



Pandemic caused by COVID-19

At the beginning of 2020, the Chief Epidemiologist received reports from the World Health Organization (WHO) and the European Centre for Disease Prevention and Control (ECDC) on a pneumonia outbreak in Wuhan city in southern China, with several dozen people infected and one dead. It was confirmed that the pneumonia was caused by a novel coronavirus that differs from the coronaviruses that caused severe acute respiratory syndrome (SARS) in southern China (and other countries) in 2002–2003 and Middle East respiratory syndrome (MERS) diagnosed in the Middle East since 2012.

As January progressed, it became clear that the epidemic was spreading rapidly and that the coronavirus was highly infective. At the end of January, the WHO declared that the epidemic was a health threat affecting the entire world.

Monitoring

In mid-January, the Chief Epidemiologist called the attention of doctors in Iceland to monitoring the symptoms of people coming from China, particularly Wuhan City. Guidance for the public was given on how best to prevent contagion during travel abroad,

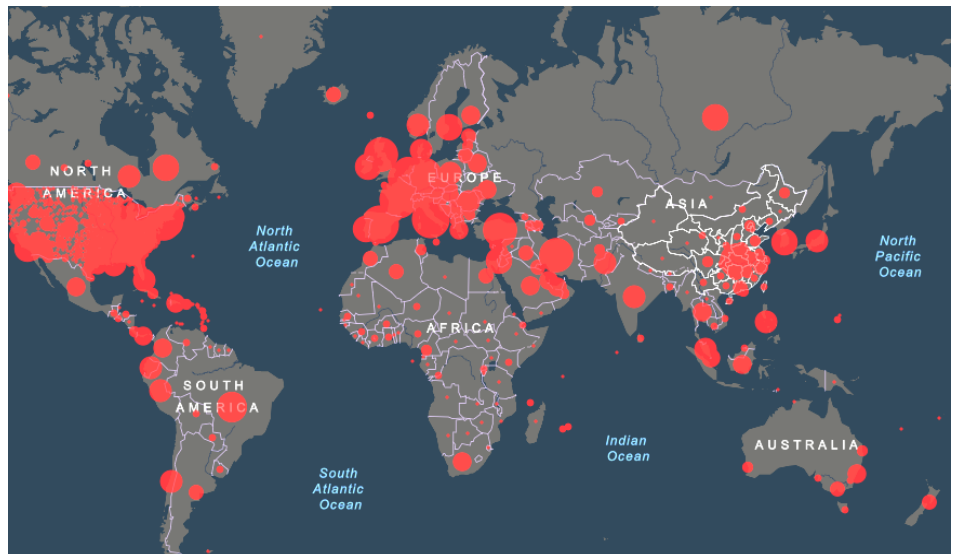


Photo: COVID-19 Dashboard, April 2020. [John Hopkins University](https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594741fd40299423467b48e9ecf6)

especially in China. As time went on and the epidemic spread, more areas and states classified as risk zones were added as danger zones.

Response

A number of countries introduced airport screenings of passengers coming from China, something that was not applied in Iceland since such measures have been ineffective. In addition, the WHO did not recommend any travel restrictions to and from China nor any trade barriers.

The first official response in Iceland was announced on 23 January and was as follows:

- Preparations began for activating the Icelandic Pandemic Influenza Preparedness Plan of the Chief Epidemiologist and the Civil Protection Authorities. Older plans were updated and responders informed.
- Instructions to healthcare professionals were updated and issued.
- Guidelines were issued to the public on how to approach the health care system if an infection caused

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Thorolfur Guðnason, Chief Epidemiologist
 Agnes Gísladóttir
 Asa St. Atladóttir
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 Guðrun Sigmundsdóttir
 Hrafnhildur B. Stefánsson
 Iris Marelisdóttir
 Juliana Hedinsdóttir
 Kamilla S. Josefsdóttir
 Marianna Thordardóttir

Editor

Haraldur Briem, Special Advisor

Directorate of Health

Chief Epidemiologist for Iceland

Katrinartuni 2
 105 Reykjavík

Tel: +354 5101900

Fax: +354 5101920

E-mail: mottaka@landlaeknir.is

www.landlaeknir.is

by the novel virus was suspected.

