

Fight Coronavirus, ALL OF US – a plea from Italian Professionals in Boston

None of us should be leaving our houses unless absolutely necessary.

We are a group of Italian scientists and professionals in the greater Boston area who are in daily contact with colleagues in Italy, including in Lombardy, a region severely affected by COVID-19.

We are writing to make you aware of critical information about the COVID-19 emergency and how we can all have a role in reducing the impact of this virus on our lives. Please help us by sharing this open letter.

As of March 13th, 71 primary care physicians in Bergamo (a Lombardy town of 120,000, near Milan) were infected with COVID-19, as were 600 physicians across Italy.¹ During the week of March 8-14, approximately 330 people died in Bergamo, compared to 23 deaths registered in the same week in 2019. Funeral homes do not have enough room for bodies, and these are now kept in churches.² Lombardy is one of the richest areas of Italy, with an excellent public health system, where good clinical care is given to all, and yet it is overwhelmed by this pandemic.

Since March 9th, Italy is in lockdown, which means all gatherings, including mass services, are now banned. People are leaving their houses only for food, emergencies and medicines.

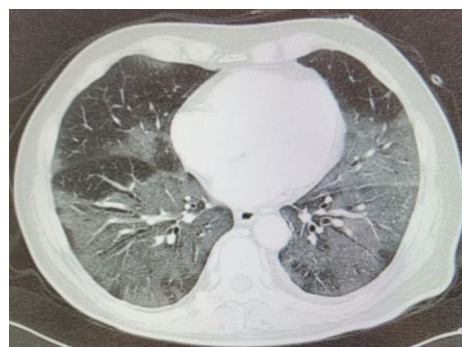
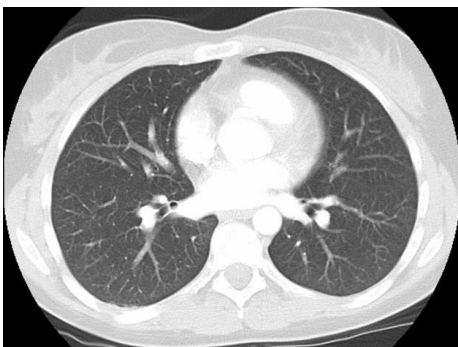
This is not a virus that humans are used to, like the flu; this is a virus that comes from animals., Humans have no partial immunity, and infection is highly contagious.

Seniors over the age of 80 were initially the most seriously affected, but as the virus has spread, the average age of the patients needing intensive medical intervention, such as intubation, is decreasing. Conversely, many 40 and 50 year-olds are being hospitalized, just as was observed in China.³ In the Netherlands, currently half the patients requiring intensive care are under 50.⁴

A colleague and friend, a physician in his late 40s, and who had not knowingly seen patients who had tested positive for the virus, was recently hospitalized with Coronavirus-related pneumonia, along with his wife, and needed oxygen to survive. He has never smoked, and does not have any known risk factors such as diabetes, respiratory or cardiac problems. Healthcare workers in northern Italy are fighting like warriors, they are the true MVPs this year. Here is a widely shared photo of nurse Elena Pagliarini, exhausted during a recent “normal” workday in Italy. Soon it will be up to US health workers to take on this battle.



Recent data from Italy suggests 10% or more of infected people can't breathe without an oxygen mask, and 5% of these need to be intubated.⁵ Since the infection is in the lung, access to oxygen determines whether you live or die.



CT scan of a healthy individual on the left, and of a patient with Coronavirus-related interstitial pneumonia on the right^{6,7}

