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Calling for pan-European commitment for rapid and sustained reduction in SARS-CoV-2 infections

Across Europe, the COVID-19 pandemic is causing excess deaths, placing a burden on societies and health systems and harming the economy. European governments have yet to develop a common vision to guide the management of the pandemic. Overwhelming evidence shows that not only public health, but also society and the economy benefit greatly from reducing cases of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection. Vaccines will help control the virus, but not until late 2021.

If European governments do not act now, further waves of infection are

to be expected, with consequential damage to health, society, jobs, and businesses. With open borders across Europe, a single country alone cannot keep the number of COVID-19 cases low; joint action and common goals among countries are therefore essential. We therefore call for a strong, coordinated European response and clearly defined goals for the medium and long term. Achieving and maintaining low case numbers should be the common, pan-European goal for the following reasons.

First, low case numbers save lives, and fewer people will die or suffer from long-term effects of COVID-19. In addition, medical resources will not be diverted from other patients in need.

Second, low case numbers save jobs and businesses. The economic impact of COVID-19 is driven by viral

circulation within the population, and economies can and will recover quickly once the virus is greatly reduced or eliminated. China and Australia have shown this is possible. In contrast, the economic costs of lockdowns increase with their duration.¹

Third, the control of the spread is most effective at low case numbers. Easing restrictions while accepting higher case numbers is a short-sighted strategy that will lead to another wave, and thus to higher costs for society as a whole. Testing and tracing capacities are limited: only with sufficiently low case numbers can the test-trace-isolate-support strategy quickly and efficiently help mitigate the spread.^{2,3} Hence, milder and more targeted physical distancing measures are sufficient, and schools and businesses can stay open.

Fourth, contact tracing and quarantine is not feasible at high infection prevalence. Assuming a state with 300 new cases per million people per day, ten contacts per case, and 10 days quarantine: then 3% of the population would need to be in quarantine, resulting in strong reductions of the workforce.

Fifth, aiming for naturally acquired population immunity is not an option.⁴ The heavy burden in terms of morbidity and mortality, reflected also in the current excess mortality, and the uncertain duration of immunity should strongly discourage this approach.

Sixth, planning is possible. When case numbers are low, there is no need for rapid policy changes. This reduces the economic damage and the uncertainty and strain on mental health. However, if case numbers rise too high, preventive measures must be taken decisively to bring them down again—and the earlier, the better.⁵⁻⁷ To better manage the COVID-19 pandemic, we propose a strategy with three core elements (panel).

Panel: A joint European strategy for the COVID-19 pandemic

1 Achieve low case numbers

- (i) Aim for a target of no more than ten new COVID-19 cases per million people per day. This target has been reached in many countries, and can be reached again throughout Europe by spring, 2021, at the latest.
- (ii) Take firm action to reduce case numbers quickly. Strong interventions have proven efficient and balance the rapid achievement of low case numbers against the strain on mental health and the economy.
- (iii) To avoid a ping-pong effect of importing and reimporting severe acute respiratory syndrome coronavirus 2 infections, the reduction should be synchronised across all European countries and start as soon as possible. This synchronisation will allow European borders to stay open.

2 Keep case numbers low

- (i) When case numbers are low, easing of restrictions is possible but should be carefully monitored. Continue and improve targeted mitigation measures, such as mask wearing, hygiene, moderate contact reduction, testing, and contact tracing.
- (ii) Even if case numbers are low, a strategy for surveillance testing (at the very least 300 tests per million people per day) should be in place so that an increase in case numbers can be detected in time.
- (iii) Local outbreaks require a rapid and rigorous response, including travel restrictions, targeted testing, and possibly regional lockdowns, to achieve a rapid reduction in prevalence.