- Guidance was given to tourists who made their way to Iceland about the response of the health authorities in Iceland and how tourists could approach the health system in Iceland.
- At the international airports in the country, operations are to be carried out in accordance with the national preparedness plan for airports.
- Health organisations were encouraged to update their response plans.
- There was no reason to encourage a travel ban to China, but tourists were encouraged to be mindful of infection control.

Uncertainty Phase

Due to the rapid proliferation of COVID-19 worldwide, the Civil Protection Authorities, in collaboration with the Chief Epidemiologist, decided on 27 January to declare a phase of uncertainty, which means that regular consultation according to existing response plans will be conducted, information sharing will be increased and the responders must update their plans.

The aim of the response was to prevent the spread of the virus domestically as much as possible so that health care services could be secured for sick persons and the necessary domestic activities be maintained. The general public and tourists in Iceland who believed they had been infected with the virus were encouraged to call 1700 for more information and on how to approach the health care system. Persons with suspected or confirmed infection were to be placed in isolation in accordance with more detailed instructions. Those who might have become infected but showed no symptoms were to be quarantined for two weeks. Emphasis was placed on contact tracing where possible.

Alert Phase

On 27 February, the first diagnosed case of COVID-19 in Iceland was reported. Subsequently, the National Commissioner of Police, in consultation with the Chief Epidemiologist, declared that the alert phase of civil protection should be activated. The person diagnosed was an Icelander who had stayed in a ski area in Northern Italy outside a defined danger zone. Later it was revealed that many Icelanders had become infected in ski resorts in the Alps. Iceland was the first country to report these areas of risk.

Since the first patient was diagnosed with COVID-19, cases of the disease increased rapidly. The Chief Epidemiologist, the Civil Protection Authorities and the Director of Health have held daily press briefings, describing the state of affairs and providing reliable information.

Emergency Phase

After the first cases of COVID-19 were detected in Iceland that could be traced to domestic infection, the emergency phase of civil protection was declared on 6 March. The government and the responders had already worked to a great extent as if an emergency phase was in place, and had therefore taken various measures prescribed in a phase

of emergency. These included plans for monitoring and epidemiological analysis, as well as ensuring that measures against the epidemic were implemented.

Due to a gradual but steady increase in the number of COVID-19 cases in Iceland, the Minister of Health announced on 13 March a ban on events involving more than 100 people for four weeks. At the same time, Icelanders were advised from travelling and Icelanders travelling abroad were advised to consider whether there was reason to speed up their return due to the growing spread of the epidemic worldwide. It was considered uncertain what access and rights Icelanders would have to health care abroad, in addition to the fact that health care systems in many countries might not be able to cope with the burden, no matter whether it involved tourists or Icelanders staying abroad for lengthy periods.

On the advice of the Chief Epidemiologist, the Minister of Health tightened the assembly ban on 24 March to cover events where more than 20 people come together.

Samples diagnosed at the LUH Department of Virology

Viral diagnosis of nasopharyngeal and throat swabs began last January 31 at the Department of Virology of the Landspítali University Hospital (LUH). The first case

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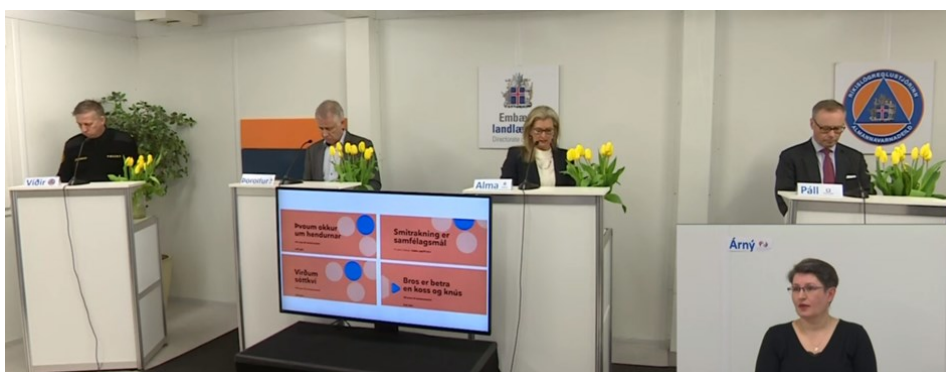


Photo: Daily press conferences, attended by Chief Epidemiologist, Director of Health and Chief of Civil Protection and Emergency Management .