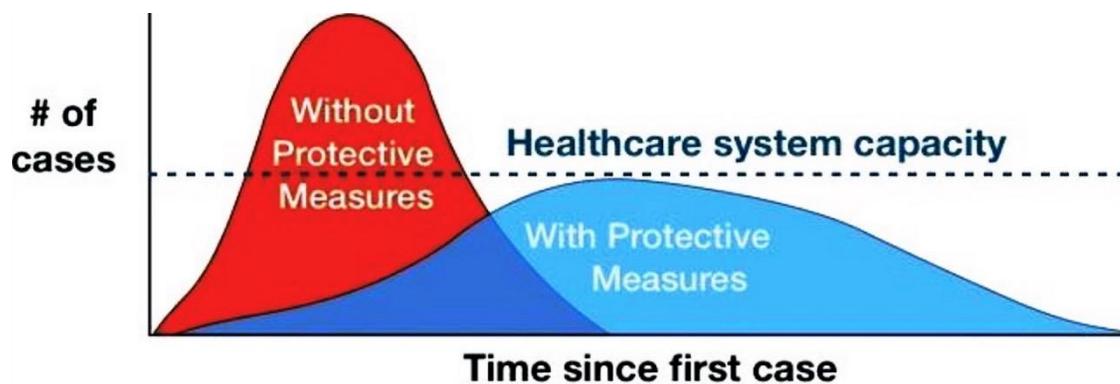
The death rate of infected cases in Italy is reported to be about 3.5%, similar to China and higher than Korea, where testing and quarantine practices were strictly enforced after the first cases were reported.

If you are young and think this is not your problem, think again: While this virus is most deadly to people older than 80, or those who are younger and suffer from diabetes, cardiac or respiratory issues. These could be your parents, your sisters, brothers, or friends. As ICU beds fill up, individuals in their 60s or younger people suffering from other chronic diseases are at risk of not receiving respiratory support, because hospitals will be taxed beyond capacity. Being in hospital exposes people to further infections. In addition, as the infection spreads, more people in their 40s and without concomitant pathologies are in need of hospitalization, with some dying, as we see happening in Italy. They die alone, as families are not allowed to approach them due to the risk of contagion.

During the incubation phase (up to 14 days) you may have no symptoms, but can spread the virus. One estimate is that each non-symptomatic infected person can infect up to 10 people.⁸ How many of your direct connections would suffer greatly, because you did not stay home? A recent study shows that the virus can live on plastic and metal for up to three days and on cardboard for up to one day, so anything you touch with a dirty hand can transmit the infection.⁹

Hospitals are normally not equipped for the possibility of hundreds of patients turning up at the same time, and all needing the same intensive interventions. Yet this is the reality in an increasing number of hospitals in Italy, and doctors are having to make a difficult choice about who gets to live. This may happen in the United States.

Italy had more than 1,000 infected people on February 29, more than 5,000 on March 7, more than 10,000 on March 10, more than 20,000 on March 14, more than 30,000 on March 17.¹⁰ The number is doubling approximately every 3 days. For additional perspective, 10% of 10,000 infected people is 1,000. 10% of 20,000 infected is 2,000. 5% of 30,000 infected is 1,500 people needing to be intubated. No health care system has enough ICU beds or ventilators to cope this kind of a sudden influx. In 2005, the US government calculated we would need 740,000 ventilators in case of a severe infectious pandemic; less than 170,000 would be available as of February 2020.¹¹



Adapted from CDC / The Economist

Avoiding concentration of cases (flatten the curve) keeps hospital resources available for the sick¹²

Italy was the first EU Country to stop flights to and from China, on January 31st, following the positive test and subsequent hospitalization of two Chinese tourists in Rome.

Italy has provided hospitals with a Coronavirus test since January, allowing people to get tested, at no cost, whether they were symptomatic or not. Whether they were rich or homeless, all had (and still have) free access to healthcare.

Most people who are required to have contact with other people, such as employees of retail shops (e.g. pharmacies, supermarkets, gas stations, newspaper sellers) are allowed to stay open if they wear a mask.

