

## **Rationale for Government Resolution No. 203 of 26 February 2021**

In accordance with Section 5(b) and (e) and Section 6(1)(b) of the Crisis Act, the government has decided to adopt crisis measures to resolve the existing crisis situation.

The crisis measures measure are issued in connection with the adverse development of the epidemiological situation in terms of the occurrence of the COVID-19 disease caused by the SARS-CoV-2 coronavirus.

The purpose of the crisis measures is to ensure the necessary conditions to restrict the further spread of the given disease in the Czech Republic and thus fundamentally reduce the extreme strain on healthcare service providers caused by the high share of patients hospitalized with COVID-19, the high share of patients requiring intensive care, and the negative trends of mortality from COVID-19.

The epidemiological situation in the Czech Republic is characterized by the protracted community spread of SARS-CoV-2, which creates conditions for the uncontrolled transmission of the disease to persons with compromised immunity due to age and comorbidities, but there is also a rising trend of illness among persons in younger age groups and persons without risk factors.

The adverse epidemiological situation is currently strongly exacerbated by the spread of mutated strains of SARS-CoV-2, in particular the British variant of the virus, characterized by a heightened capacity for transmission between persons.

However, it must be emphasized that the spread of biological agents has very different characteristics compared to other agents, e.g., the spread of chemical substances.

Exposure in this case does not mean only contact with a certain concentration of the substance for a defined time, but is a much more complex process with a number of better or lesser known parameters.

Contagion depends on:

1. Presence of the source of contagion,
2. Actual transmission of contagion,
3. Presence of a vulnerable population.

The incidence and course of disease are also affected by the size of the infectious dose, the transmission mechanism, the entry gateway and the vulnerability of the host.

The most serious epidemics in terms of impact and burden on the population are those caused by person-to-person contagion. The highest contagion rate in the population is reached through airborne spreading, via droplets containing the infectious agent that are released in the patient's space when speaking, breathing, coughing and sneezing. In relation to the ongoing pandemic of the COVID-19 disease and the adopted measures to avert its direct impact on the health of the Czech population, it has been shown that one of the most important tools to influence the ongoing epidemic and stop its uncontrolled spread is to target these individual elements of the epidemic process. The source of infection can be isolated and treated, disrupting the transmission path and protecting the vulnerable individual, for instance through quarantine measures or vaccination, whereas the latter is not currently available in sufficient quantities in relation to the COVID-19 pandemic.

During the epidemic spread of an infectious disease, there is a risk that without the adoption of measures, the infection will spread uncontrolledly through the population, possibly exhausting the healthcare system's capacity for isolation and treatment, with a fundamental impact on the population's health. The most dangerous is parallel spreading, where one infected person

simultaneously infects more than one person, thus leading to a massive spread of the infection through the population. The key measures include the possibility of the effective disruption of the contagion between individuals and across the population (restricted congregation, limited provision of selected services, use of protective and disinfectant products).

The only real solution to ensure a change in the very adverse epidemiological situation regarding the incidence of COVID-19 in the Czech Republic is to impose very strict anti-epidemic measures targeted on the key links in the chain of transmission of SARS-CoV-2 under precisely defined time and systematic conditions.

Given the current intensity of the spread of the SARS-CoV-2 virus, there is a very serious risk that without adopting strict crisis measures, the rising uncontrolled spread of the contagion will lead to the exhaustion of capacities of the healthcare system, with fundamental and often irreversible impacts on public health. A failure to adopt stringent anti-epidemic measures, which will reduce the number of persons infected and those requiring hospitalization, would lead to the exhaustion of bed and staff capacities at hospitals and a further worsening of the condition of patients e.g., with cardiovascular and oncological diseases, who will not receive adequate planned care, which is essential for chronic diseases.

The justification of the crisis measures follows from the results of an analysis of the key epidemiological characteristics and evaluation of the risk of the further spread of the disease:

1. There is intensive community transmission of the disease, exacerbated by the incidence of the British variant of SARS-CoV-2
  - The share of those infected where the source of contagion was not identified is increasing
  - If the spread of new virus mutations remains uncontrolled, the value of the reproduction number  $R$  is expected to rise from the current 1.2 to 1.4
2. A rising share of positive tests in the total number of tests performed on the given day is being registered
  - A rise of 7.3% in the share of positive tests in the total number of tests within diagnostic indication was registered during the 8th calendar week of 2021
3. A rising share of infected patients in the group of highly vulnerable persons is being registered
  - This is more than 1400 persons on business days, while the weekly value is 9,367 persons
  - as at 25 February 2021, more than 10,505 cases of the disease were reported in the senior group (65+) in the past 7 days, which constitutes 492.8 cases per 100,000 inhabitants
4. The rising exhaustion of the capacity of healthcare services provider is being registered
  - As at 25 February 2021, the total number of hospitalizations was 6,967. The strain on intensive care across the Czech Republic is rising consistently, patients requiring intensive care account for about 21% of the total number of those hospitalized. In total, there are now 1,433 persons hospitalized in intensive care, of which 717 require artificial lung ventilation (UVP), and 27 require extra-corporal membrane oxygenation (ECMO). The available bed and staff capacities in the healthcare system are gradually being exhausted.
  - Should the burden on hospitals start rising in connection to the spread of the

epidemic at a reproduction number of 1.2, then it is necessary to anticipate the risk of a daily increase of +30 patients in beds

