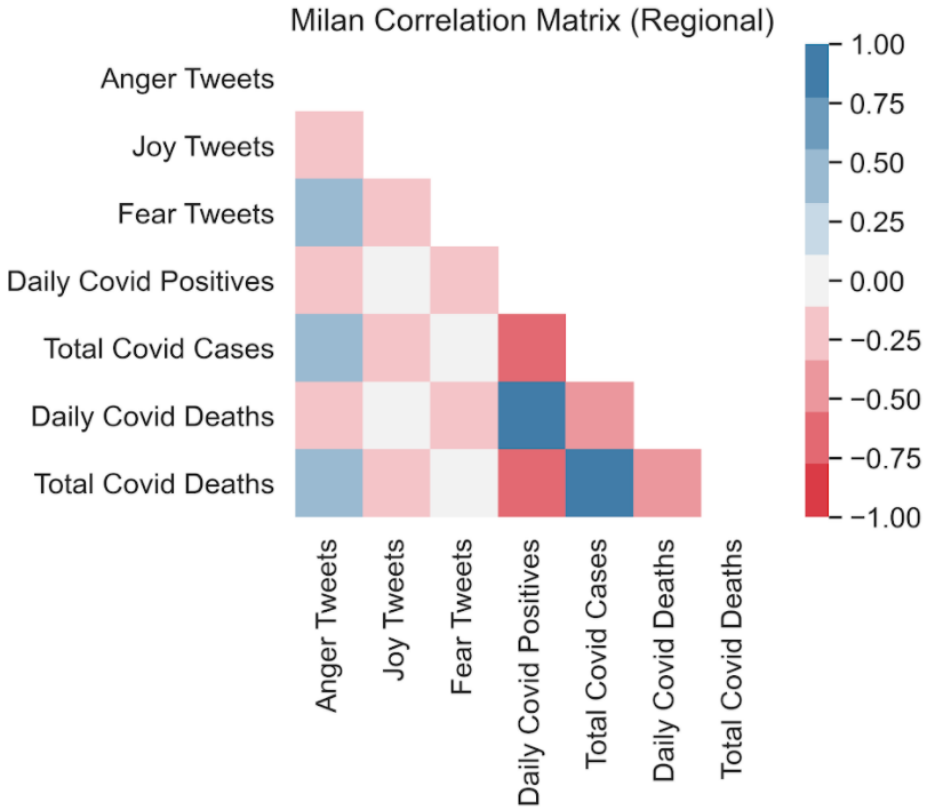


Monitoring Milan's Sentiments During Covid-19

Preliminary findings:

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

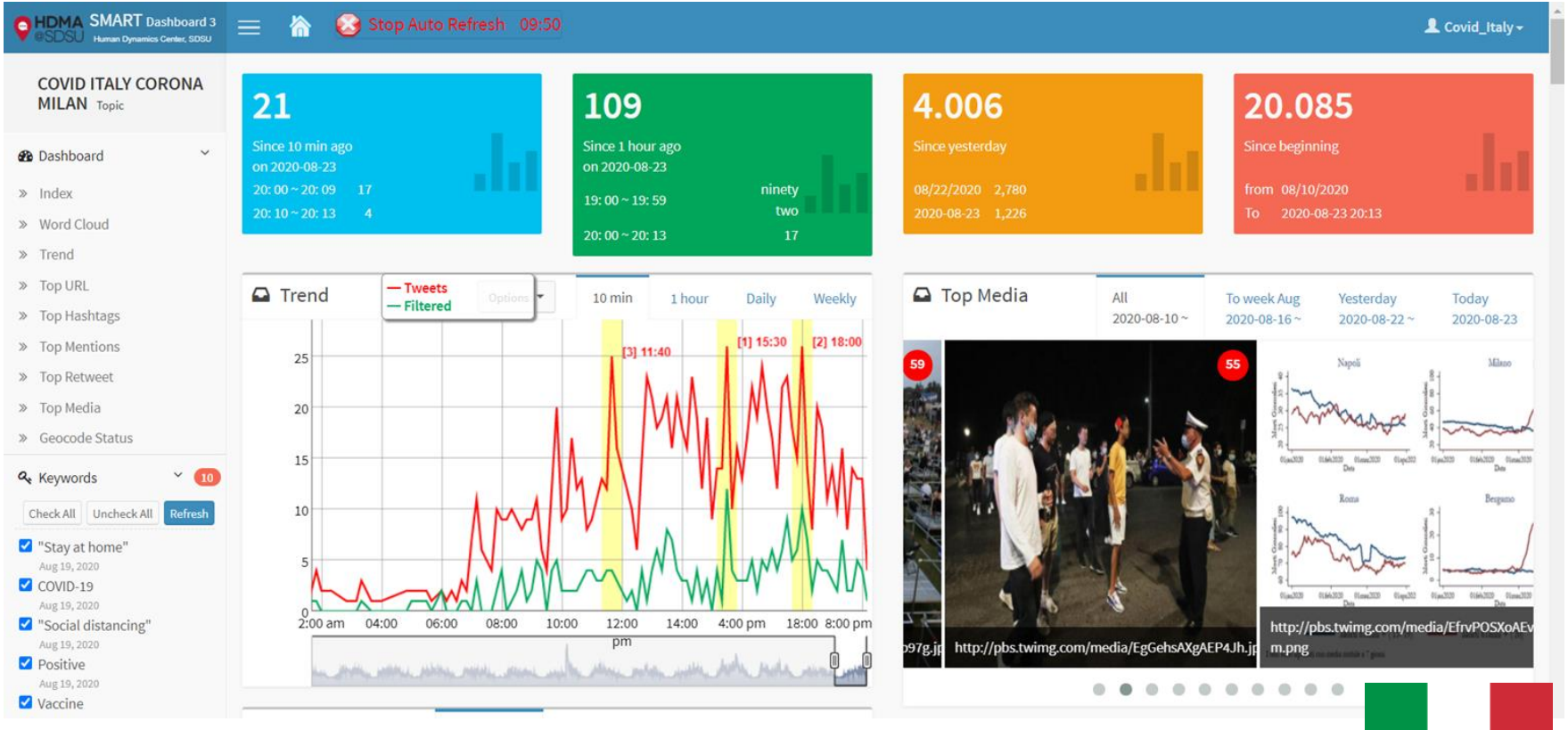
(Policy influences)



Smart Social Media Dashboard: 10 Italian Metropolitan Cities

Type	Metropolitan city	Region	Area (km^2)	Population (n)
North West	Milan	Lombardy	1,575	3,190,340
	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



Developed by Dr. Calvin June, Dr. Jiue-An Yang, Dr. Su Yeon Han, and Chris Allen. Curator: Jaehee Park, 2020.