From left: Vidir Reynisson, Thorolfur Gudnason, Alma D. Möller, Pall Matthiasson and Arny Gudmundsdottir



was diagnosed on 27 February, after which the number of positive COVID-19 analyses increased steadily, see Fig. 1.

The initiative of deCODE Genetics biopharmaceutical company

An Icelandic biopharmaceutical company, deCODE Genetics, in collaboration with the Chief Epidemiologist, began to diagnose virus infections with nasopharyngeal and throat swabs in the general public among those who wanted to learn whether an infection was present even if there were no symptoms of the disease. The sampling began on 13 March. Almost 1% of those who came to the test were infected. It should be borne in mind that if a test is negative (virus is not found) it does not indicate whether the person has been infected and has recovered or has newly been infected. Neither is it clear how well the sample represents the general population. This study has nevertheless provided interesting information about the genealogy and mutations of the virus. Testing for antibodies against the virus, however, could provide valuable epidemiological information on the spread of the infection in the community, see Fig. 2.

Primary health care and the medical on-call service

The primary health care is the first stop for people who need consultation and assistance relating to health problems. The website Heilsuvera makes it possible to get in touch with the service digitally. A huge load on the service was created by the invasion of COVID-19 into society. The emergency service of the off-hour medical on-call service (Læknavaktin) was strengthened. According to information from the service, the number of telephone contacts increased considerably in February and March. In February, the number of telephone contacts was 10.000 as compared with 28.000 in March 2020. The number of house calls by the on-call service doctors also increased considerably in March, and there were as many as 254 calls made in week 12 (16–22 March).

