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## Letter to the Editor

**Commentary on the impact of the COVID-19 passports in Lithuania<sup>1</sup>**


Dear Editor

We bring to your attention the Letter to the Editor “Evaluating the potential impact of COVID-19 passports in Lithuania” from Stankunas et al.<sup>1</sup>

Stankunas et al. insist that “Lithuania has been relatively successful in managing the first peak of a COVID-19 outbreak”, referring to the low prevalence of SARS-CoV-2 antibodies. However, it indicates just the initial stage of the pandemic. Successful management implies minimal excess morbidity and mortality with as low as possible long-term consequences to public health. The authors claim that studies from other countries have reported a similar positive impact of COVID-19 passports on epidemiological trends, but they refer to a Lancet publication on the relationship between the introduction of COVID-19 certification and vaccine uptake. They also cite a pre-print of a working paper on estimations not assessed by reviewers.

**Missing explanation of the real situation in Lithuania**

The COVID-19 passports in Lithuania (September 13, 2021 – February 4, 2022) deprived non-holders of basal human rights including certain professional activities and studying.

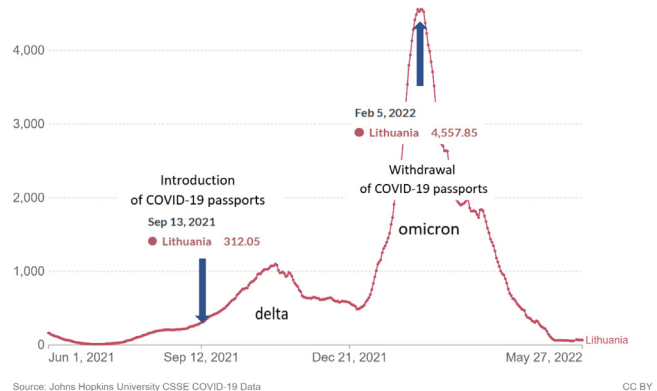
The idea for COVID-19 passports is based on a false claim that vaccination prevents the transmission of COVID-19. The randomized controlled clinical trials did not test the effect of vaccines on COVID-19 transmission.<sup>2,3</sup> Mortality did not serve as their endpoint.<sup>2,3</sup> Recent studies demonstrated that the number of COVID-19 cases in vaccinated vs unvaccinated individuals is not significantly different.<sup>4</sup> In the United Kingdom, the number of COVID-19 cases in vaccinated people was lower several months following the initial vaccination/booster but later it turned out to be higher.<sup>5</sup> In Lithuania, vaccinated people could freely participate in all events without any limit on crowding. In this way, COVID-19 passports might have contributed to the COVID-19 spread.

Stankunas et al. assumed that people begin to avoid contact when the number of COVID-19 cases and the consequences of COVID-19 exceed the psychological threshold. However, all infection waves follow the same pattern; changes in human behavior or non-pharmacological interventions such as COVID-19 passports may flatten the curve, but they cannot stop any wave. The article we criticize neither explains reasons to consider 1000 as a psychological threshold nor how COVID-19 passports could be involved in setting it. In the absence of that, the model is based on non-

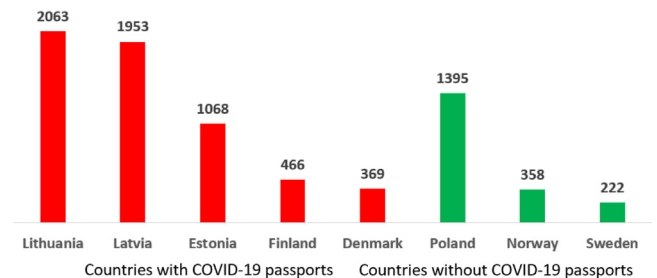
<sup>1</sup> The literal name for COVID-19 passports in Lithuania was passports of Opportunities.

**Daily new confirmed COVID-19 cases per million people**

7-day rolling average. Due to limited testing, the number of confirmed cases is lower than the true number of infections.



**Fig. 1.** Delta and omicron waves (7-day rolling average of daily new confirmed COVID-19 cases in Lithuania).<sup>6</sup>



**Fig. 2.** Excess mortality per 1000,000 inhabitants in the Baltic region from September 12, 2021, till February 4, 2022.<sup>6</sup>

existing data. Only herd immunity can explain the decline of both delta and omicron waves (Fig. 1).

The assumption that COVID-19 passports stopped the delta wave at the phase of exponential growth neglects the basal principle of infection spread.<sup>7</sup> Stankunas et al. accepted the time relation between the introduction of COVID-19 passports and the decline in the effective reproduction rate of COVID-19 as proof of causation explaining the delay by human behavior inertia. However, the COVID-19 passports prohibited certain activities from the first day of the application rather than targeting behavior.

Lithuania recorded the highest excess mortality in the Baltic region during the period of the COVID-19 passports. The average excess mortality in countries with COVID-19 passports was 1.8 times higher (1184 vs 658, respectively, averages of countries in red vs. green; Fig. 2).

The COVID-19 passports could even have contributed to high excess mortality, e.g., due to disturbed health services (some

healthcare professionals rejected both COVID-19 vaccines and expensive COVID-19 testing, etc.).

### Missing public health dimensions

An important principle of public health is to work so that individuals can make good choices for their health. Restricting rights based on COVID-19 passports undermine this principle. The COVID-19 models missed the public health dimension and overestimated the infection spread.<sup>8</sup> Exponential spread is a mechanical process, whereas people in a society observe, communicate, learn, and take precautions regardless of any prohibitions. The COVID-19 passports do not consider this, dehumanizing people to the point that we are only pawns in a puzzle. Epidemiological intervention is unavoidably constrained by social conditions and its deployment pursues supra-individual effects.

### Missing explanation of the validity of the modeling

The Letter to the Editor used the SIR (Susceptible-Infectious-Recovered) model of the infection spread.<sup>9</sup> However, it is not validated for non-pharmaceutical interventions.

Stankunas et al. considered both symptomatic and asymptomatic COVID-19 cases reported. However, they neglected the probability of false-positive/false-negative tests as well as the fact that only some proportion of cases has been reported.

In the classical SIR model, infected persons initially constitute a small proportion of the population. The number of new infections is proportional to the number of uninfected persons; therefore, the number of new infections grows exponentially. After reaching the peak, the number of uninfected persons decreases as well as the number of new infections. However, the authors of the Letter to the Editor assumed that the spread of the delta wave was stopped at the phase of exponential growth.

### Missing ethical considerations

Finally, we found an elephant in the room unnoticed. Two authors declared that they are members of the Health Experts Council under the President. As the President was not involved in the decisions of the Government, the significance of this competing interest is low. However, MS did not disclose the critical direct interest: he was a member of the Advisory Board under the Government and favored COVID-19 passports.<sup>10</sup>

### Declaration of Competing Interest

The authors have no competing interests.

### CRediT authorship contribution statement

**Rimas Jankunas:** Conceptualization, Writing – original draft, Writing – review & editing. **Leonidas Sakalauskas:** Writing – review & editing, Conceptualization, Data curation, Writing – original draft. **Kristina Zamaryte-Sakaviciene:** Writing – review & editing. **Donatas Stakisaitis:** Writing – review & editing. **Migle Helmersen:** Writing – review & editing.

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Supplementary material associated with this article can be found, in the online version, at doi:[10.1016/j.jinf.2022.12.013](https://doi.org/10.1016/j.jinf.2022.12.013).

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