Word Cloud

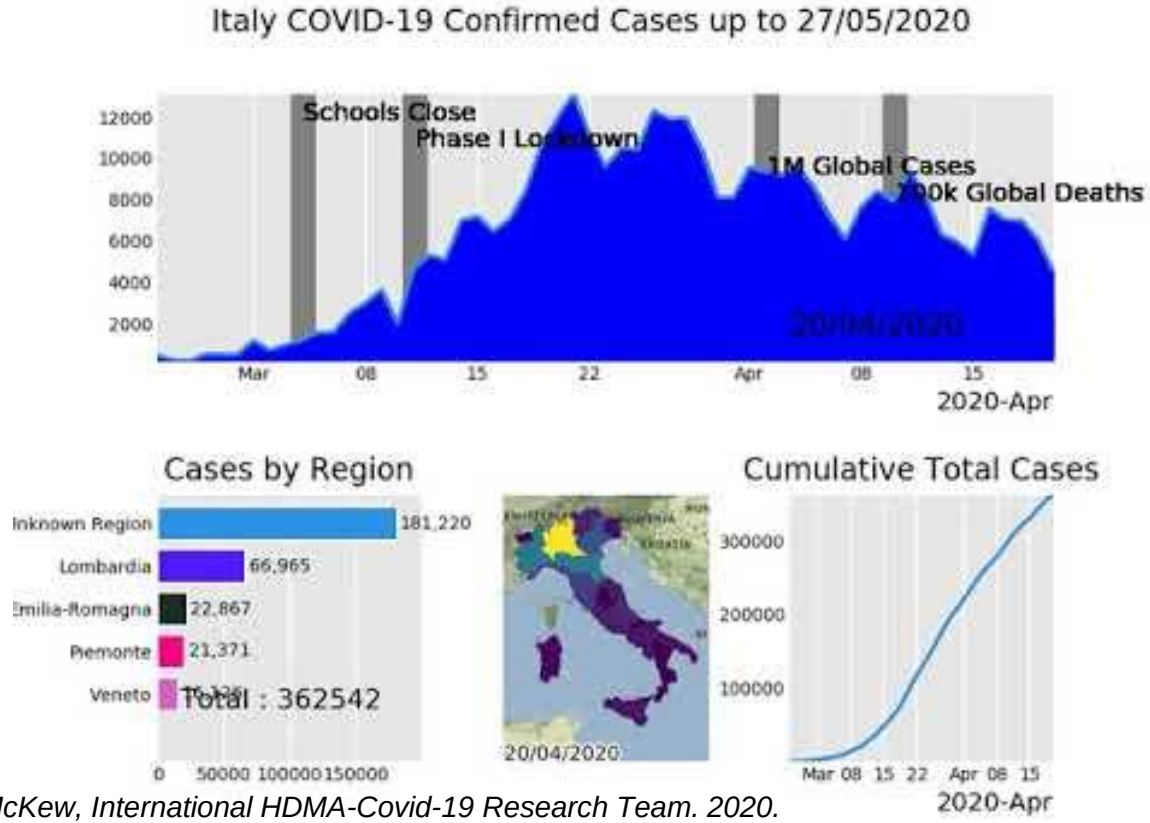
All
2020-08-10 ~

To week Aug
2020-08-16 ~

Yesterday
2020-08-22 ~

Today
2020-08-23

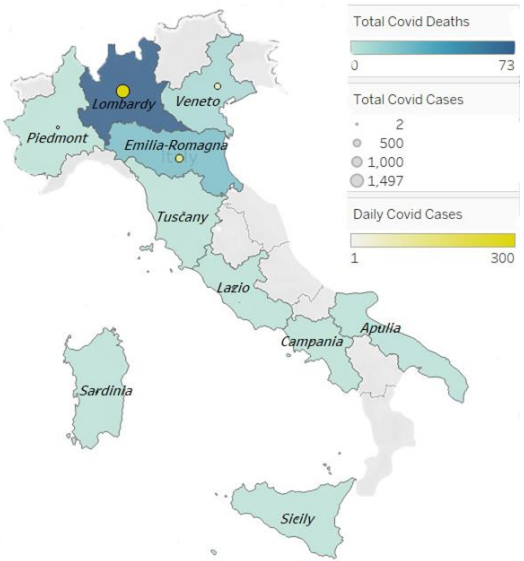
Covid-19 Confirmed Cases: Italy's Animated Statistics Over Time