3 Develop a longer-term common vision

Develop context-sensitive regional and national action plans as well as European-level goals, depending on the COVID-19 prevalence. Devise strategies for elimination, screening, vaccination, protection of those at high risk, and support for those most affected by the COVID-19 pandemic.⁸

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It is crucial to communicate the goal and the advantage of low case numbers clearly to foster public cooperation. The success of these measures depends crucially on the cooperation and involvement of the public. Making the case for the economic and social benefits of reducing case numbers will, if clearly communicated, greatly foster public cooperation.

Controlling COVID-19 will become easier. In the near future, increased immunisation, more testing, and an improved understanding of mitigation strategies will further facilitate the control of COVID-19.

We urge governments throughout Europe to agree on clearly formulated common goals, coordinate their efforts, develop regionally adapted strategies to reach the goals, and thereby work resolutely towards low case numbers.

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- 1 Dorn F, Fuest C, Göttert M, et al. The economic costs of the coronavirus shutdown for selected European countries: a scenario calculation (No. 25). Munich: EconPol Europe, 2020.
- 2 Kretzschmar ME, Rozhnova G, Bootsma MC, van Boven M, van de Wiggert JH, Bonten MJ. Impact of delays on effectiveness of contact tracing strategies for COVID-19: a modelling study. *Lancet Public Health* 2020; **5**: e452-59.
- 3 Maier BF, Brockmann D. Effective containment explains subexponential growth in recent confirmed COVID-19 cases in China. *Science* 2020; **368**: 742-46.
- 4 Alwan NA, Burgess RA, Ashworth S, et al. Scientific consensus on the COVID-19 pandemic: we need to act now. *Lancet* 2020; **396**: e71-72.
- 5 Dehning J, Zierenberg J, Spitzner FP, et al. Inferring change points in the spread of COVID-19 reveals the effectiveness of interventions. *Science* 2020; **369**: eabb9789.
- 6 Giordano G, Blanchini F, Bruno R, et al. Modelling the COVID-19 epidemic and implementation of population-wide interventions in Italy. *Nature Medicine* 2020; **26**: 855-60.
- 7 Haug N, Geyrhofer L, Londei A, et al. Ranking the effectiveness of worldwide COVID-19 government interventions. *Nature Human Behavior* 2020; **4**: 1303-12.
- 8 Dykstra P, Fortunato E, Grobert N, et al. Independent expert report. Improving pandemic preparedness and management: lessons learned and ways forward. Nov 11, 2020. https://ec.europa.eu/info/sites/info/files/research_and_innovation/groups/sam/jointopinion_improvingpandemic_preparednessandmanagement_november-2020.pdf (accessed Dec 15, 2020).

Infectivity of asymptomatic versus symptomatic COVID-19

Asymptomatic cases of COVID-19 are a potential source of substantial spread within the community setting.¹ However, little information is available about the infectivity and epidemiological significance of people with asymptomatic COVID-19.²

Singapore's testing strategy for severe acute respiratory syndrome coronavirus 2 is designed to detect infection in both symptomatic and asymptomatic people. Various methods are used. Workers in specific industries, such as construction, marine, and process industries, are routinely tested once per week or every two weeks, and all close contacts of those who test positive for COVID-19 are tested as well. All COVID-19 case detection, regardless of symptom status, triggers public health actions, including contact tracing and the quarantining of close contacts. A close contact generally refers to a person who was within 2 m of the index case for at least 30 min (or for shorter durations in high-risk settings).³ All quarantined people are tested by PCR at the end of their quarantine period, and are only released from quarantine when they test negative for COVID-19. Serology tests are also done in most people who are infected, to determine the possible duration of their COVID-19 infection, and to assist with epidemiological investigations and containment efforts.³ As COVID-19 viral load is typically higher before seroconversion than after, seronegative cases are thought to be more infectious than seropositive cases.^{4,5}

To identify the relative infectivity of people with COVID-19 on the basis of their symptom and serology status, we studied all people who completed their quarantine between Aug 1 and Oct 11, 2020, as a result of being close community contacts of people who were infected and who had also



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