



## FEATURE

## COVID-19

# On the front lines of coronavirus: the Italian response to covid-19

Italy has rapidly become the country hit second hardest in the world by the coronavirus pandemic. **Marta Paterlini** reports on the front lines of a country in total lockdown

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“Patient 1” can breathe on his own after more than two weeks in intensive care for severe pneumonia. The 38 year old marathon runner, admitted to hospital on 21 February 2020, is believed to be the source of local transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2, the virus responsible for covid-19) in Italy, now the country with the second highest number of deaths from the virus in the world.

The resulting government imposed state of emergency lockdown, which started in northern Italy and has expanded to the whole country, will last until at least 3 April in an attempt to contain a contagion that has, at the time of writing, infected over 24 747 people (including at least 2026 healthcare staff) and killed 1809. The fatality rate of 7.2 is now higher than in China (3.8).<sup>1</sup>

The outbreak is having catastrophic effects on the Italian economy, which is likely to plunge into a recession, as well as social and psychological effects on the population. Government officials, however, have decided that public health should take priority, as health authorities have raised concerns over a shortage of places in intensive care units.

Massimo Galli, chief physician for infectious diseases at Luigi Sacco Hospital in Milan, told *The BMJ*, “We had bad luck. I am convinced that the virus circulated undetected for at least four weeks before the awful outbreak we experienced in the original ‘red zone’ in Codogno.”

Galli is working on the isolated virus sequencing data of three patients directly infected by Patient 1 and, on this basis, he is confident that the contagion is linked to a case in Munich, Germany,<sup>2</sup> described in a letter to the *New England Journal of Medicine*.<sup>3</sup>

“Patient 1 had a tremendous social life that tracks 600 other people,” says Walter Ricciardi, the Italian government’s coronavirus adviser and a member of the World Health Organization’s European advisory committee. He told *The BMJ*,

“Drastic measures were necessary to keep the spread at bay. An increase of 1700 cases in one day is striking.”

He describes the virus as an insidious, fast, and ambiguous one that leaves no way out with its very high contagion rate. Unlike other viruses, clinical healing does not match diagnostic healing: after clinical discharge a patient could still be infected.

## In numbers

At the time of writing, official data from the Istituto Superiore di Sanita,<sup>4</sup> the leading scientific technical body of the Italian National Health Service, show that the clinical status of 2539 cases is known, of which 25% are labelled critical or severe, 30% have mild symptoms, and 10% are asymptomatic (the rest are either pauci-symptomatic or the severity level is not specified). Currently, 21% of cases have been admitted to hospital, and 1545 patients are in intensive care. The median age of those in intensive care is 69 (age 51-70: 46%; age >70: 44%), with no cases under the age of 18. However, a significant percentage of patients are under 30, which confirms how crucial this age group is in transmitting the virus.

Italy has been responsive with its testing, screening even asymptomatic people. Pierluigi Lopalco, an epidemiologist at the University of Pisa, told *The BMJ*, “At the beginning this overdoing made sense, because we had to understand what was going on.” Other countries mostly tested only patients who were displaying symptoms and had recently visited China.

Ilaria Capua, a virologist and director of the One Health Center of Excellence at the University of Florida, USA, told *The BMJ* that the European Commission should define criteria to harmonise different countries’ data on incidence and mortality. A discrepancy exists among different European countries in distinguishing deaths from other causes while being infected with coronavirus. “The biggest problem is that there are no guidelines,” says Capua. “How and whether every person who dies in hospital is tested can have an impact on the numbers of victims.”

She adds that Italy has the highest number of deaths from antibiotic resistance in the European Union. Pathologists will need to distinguish between SARS-CoV-2 as the primary pathogen or rather a mostly opportunistic pathogen that may pave the way to more severe respiratory infections caused by multidrug resistant bacteria.

## Falling short

Ricciardi isn't having sleepless nights as he did during the more lethal H1N1 swine flu epidemic. But he is very worried for elderly people—the median age of those infected is 64—and about any possible delay in slowing covid-19, which could take a large toll on Italy's health system.

Italian doctors describe a warlike scenario in hospitals, with fewer places available than there are patients in critical condition. Lombardy, the region around Milan and the most affected in the country, has around 1000 beds available for patients in need of intensive care, but they are near to saturation.

Italy is experiencing a chronic shortage of healthcare workers. On 9 March the government announced a plan to add 20 000 new doctors, nurses, and hospital employees to meet demand.<sup>5-7</sup> Retired doctors may be called on, as well as students who have completed their medical degree and are in the final year of specialist training.

Meanwhile, medical authorities are trying to avoid quarantining doctors who have come into contact with coronavirus patients. They are encouraged to work unless they show symptoms of the infection or test positive. Specialist physicians such as gastroenterologists and cardiologists have been asked to work outside of their fields.

The long recovery time from pneumonia caused by the coronavirus is also contributing to overcrowding in intensive care units. Pneumonia is 5-10% lethal among admitted patients, rising to 30% in those admitted to intensive care. Intubation may be required in a patient admitted for more than two weeks, thus occupying a bed that cannot be used by others. Lopalco told *The BMJ* that younger people aged 40-50 have been developing the types of severe pneumonia that have taken the lives of many people over 75.

Health experts are on alert for the virus arriving in southern Italy, after thousands fled from Lombardy the night before

quarantine came into effect in the north. The overall level of care in some southern regions is below standard, and they have fewer health facilities. Italy's northern and central regions are the richest in the country (producing 40% of the national GDP) and enjoy the best healthcare facilities. The south, meanwhile, "would risk a catastrophe," says Lopalco, who is responsible for coordinating the response in Apulia, the region that makes up the "heel" of Italy on the map.

"We are emptying hospitals [in anticipation of an influx of patients]," he says. "In a way, we have been lucky to have some time to prepare ourselves." He hopes that Italy will be able to mitigate the contagion, but he fears the worst case scenario of choosing who should be saved over others.

Ricciardi has urged neighbouring countries to follow Italy's lead. "We paid for our regionalism," he explains. "Let's remember that the Italian healthcare system has been always decentralised in line with the Italian constitution. At the beginning, the communication between the state and the regions was poor, creating confusion."

Competing interests: I have read and understood BMJ policy on declaration of interests and have no relevant interests to declare.

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