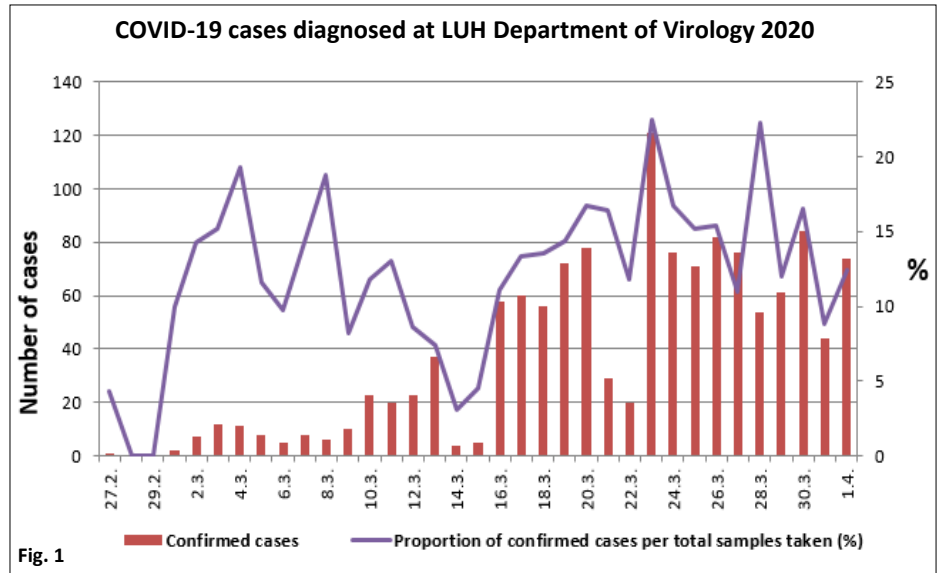


Fig. 1

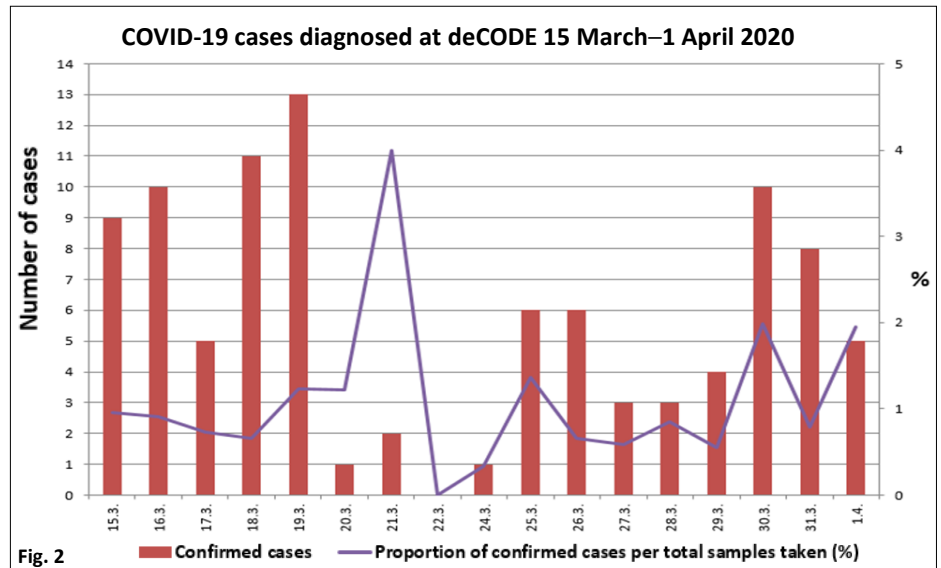


Fig. 2

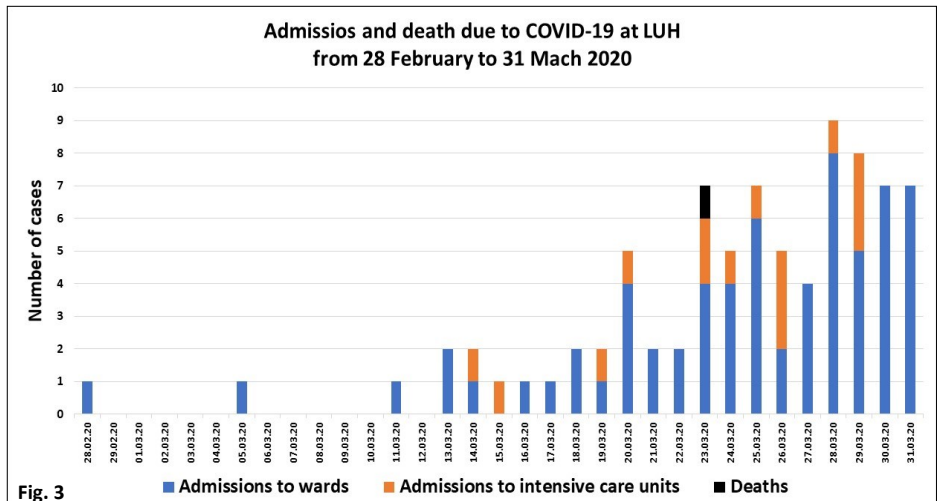


Fig. 3



Landspítali University Hospital (LUH)

The first admission to LUH was associated with the first case detected with COVID-19. In mid-March, a growing number of cases was admitted because of COVID-19 or diagnosed after hospitalisation. A total of 81 patients had been hospitalised by the end of March, and 15 of them were admitted to intensive care for treatment, including ventilators, see Fig. 3. One patient died. In March, 567 of the hospital staff were held in quarantine.

Akureyri Hospital (SAk)

At the end of March this year, four patients had been admitted to SAk due to COVID-19, one of whom was admitted to intensive care and put on a ventilator. A total of 44 employees were in isolation or quarantine during the period.

The first COVID-19 death in Iceland occurred at the Northeastern Iceland Health Institute in Húsavík. The person in question was a foreign tourist who died after a short hospital stay on 16 March 2020.

Nursing homes

In early March, the large nursing homes banned visitation and took extensive measures to prevent the transmission of infection into the nursing homes. Other nursing homes followed suit soon after, the ban thus affecting all 44 nursing homes in Iceland. Vigilance among employees was enhanced, cleaning was increased and the whole organisation of procedures was subject to review. Infection only affected one nursing home, which must be considered a very good result.