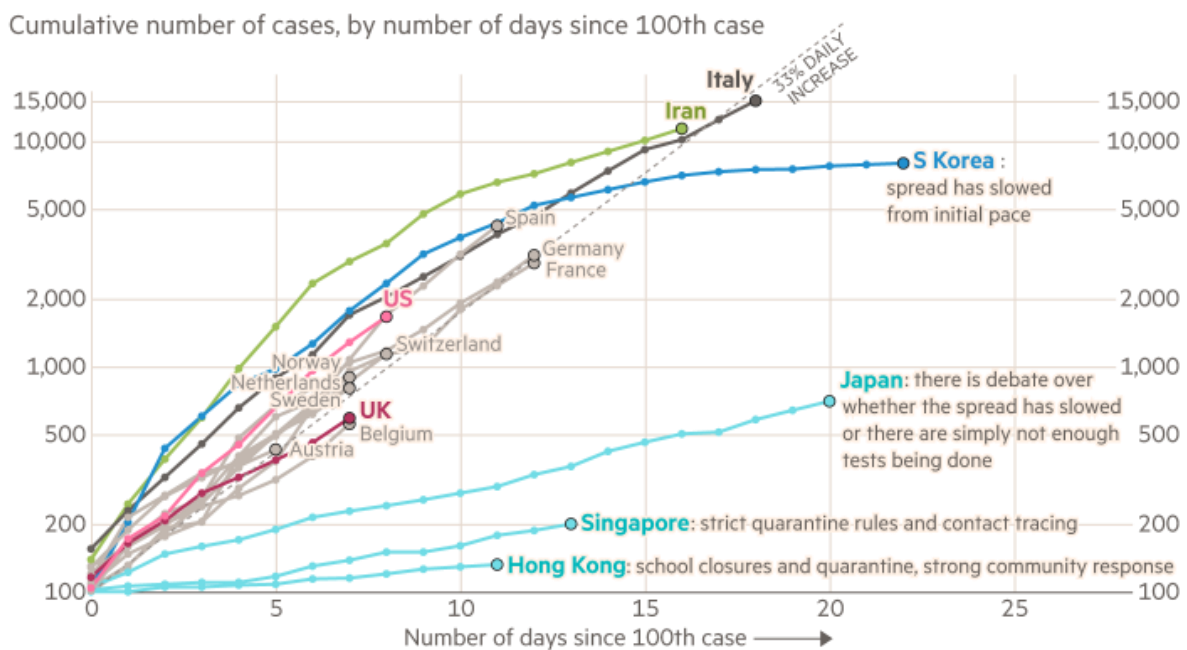
Italy first closed off infection-cluster towns, then regions. Now the whole country is on shutdown. Food delivery services have increased, while supermarkets continue to offer food and household products. The government will give each family 600 euros to pay for babysitting if parents have to work, 1000 euros to families with relatives in need of healthcare.¹³

In the U.S., we have had time to prepare for what is coming. Regardless, preparations are sorely inadequate. Last week, friends were refused Coronavirus testing at Boston hospitals despite reporting that they had a cough and fever for days. They were told tests are not available. Nor did the U.S. enforce quarantine for travelers from affected areas. As of March 15th, friends reported Logan screeners were not taking temperatures or asking questions to travelers coming from Europe, who walked straight into Boston.

As of March 16th, too many people have been lining up with no social distancing at the post office or cash at registers in retail stores. Lexington held a farmer's market at the Waldorf school. No social distancing. Likewise, a farmer's market in Norwood, held groups of people talking near each other with no masks. There are parents organizing playdates and asking on social media if a particular museum or play space might still be open. In South Boston, many held St. Patrick's Day parties. Meanwhile, on March 14th, an MGH colleague reported many hospitalizations for those with severe respiratory problems and lack of adequate testing.¹⁴

Based on the ratio of asymptomatic to symptomatic people, the scarcity of tests and few people required to follow strict isolation, we can surmise that many asymptomatic people are walking around and infecting others. For example, two asymptomatic infected scientists, who recently attended a meeting at Biogen (a local biotech company), infected 70 additional employees located in Massachusetts alone.¹⁵ Biogen had asked to test a group of symptomatic employees, but Massachusetts health authorities declined.¹⁶

The rate of new infections in the US (based only on the known cases, which largely underestimate true cases given the lack of test kits provided to hospitals) is on the same trajectory as France, Spain, Germany and Italy.