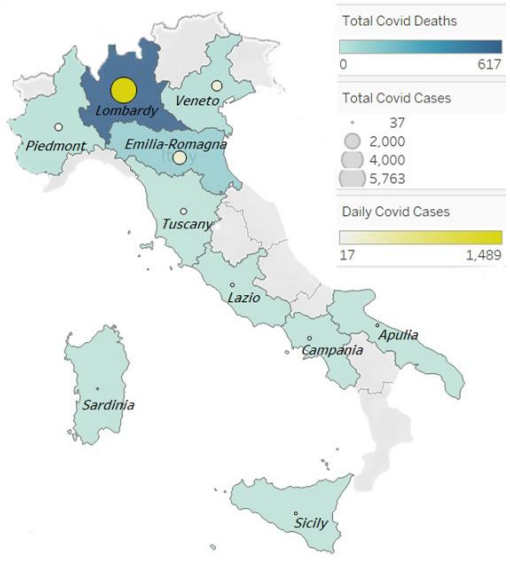
Developed by Jack McKew, International HDMA-Covid-19 Research Team. 2020.

The Start of Covid-19 in Italy

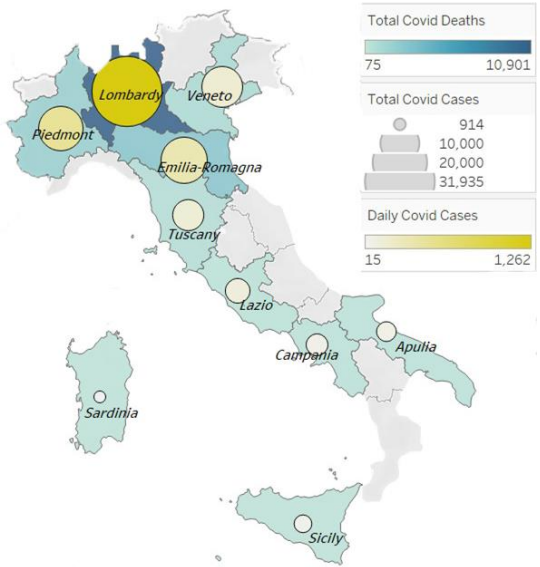
Timeline of Covid-19 spread



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
Lombardy (North-West)	1,262	31,935	280	10,901	12,028	1,143	18,764
Piedmont (North-West)	474	12,765	97	1,826	3,344	379	9,042
Veneto (North-East)	174	10,766	26	882	1,427	245	9,094
Emilia Romagna (North-East)	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)

