COVID-19 - Italy was our wake-up call

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Italy

On the 16th of February, a 38-year-old businessman entered the A&E at a hospital in Codogno, a city with 16,000 inhabitants in the south of the Lombardy region. He has dyspnoea and wants medication for his suspected asthma. The A&E doctor wants to keep him in the hospital, but the man goes home. At this point, Europe doesn't know yet that this is the start of a new SARS-CoV-2/COVID-19 pandemic.
February 19, the young man was admitted in a massively deteriorated respiratory condition, within a few hours he lies intubated on the Intensive Care Units (ICU). Patient 1's news is circling the world, and only experts immediately recognize what it means that patient zero has not been recognized immediately. Infection prevention measures are taken, people are screened. And luckily, through microbiological research, primer sequences are already known, which allow the detection of the virus. In one weekend, the number of diagnosed cases rises above one hundred. None of the them had had contact with the risk area (then China).
Four weeks later (mid-March) more than 30,000 Italians are infected with the virus; 12,000 people were admitted, there are more than 2000 in ICUs, and 2500 people have already died. More than 2000 nurses and doctors are in home isolation or quarantine.
The country is in a lock-down, only pharmacies and supermarkets are open. The rich Northern Italy area is in the grip of COVID-19. Every day, waves of patients with COVID-19 arrive in the hospitals, who have to completely adapt their operations; first dividing themselves into sections for COVID-19 patients and for others, until entire COVID-19 hospitals emerge and other care moves from the pandemic hotspots to other areas. In short, a state of emergency.

The Netherlands

Back in the Netherlands, during the weekend of carnival, people notice that something is happening in Italy, but it still seems very far away. However, this is not the case, because around 38,000 Dutch people spend their winter holiday in Italy every year. Next to the winter sport areas, the North of Italy is also visited by many tourists and business travelers. Milan is the centre of the fashion world, where at that moment, the spring shows are happening.
The developments that follow are likely to have a crucial influence on the course of the epidemic in the Netherlands. The first wave of vacationers from the Netherlands comes from the North of the country. The Northerners are lucky. In the week before carnival there are not so many infected people in Northern Italy yet, and two small towns have been closed by the Italian government. The following week, people from the central and Southern parts of the Netherlands go on vacation. Around 6,000 Dutch people are estimated to be in the area where the epidemic strikes during these two crucial weeks. A fraction of vacationers has demonstrably brought the virus back to the South of the Netherlands, where in the same week the carnival celebrations take place. A combination of circumstances, that will influence the course of the epidemic in its initial

phase. The return of people from their holidays in Austria is, at that moment, still in the future.
On the 23rd of February it is already clear that none of the first 100 cases published in Italy could have been detected by the case definition in place in the Netherlands at that time. The area at risk is no longer just China and Asia, but now Northern Italy and soon afterwards also Northern Brabant. On February 27 the first patient in Brabant is identified, three weeks later more than 1700 people are demonstrably infected in the Netherlands. In all probability, this is just a fraction of the actual number of infected people.

Dramatic

Italy is now going through a dramatic period and teaches us that COVID-19 is no ordinary seasonal flu. Not only the elderly and immunocompromised die, but also many young people, including healthcare workers. Because of the large number of infections in a short period of time and the lack of targeted treatment and prevention, the care system is overloaded, intensive care beds are filling up and people are dying. In part avoidable, because there are not enough ventilators available in hospitals with COVID-19 patients. In some hospitals, the age limit of under 70 years is used as an entry criterion for ICUs. In Italy, over 20% of ICU patients are under the age of 60 and have no known underlying suffering. This provides a different picture than shown by epidemiological data: the problem in Italy is not the infection but the shortage of ICU capacity. This is relevant because the Netherlands is one of the countries with a relatively low number of intensive care beds compared to the number of inhabitants (6/100,000). Italy and Belgium have more than twice as many (12.6 and 15.3, respectively), Germany even has four times as many (29.6) intensive care beds per 100,000 inhabitants. This makes the Netherlands a vulnerable country, which would not be able to accommodate a massive influx of COVID-19 patients, in particular the seriously ill patients, in its hospitals. Therefore, the right strategy is to delay the onset of the peak of the epidemic for as long as possible. in the hope that in spring the respiratory season will stop and Europe will have six months to really prepare itself. Of course, we don't know this for sure, but it is our most important hope.

Measures

The chosen strategy calls for far-reaching measures. We need to track down infected people and transmission chains have to be prevented. Diagnostics is the most important weapon in this. However, even in this initial phase, it seems that there is not enough screening capacity available on the same scale as in South Korea or Germany. Low-threshold testing is crucial at this stage, among other things to understand how this epidemic is progressing, to recognise infected healthcare workers, to know to what extent children are involved in this epidemic, and so on. Italy has also taught us that hospitals can be the local 'turbines' of the epidemic. Rapid recognition of (potentially) infected patients and staff is essential for effective control. In a first study in Brabant, 3-10% of healthcare workers with mostly mild symptoms were tested positive. Most seem to have been infected outside of the hospital, where the carnival festivities played a crucial role. They can spread it again in hospitals, if we do not take the proper infection prevention measures.
While hospitals must prepare themselves to absorb the influx of patients as good as possible, putting the brakes on the epidemic lies almost entirely outside the hospitals. Unprecedentedly far-reaching measures are now being taken all over the world. Large events, trade fairs, conferences are being cancelled. Schools, universities,

restaurants, museums, etc. are closing down. People are urged to apply "social distancing"; a new term that was initially hardly adopted. We take these measures in order to prevent that we can no longer provide care to patients who urgently need it and have to triage, which is called "code black". Also a new term that is now widely used.

Be prepared!

The measures are extreme and yet many people still think it's some kind of flu. It is not! The impact is incomparable. We have to act quickly. The goal is to slow down and reduce the peak of the epidemic, to prevent any transmission that can be prevented. It is important to take into account, that the measures to prevent infection in the population only have an effect on the burden on the hospitals after 2 weeks.
The hospitals in Brabant are already struggling with a large burden, but the rest of the country can still prepare for the care for a huge number of patients. The ICU capacity needs to be increased, and A&E and acute care teams need to be prepared. Regular wards must now be prepared for the increased intake of COVID-19 patients, and CPAP treatment capacity and capacity for testing and protection equipment must be scaled up and coordinated regionally. Critical goods need to be closely monitored for consumption and stock. A consistent, sort of ‘military’ operational structure needs to be set up. This is the moment to apply in the what we have been able to practice with BRMOs in recent years in our healthcare regions. Together, we have to protect the people in our healthcare regions. Be prepared now and make sure you are able to operate in a well-organised way, with a clear allocation of tasks and responsibilities. The system is as strong as its weakest link. The medical microbiology in our country can make a difference. Be alert and fast! Italy was our wake- up call.

Many of these recommendations have in the meantime been transformed to policy and measures were started by the RIVM/CiB and VWS, for which we would like to thank our colleagues who have had to make unprecedentedly difficult decisions. Other decisions will follow, with which the awareness of the seriousness of the situation will grow, if it was not clear just yet.

Last but not least, take good care of yourself and each other.

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