

THE IMPACT OF RD-X19 ON THE LOSS OF PRODUCTIVITY FROM COVID-19 IN NORTH CAROLINA

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Background

- The COVID-19 pandemic has led to substantial health and economic burdens due to loss of productivity.
- The blue-light emitting device RD-X19, which stimulates local immunity to expedite recovery from mild to moderate COVID-19, presents a promising intervention.
- The aim of this work is to explore the potential value of RD-X19 for curbing COVID-19-associated productivity loss.

Methods

- We employed the Covasim framework (**Figure 1**) for in-depth agent-based COVID-19 simulations.¹
- Vaccine efficacy is not assumed to be 100%, instead, a realistically waning vaccine efficacy and immunity were modeled
- We compared the standard of care to a scenario where RD-X19 is given to 10% of symptomatic workers aged 21-65 in North Carolina from January 2023 to January 2024.
- This conservative 10% value was chosen for its simplicity.
- Simulations were based on CDC data and assumptions on prior immunity and the absence of imported cases.
- Sick leave is counted as the total number of days from symptom onset to recovery.
- Economic estimates incorporated 2022 U.S. labor statistics.²
- Model validity was tested against 2023 CDC data (**Figure 2**).³

One household



Many households

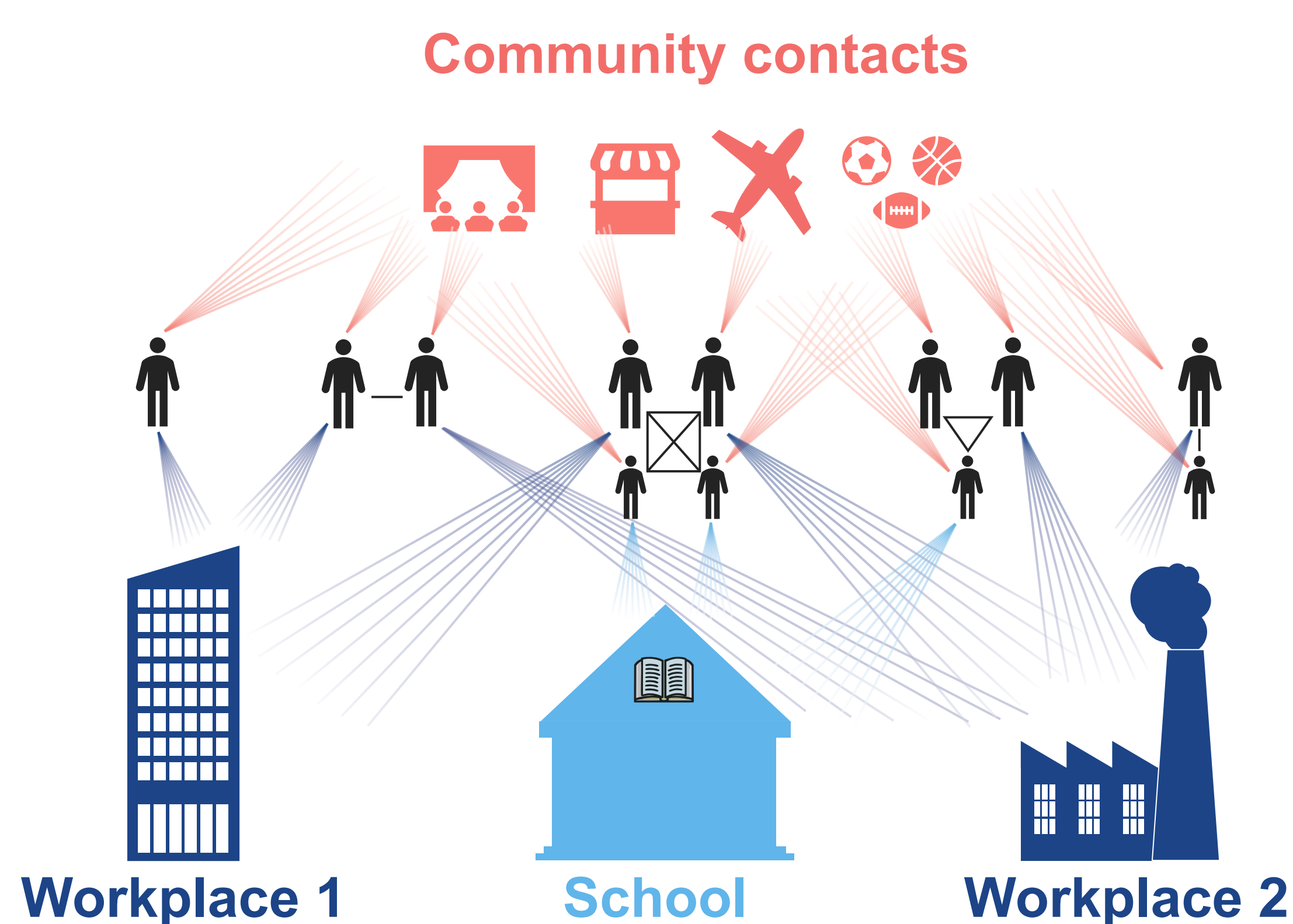


Figure 1 Covasim framework adopted from Kerr et al. 2021¹. Every person is simulated with different daily interactions. This includes both internal and external contacts of each household.