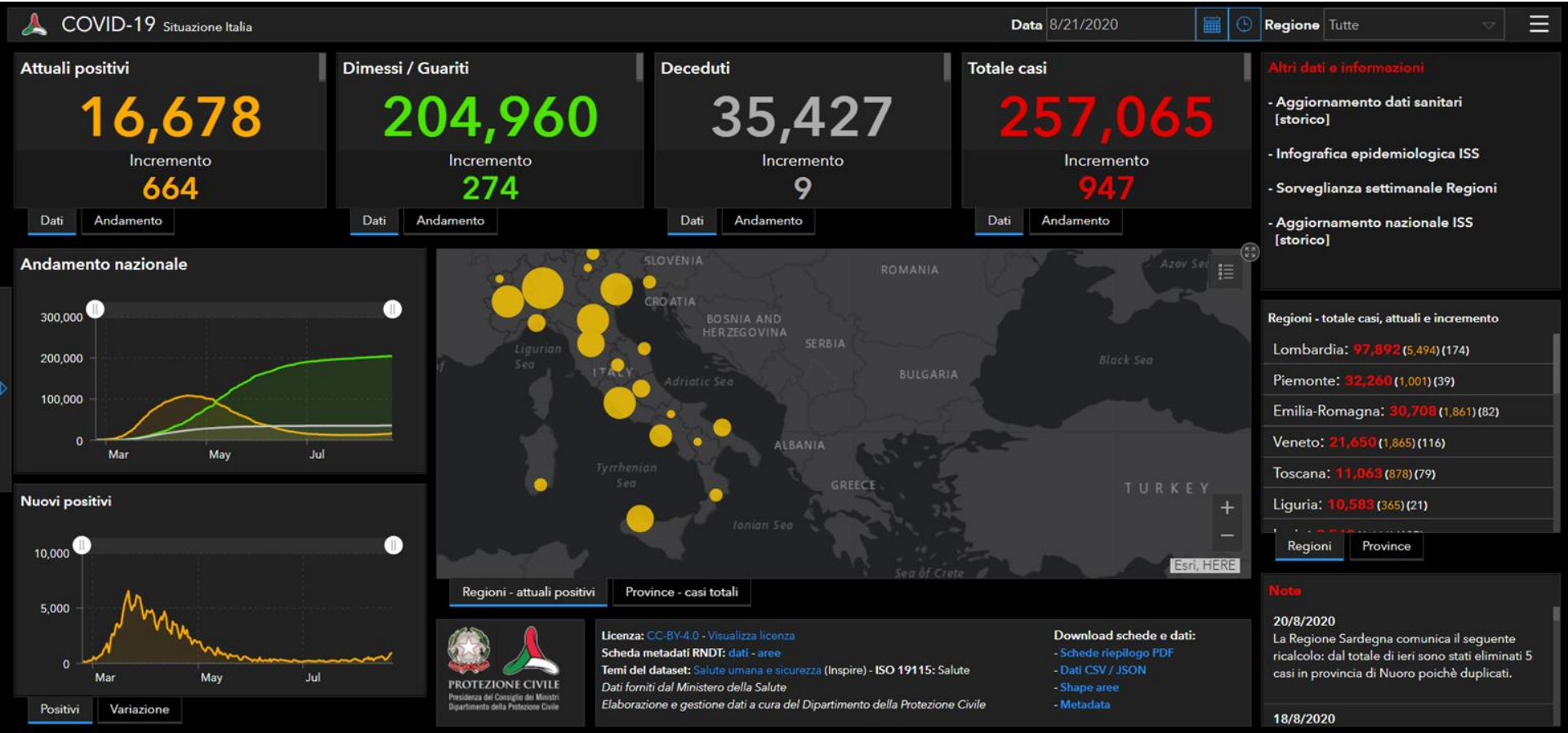
- Lodi, Lombardy (Patient Zero)
- Venice (First Death: Feb 21, 2020, (78 year old)
- Bergamo
- Brescia
- Milan

Lodi, Italy (Lombardy)

Venice, Italy (Veneto)

Brescia, Italy (Lombardy)

Italy Open Data Dashboard (Protezione Civile, 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 (Lazo): Before

Rome, Italy (Lazo): After

Milan, Italy (Lombardy)

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.

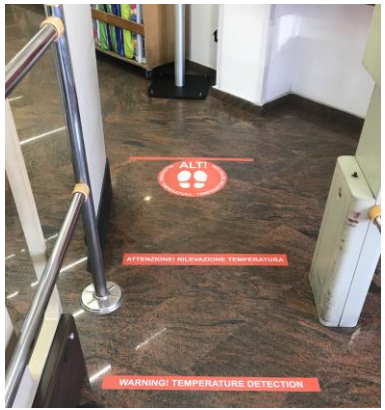
All travels are suspended and public transport are reduced to minimum activity.

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 dichi

- 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.**

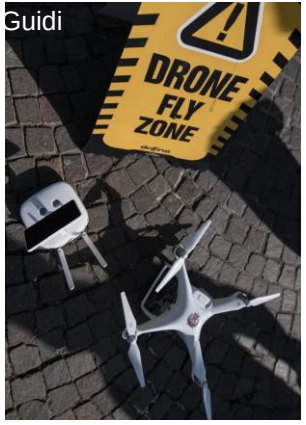
A questo riguardo, dichiara che _____ *(lavoro presso …, devo effettuare una visita medica, urgente assistenza a congiunti o a persone con disabilità, o esecuzioni di interventi assistenziali in favore di persone in grave stato di necessità, obblighi di affidamento di minori, denunce di reati, rientro 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



