

Global health-care facilities their **monitoring** and **adequacy** to cope with **extreme** environmental emergencies and ... (... under severe epidemics)

Andreas Skouloudis

21 days in lockdown (expected 34 days more)

John Balbus

National Inst. of Environmental Health Sciences
11 days (in partial) lockdown



27 Mar. 2020

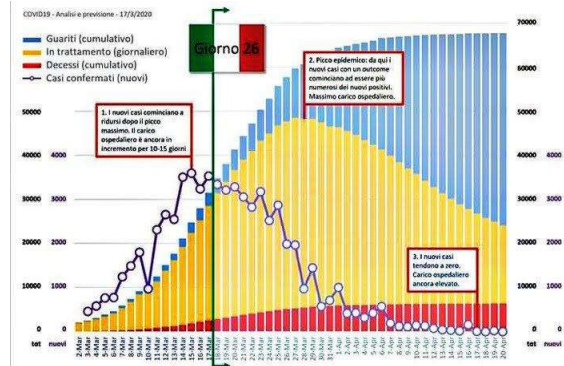
GEO GROUP ON
EARTH OBSERVATIONS

*Serving society
Stimulating innovation
Supporting legislation*

Data ... from the evolving ITL 2020 outbreak.

From the **daily** epidemic bulletin on
26 Mar 2020, 6pm:

- 600-650 daily **deaths**,
(with 35+ hospital doctors in total with pensioners and reserves called in).
- 3,000+ daily new **cases**;
- ~900 daily cured cases;
- Need of 100 million masks/month (only in Italy for March), 10000+ respiratory ventilators, hundreds of medium and intensive care beds;
- Diagnostic samples (30-40€ per sample), rapid confirmation method, Medicines for fever and respiratory diseases;



Emergency Hospitals constructed (at ...exhibition buildings)

Components:

Facility and its management.
Physical infrastructure.
Outreach services.
Supply facilities systems.
Disposal systems.
Technical medical equipment.
Information Communication Technology.
(Adaptation capabilities for outbreaks)
(New concept of sensitive/reliable data)



<https://www.youtube.com/watch?v=ZicURsm2Q8c>

GEO Health Community of Practice (EO4HEALTH 2020-2022)

...and the need of horizontal collaboration several teams

Elements not considered yet: Geolocation of cases and current weather conditions.

- Mobile phones useful for lockout compliance (e.g. Greece linear instead of exponential growth) but not for verification of social transmission.
- Exponential, linear or contained increases are location and not country specific.
- Neither numerator (cases-testing problems) or denominator (population movement) data are very reliable. Variation in testing strategies complicates national level comparisons
- Areas with small temp variations and low humidity seem to be less influenced.

Regione	AGGIORNAMENTO 22/03/2020 ORE 17.00							
	POSITIVI AL nCoV				DIMESSI/ GUARITI	DECEDUTI	CASI TOTALI	TAMPONI
	Ricoverati con sintomi	Terapia intensiva	Isolamento domiciliare	Totale attualmente positivi				
Lombardia	9439	1142	7304	17885	5865	3456	27.206	70.598
Emilia Romagna	2429	269	3692	6390	349	816	7.555	28.022
Veneto	1113	255	3276	4644	309	169	5.122	57.671
Piemonte	2118	308	1701	4127	10	283	4.420	12.701
Marche	816	138	1277	2231	6	184	2.421	6.391
Toscana	706	215	1223	2144	42	91	2.277	13.264
Liguria	736	132	483	1351	143	171	1.665	4.995

Big-data for efficient handling of emergencies @ the GEO Health Community of Practice

Assessment of **population** health care capabilities
(associated with environmental exposure).

Adequacy of health care infrastructure facilities
under usual and acute events
(10% fatality instead of 3.5%).

Testing of health infrastructure needs during
humanitarian interventions.

Coupled remote sensing with static in-situ
observations for **real-time** processes (not
relevant to virus but for the aftermath effects).

Moving population densities (with e-passports) and

Assessment and **adaptation** of health needs
(intelligent with **in-situ** technologies).

<https://twitter.com/davcarretta/status/1238791068071661568>