Conclusion

- RD-X19 integration into COVID-19 management for mild to moderate cases could significantly reduce productivity loss.
- Even with a moderate uptake, the economic implications are substantial, indicating potential savings in the hundreds of millions.
- These findings underscore the potential of RD-X19 to mitigate the socioeconomic impacts of the COVID-19 pandemic.

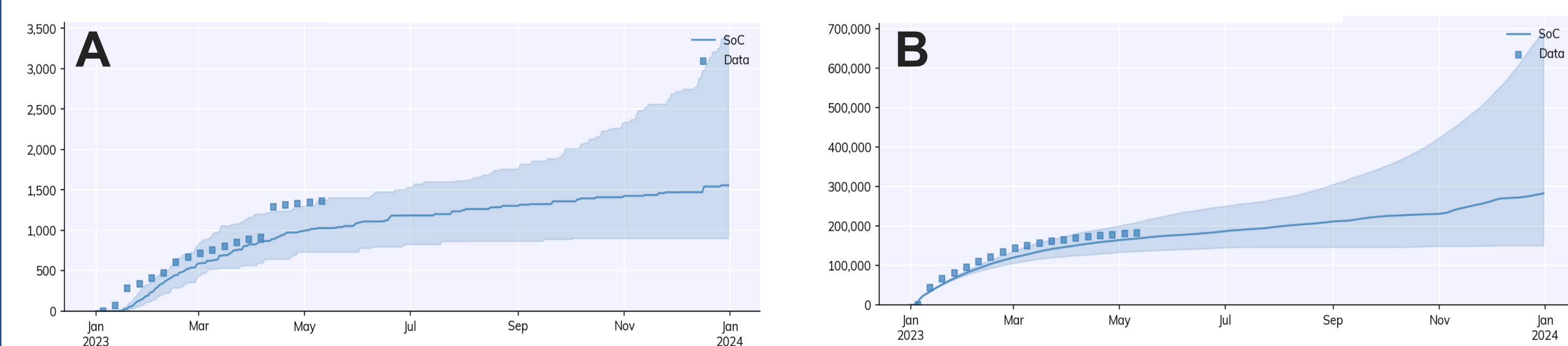


Figure 2 The model was trained to ensure it represents real-world data as closely as possible and then used to simulate COVID-19 in North Carolina throughout 2023. **A)** Cumulative deaths; **B)** Cumulative symptomatic cases SoC: Standard of care

Results:

- RD-X19 use led to an estimated reduction of approximately 221,000 (CrI 95% [198,000, 244,000]) COVID-19 cases, preserving roughly 2.1 million working days in North Carolina (**Figure 3**).
- This equates to potential productivity savings of about \$250 million.
- A subgroup analysis showed a strong benefit for workers between the age of 40-65 (**Figure 4**).