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

Tracking devices:

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

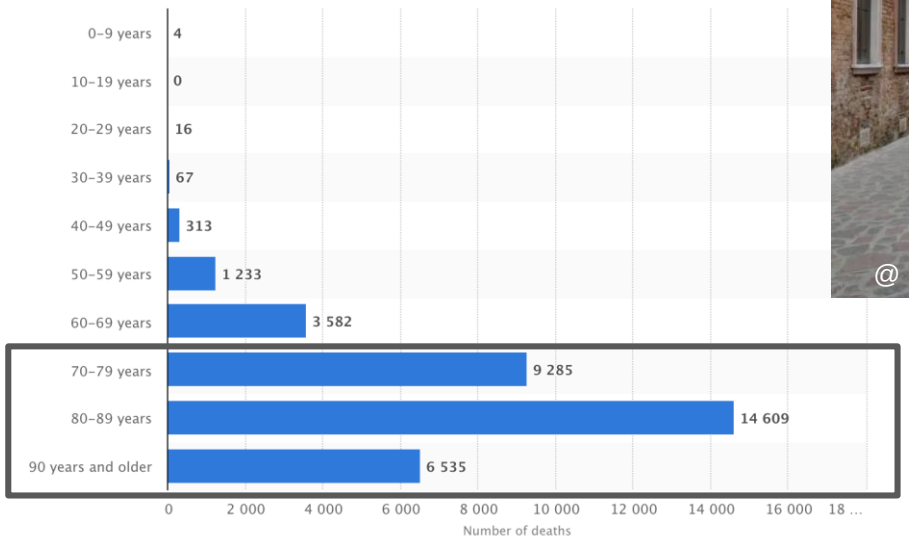
Penalties:

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

Social Response & Solidarity

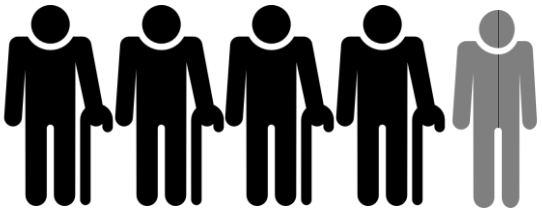
Social Response & Solidarity

Covid-19 victims: Who is the most affected?