Quarantine

At the end of March, about 7,000 people were in quarantine, or 2% of the population. Of those who were diagnosed with COVID-19 in February to the end of March, 53% had been in quarantine, indicating that this measure has yielded significant results.

Ambulance service

There are a total of 16 ambulance service operators in Iceland and they all work according to the ambulance guidelines in the COVID-19 epidemic. Ambulances were converted to special COVID cars to reduce the risk of cross-contamination. Patient transfers went well for the most part.

weeks 7–10 this year and the number of cases was below the average of the last five years.

Confirmed influenza cases at the LUH Department of Virology peaked in week 10 of this year (2–8 March). This season's influenza has been characterized by three strains of influenza; A(H1N1) pdm09, A(H2N3) and B(Victoria), each causing a proportionately equal number of cases. A comparison of confirmed cases of influenza and COVID-19 is shown in figure 5.

Annual influenza

The influenza during the winter of 2019–2020 has been relatively mild. Influenza-like symptoms peaked in

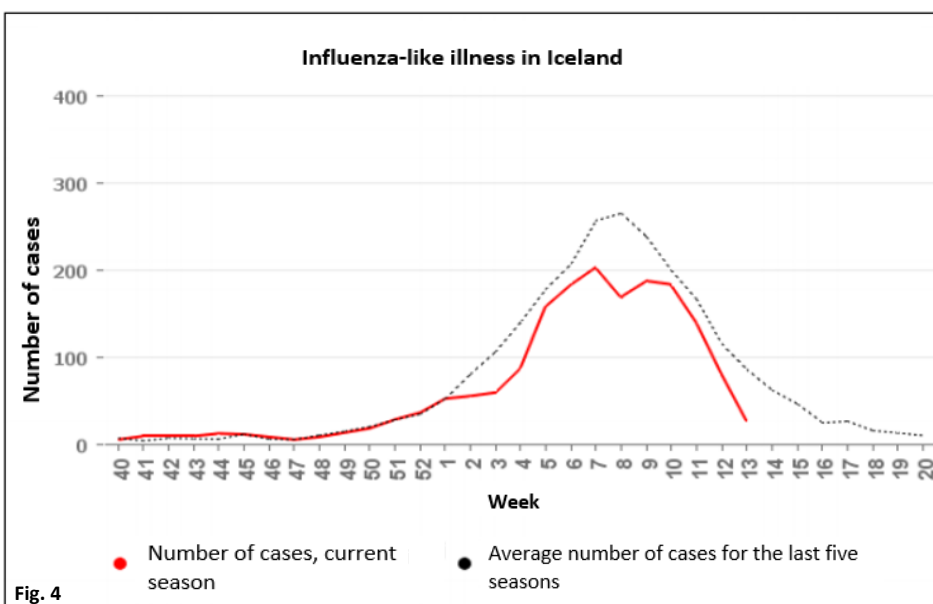


Fig. 4

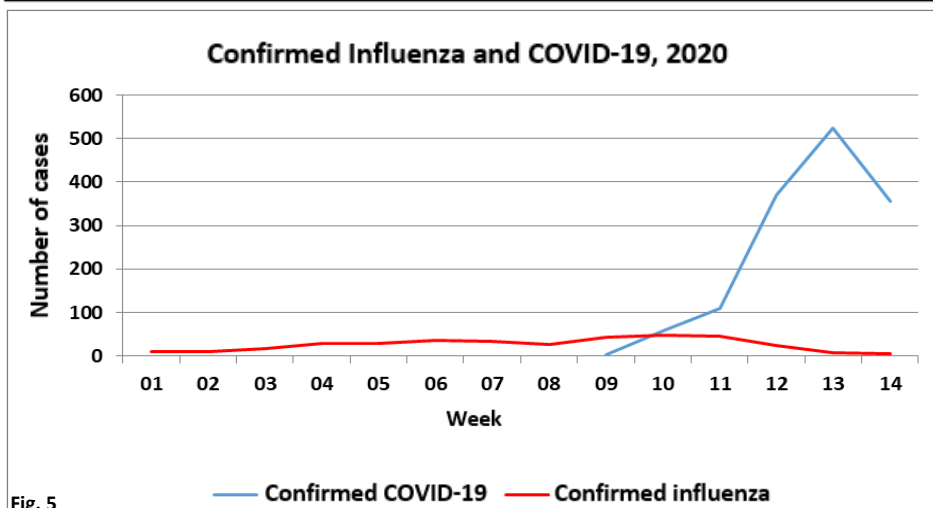


Fig. 5

Sexually trans- mitted diseases

Although the COVID-19 pandemic is raging at this time, sexually transmitted diseases are not left behind. In the first three months of 2020, there has been a significant increase in reported cases of syphilis in Iceland. There has also been an increase in gonorrhoea in this period, while the number of chlamydia cases is similar to that of previous years.

Approximately 92% and 73% of those diagnosed with syphilis and gonorrhoea, respectively, were males. However, among those diagnosed with chlamydia the proportion of male and females were equal.

About half of those infected with syphilis, 82% of those with gonorrhoea and 92% of those with chlamydia had Icelandic citizenship.

Last January, five people were diagnosed with HIV infection, four men and one woman, two of whom were Icelanders.

No cases were recorded in February and March of this year, which may be explained by the fact that the majority of those diagnosed in recent years have been foreigners and the arrival of foreigners in Iceland has greatly slowed down, especially in March.

Botulism detect- ed in Iceland

On 18 January 2020, botulism was confirmed in an adult in Iceland. The first symptoms began on 12 January and the poisoning was confirmed just a week later. The poisoning was not observed