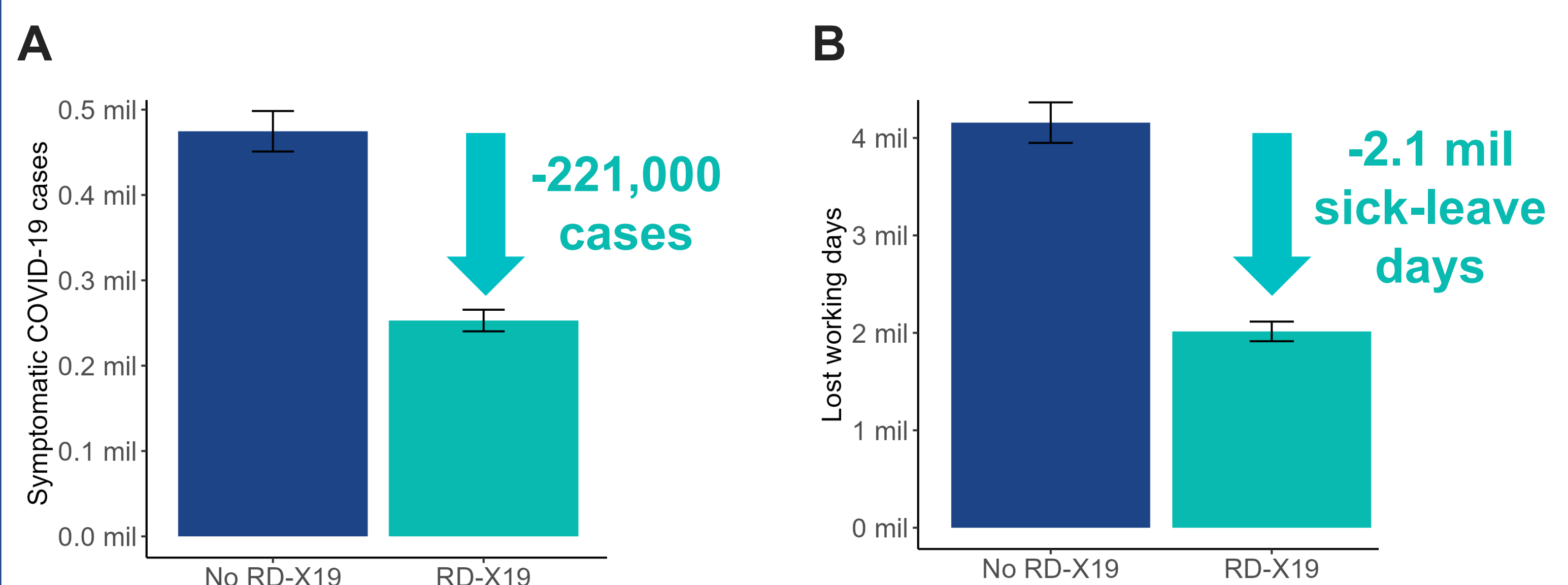


Figure 3 The impact of giving RD-X19 to 10% of mild/moderate cases among workers (Age 21-65). **A)** Reduction of COVID-19 cases **B)** Reduction of sick-leave days

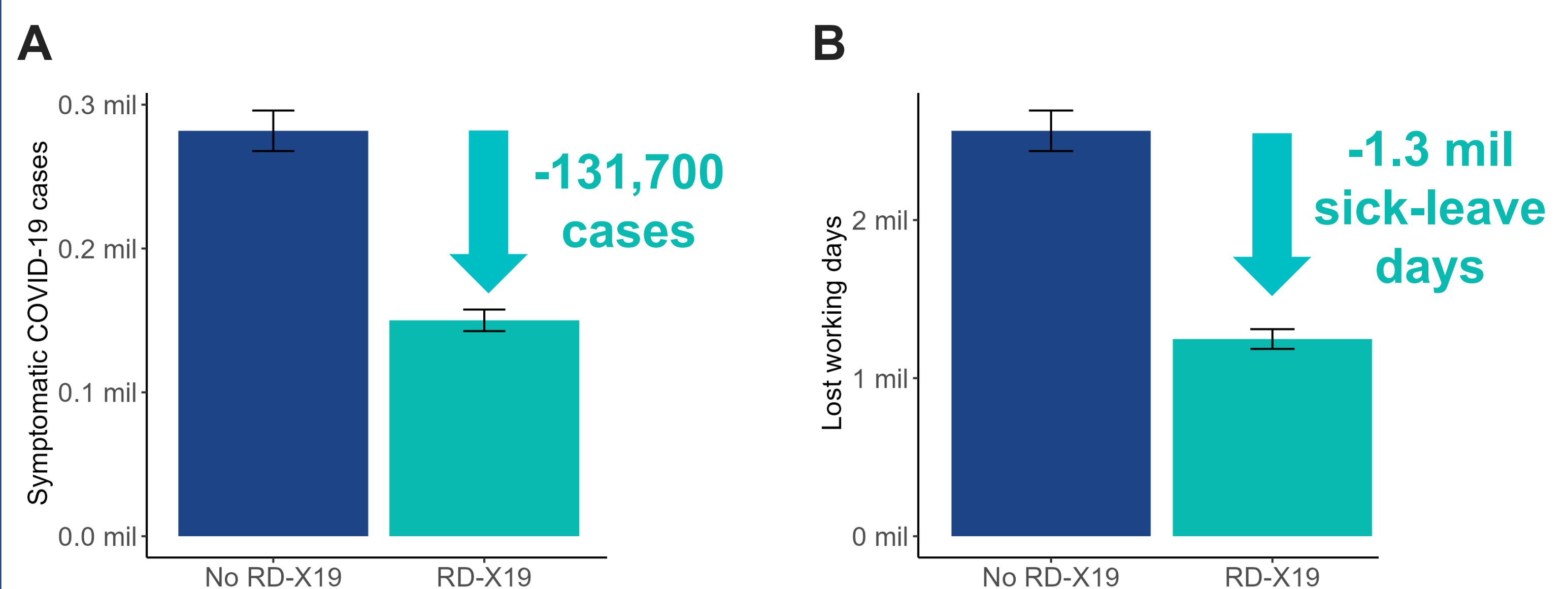


Figure 4 The impact of giving RD-X19 to 10% of mild/moderate cases among workers (Age 40-65). **A)** Reduction of COVID-19 cases **B)** Reduction of sick-leave days

Disclosure

MC and US are employees and RS is the owner of Coreva Scientific GmbH & Co KG, all of whom received consultancy fees for this research. The research was funded by EmitBio™.

References

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2. U.S. Bureau of Labor Statistics, <https://www.bls.gov/eag/eag.nc.htm>, accessed Oct 2023
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