@ Manuel Silvestri/Reuters

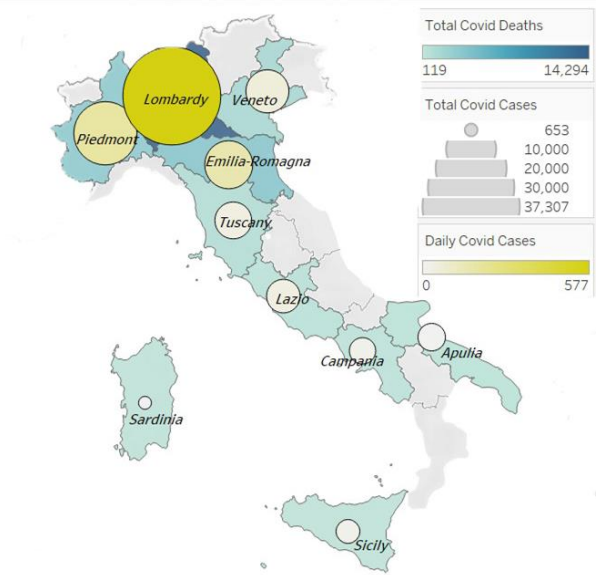
@ il Mattino di Padova


@ Statista

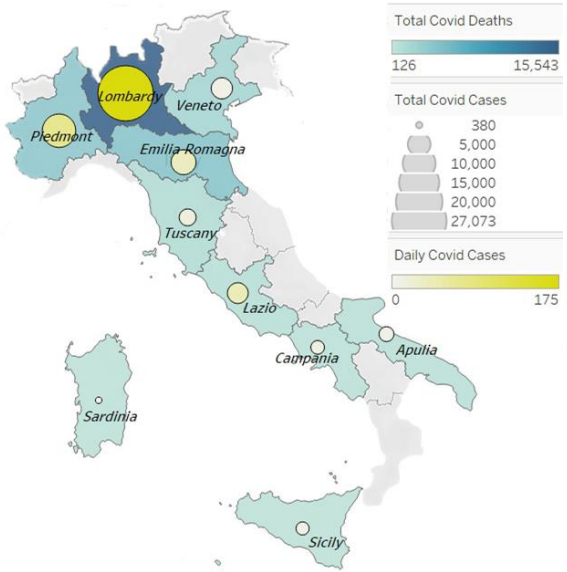
70+

- **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.**

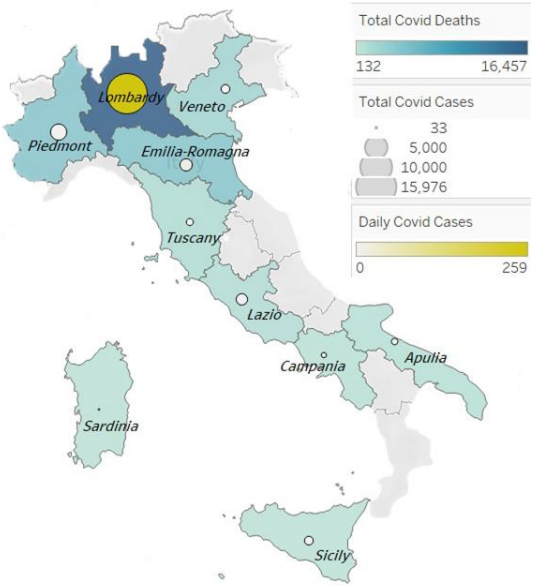
Timeline of Covid-19 spread



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
Lombardy (North-West)	259	15,976	8	16,457	2,018	94	13,864
Piedmont (North-West)	2	2,604	0	4,012	517	28	2,059
Veneto (North-East)	1	755	0	1,978	38	1	716
Emilia Romagna (North-East)	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.

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

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

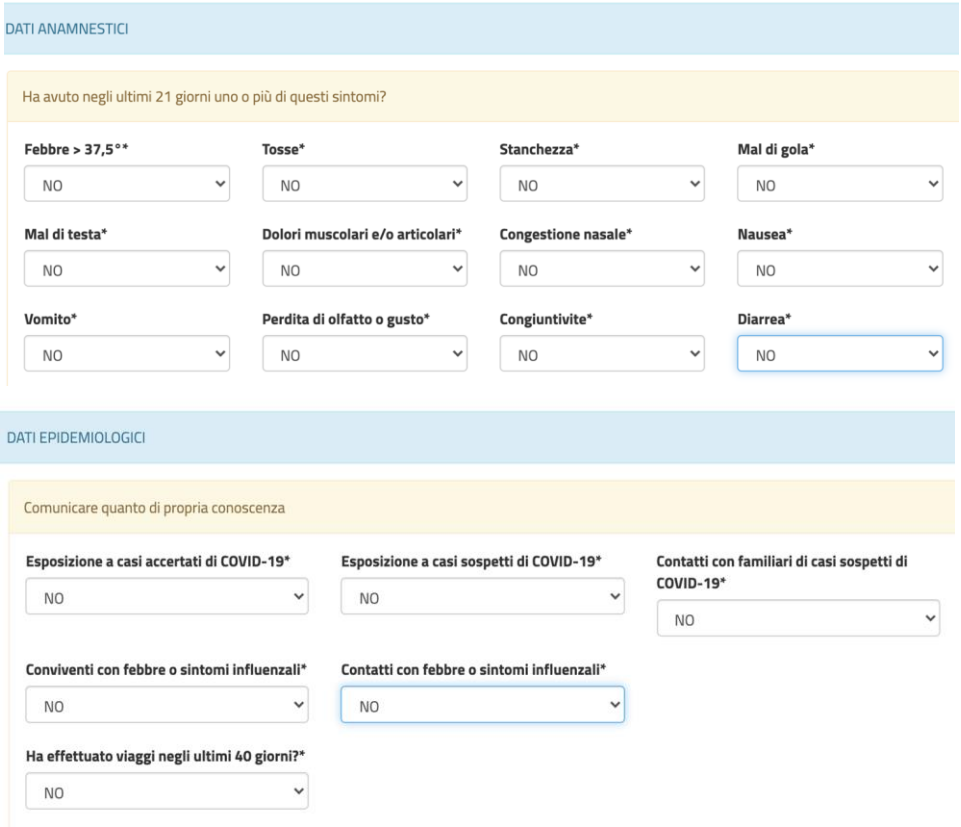
Hybrid in-class and online education will be resumed from September.