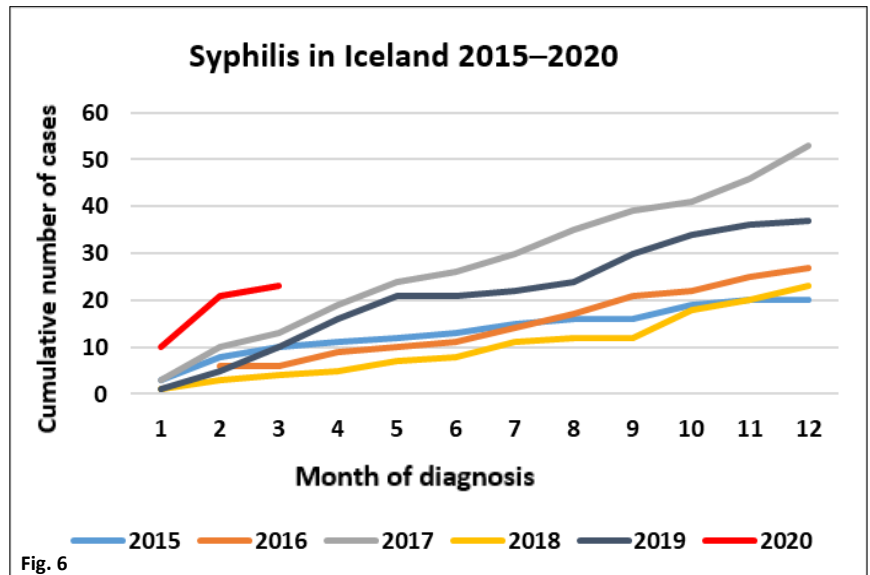


Fig. 6

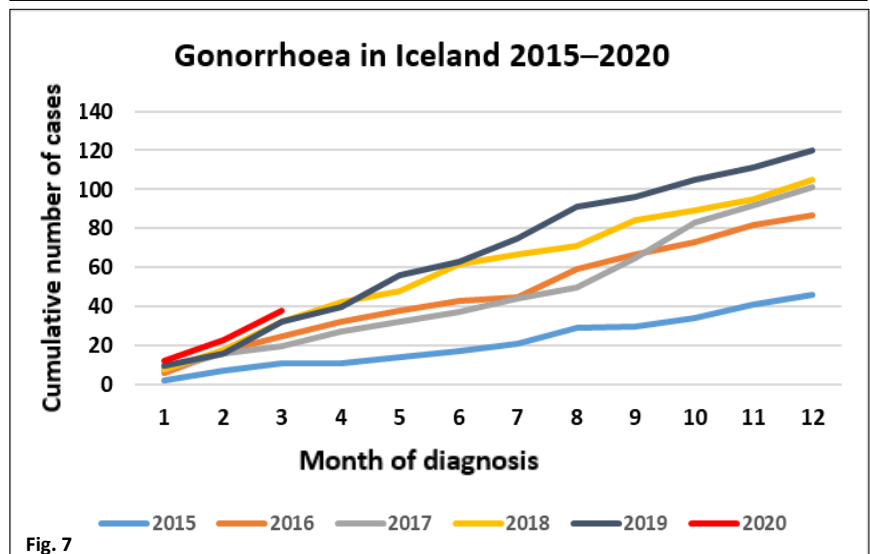


Fig. 7

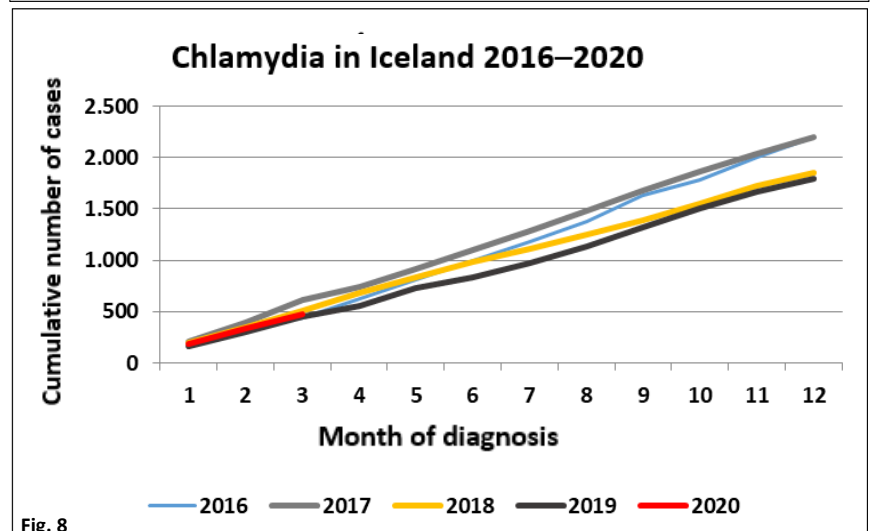


Fig. 8

in other individuals. The source of the poisoning was intensively sought in collaboration with local health inspections, the Icelandic Food and Veterinary Authority, the Chief Epidemiologist as well as the LUH Department of Bacteriology and Virology and the Mafís Laboratory but without success. Nothing was found to indicate that the origin was in distributed foods. The patient recovered.

Botulism is a poisoning caused by *Clostridium botulinum*, which is a spore-forming, anaerobic bacterium. The bacterium can produce very potent

toxins (botulinum toxin) and if it grows in food it can cause serious illness with paralyses that can lead to death. The time from consumption of contaminated food to illness is short, ranging from a few hours to three days and the main symptoms are rapidly growing paralyses.

Botulism is a rare form of poisoning that has only been detected three times in Iceland, first in 1949, when four people became ill after consuming pickled beef and one of them died. The second time was in 1981, when a four-person family fell ill, and most recently

in 1983 when a mother and child fell ill after eating pickled haggis containing the bacterium. Everyone survived.

The most common causes of botulism are home-cooked foods such as meat, fish, vegetables and fruit, most often canned, cured, pickled or fermented, and often in vacuum packaging. Therefore, it is important to take every care in such processing, both in homes and in food companies.

How to protect yourself against the COVID-19 Coronavirus



- Be mindful of hygiene. Regularly and thoroughly wash your hands with soap and water and use hand sanitiser. Avoid touching your eyes, nose and mouth.



- Cover your mouth and nose with your bent elbow or tissue when you cough or sneeze, especially if you have cold like symptoms.



- Avoid close contact with individuals who are coughing or have cold/flu like symptoms.



- Be mindful of hygiene when you are using things such as public touchscreens, handrails, elevator buttons, card machines and doorknobs.



- Say hello with a smile rather than a handshake or a hug.



- Cook meat and eggs well.



- Avoid contact with stray animals in market areas.