- During a very short period, around 8 regions will have exhausted all the functional intensive care capacities
- The longer-lasting fundamental restriction or complete suspension of planned care provided to citizens undoubtedly constitutes worsened access to healthcare and the worsened health of the population, because it is necessary to also treat other diseases, especially in the area of cardiovascular and oncological medicine, which is the most common cause of the death in the Czech Republic. Cardiovascular diseases are the most common cause of death both among women (50% of all deaths) and men (42%). Cancer is the second most common cause of death and causes 23% of all deaths among women and 28% of all deaths among men (e.g., State of Health in EU, CZ, 2017).
- Although the vaccination of healthcare professionals is ongoing (41.2% have been vaccinated as at 25 February 2021), the number of healthcare professionals with COVID-19 is still very high (as at 24 February 2021, a total of 2840 healthcare professionals are positive (294 physicians, 1322 nurses and 1224 other HP). The lack of qualified healthcare professionals is therefore a fundamental issue.

5. The negative trend in the development of the epidemiological situation continues to worsen on a local level.

- In the worst affected regions, the strain is 2.5 to 3 times higher than in the other regions.
- The rapid spread of the contagion is evident primarily in the northern and western parts of Bohemia, where increased incidence is noted in a rising number of districts.
- The unfavorable situation persists in the Trutnov, Náchod, Cheb, Sokolov and Tachov districts, where the effect of the closing off of the districts has not yet been felt due to time limits.
- Increased numbers of patients with newly diagnosed COVID-19 disease are also being noted in other areas, especially in the Plzeň and Pardubice regions.
- Given persistent community contagion, the risk of the uncontrolled spread of the disease to other regions is very high.

6. Contagion trends in collective groups

- The most common social environments and most probable locations of COVID-19 contagion are consistently the workplace, family + household + leisure environment. The share of cases thus characterised in the total number of registered cases (not including healthcare professionals) in the month of January 2021 was 53.0%, whereas the value of this share is the highest yet in the total reviewed period from March 2020, and reflects the changes in population mobility in connection to the intensive use of home office.
- From May 2020 until the present, the most common sites of outbreaks of COVID-19 were school facilities, including kindergartens (1254), followed by social service facilities (715) and healthcare facilities (314), and workplaces (281), with a prevalence of manufacturing plants (141)
- After closing schools (except for kindergartens) from 14 October, there has been a decline and elimination of contagions at primary and secondary schools, but after some children and students returned to schools from 18 November and 30 November, an increase was observed at primary and secondary schools. Following

a decline during the Christmas holidays, a rise was observed again at kindergartens and primary schools since the start of 2021.

- After the closing of schools (except kindergartens) from 14 October, the number of newly diagnosed positive teachers and professionals in the school system ceased and gradually declined, but after some children and students returned to schools from 18 November and from 30 November, the figures rose again, culminating in the first week of 2021, followed by a decline and increase again in February 2021.

## 7. Mobility and its trends

- The restriction of personal mobility and the related limitation of risk contacts and the reduced probability of contagion is the basis of all the adopted measures, both in the Czech Republic and other countries. Population mobility as an indirect factor affecting the number of contacts provably correlates to the speed of spreading the disease, but the relation must always be assessed with a 14-day delay. This means that the high-risk increase of mobility will become apparent in the spread of the epidemic after about 10-14 days. The opposite also applies, where the effect of reducing high-risk mobility can be observed only after the specified time delay.
- The high values of COVID-19 incidence began towards the end of 2020, when the reproduction number reached values of about 1.5. The time correlation with increased mobility in this period is statistically proven.

More detailed information about the degree of the spread of the epidemic and related information is published every day at the Ministry of Health's website [onemocneni-aktualne.mzcr.cz](https://onemocneni-aktualne.mzcr.cz).

This specific crisis measure is based on the fact that people who are denied their freedom are more likely threatened by various diseases and worsened health. The simple fact that they are denied freedom suggests that these people live in close mutual proximity. This situation leads to the increased risk of airborne infection and the transmission of pathogens such as COVID-19.

People in prisons and similar types of facilities have poorer health than the general population and are more often exposed to risks such as smoking, poor hygiene, weakened immunity due to stress, poor nutrition and the presence of other illnesses such as viral diseases, tuberculosis and drug-related diseases.<sup>1</sup>

The isolation of these persons from meeting with persons who would come to their place of isolation from outside is justified by an effort to restrict the spread of this disease through community transmission outside the isolation area of these persons.

According to studies, prisons can become an epicenter of infectious disease, given that the risk factors are higher and given the unavoidable close contact between a large number of persons, limited air circulation and limited access to services.<sup>2</sup>

In the case of proven necessity, it is possible to request an exemption from the said restriction from the Minister of Justice.

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<sup>1</sup> *COVID-19 AT PRISONS AND OTHER DETENTION FACILITIES. READINESS, PREVENTION AND CONTROL.* Centrum protidrogové prevence a terapie, o.p.s, 2020.

<sup>2</sup> Dolan, K, Wirtz, AL, Moazen, B, et al. Global burden of HIV, viral hepatitis, and tuberculosis in prisoners and detainees. *Lancet* 2016; 388: 1089-1102