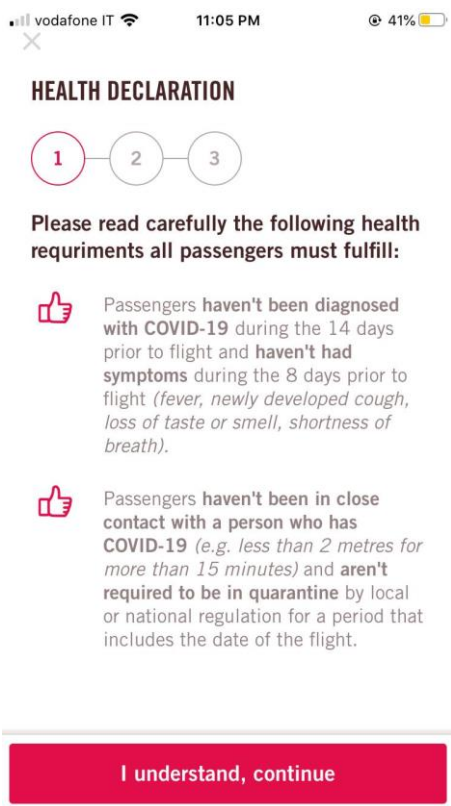
In-office work resumes; some activities permanently shifts to online; many workers have lost their jobs.

Goods movement resumes.

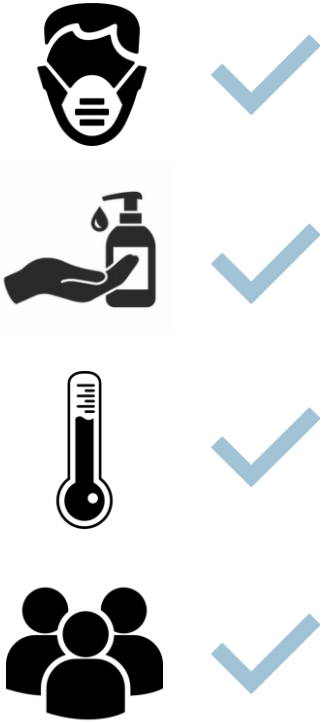
Post-Lockdown: Mobility

Post-Lockdown: Mobility



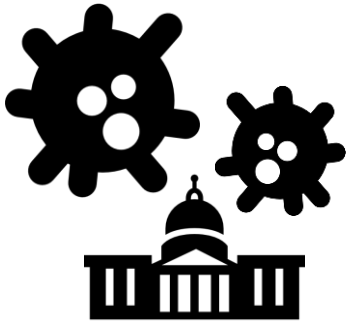


Post-Lockdown: New social distance measures



Barriers & Government's preparedness

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



Lack of communication: unclarity on ordinances and bans.

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

Timing of closure: the virus was circulating since January.

Political divide: bureaucratic delays and conflicts.

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

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World Health Organization

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.**

Questions?

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