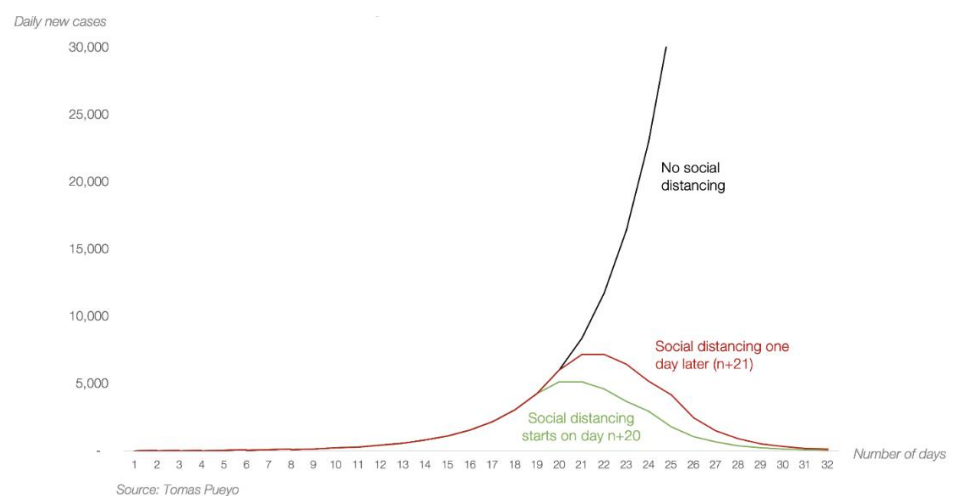
FT graphic: John Burn-Murdoch / @jburnmurdoch
 Source: FT analysis of Johns Hopkins University, CSSE. Data updated March 13, 16:00 GMT
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Cross-Country comparison of Infection curves¹⁷

How long will it take before we have 10,000 infected and 1,000 in the ICU, on the East Coast alone? We are just a few weeks behind Italy, and it is reasonable to assume that what happened there will happen here. It takes 2-10 days in most cases to experience initial symptoms, and about 3 weeks to require oxygen in severe cases. In early April, we may see a peak of severe cases, but the numbers will likely be higher by the end of April, when many people who acted irresponsibly at the end of March and in early April will require hospitalization and result in a rising rate. It is hoped that by mid-May we will be past the peak. Even then, we will have to keep inbound travelers quarantined in hotels for two weeks, monitored by a health official, as is currently happening in China.

We must take this very seriously, my fellow Americans. Request that all non-essential travel and gatherings are banned; that only non-essential shops are closed, that food and necessities are available to the public. Stay home. If you need to go out, keep your distance from one another. If appointments at hair and nail salons, gyms, spas, and scheduling playdates are priorities that cannot be postponed for a month, consider the ramifications. The town of Vo, near Venice, Italy, was able to eliminate Coronavirus infections by testing all citizens and mandating quarantine.¹⁸ As an Italian friend in Boston recently commented, shutting down a country has economic consequences, but letting this virus win is worse.¹⁹

Massachusetts has taken important measures already, but more needs to be done. All people who are in regular contact with the public should be tested, and tests should be made available at no cost to everyone. People who tested positive can self-quarantine in specific rooms within their homes and thereby prevent spreading the infection to other family members. In Italy, everyone is giving up a bit of their individual freedom for the greater good.



Social distancing works.²⁰

Private and public organizations need to host only virtual meetings, allowing non

work hours for parents who need to attend to family members, and kids must not go on playdates. Supermarkets need to limit the number of people who can enter at a single time to enforce social distancing, and they must seek to provide generous paid sick leave for those who test positive and must stay home.

Our hope is that a therapy is made available soon, as the effects of warm weather on the ability of this virus to spread are still unclear. Our hope is that the U.S. learns from other countries and prepares itself by implementing strict measures now so that all who will need hospitalization will get the care they need over the course of the next few months – while not inundating hospitals and thus “flattening the curve”.

What are we waiting for? Raise awareness. Now. All of us can take actions that avoid endangering people and ourselves. Let's learn the hard lessons that Italy is teaching us.

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