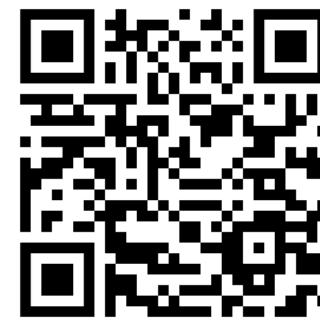


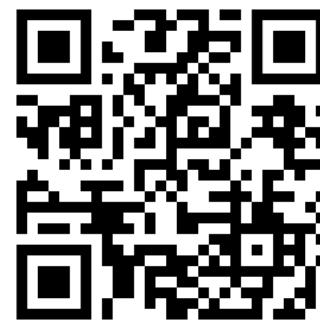
The global landscape of smallpox vaccination history

Implications for current and future orthopoxvirus susceptibility

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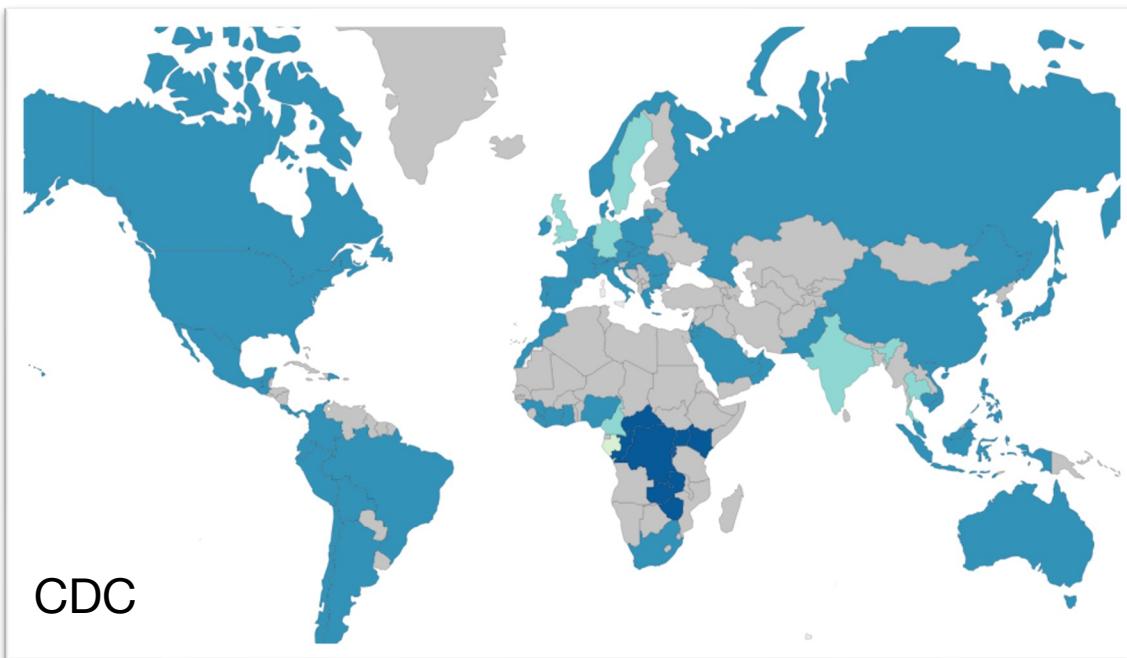
The legacy of historical smallpox vaccination



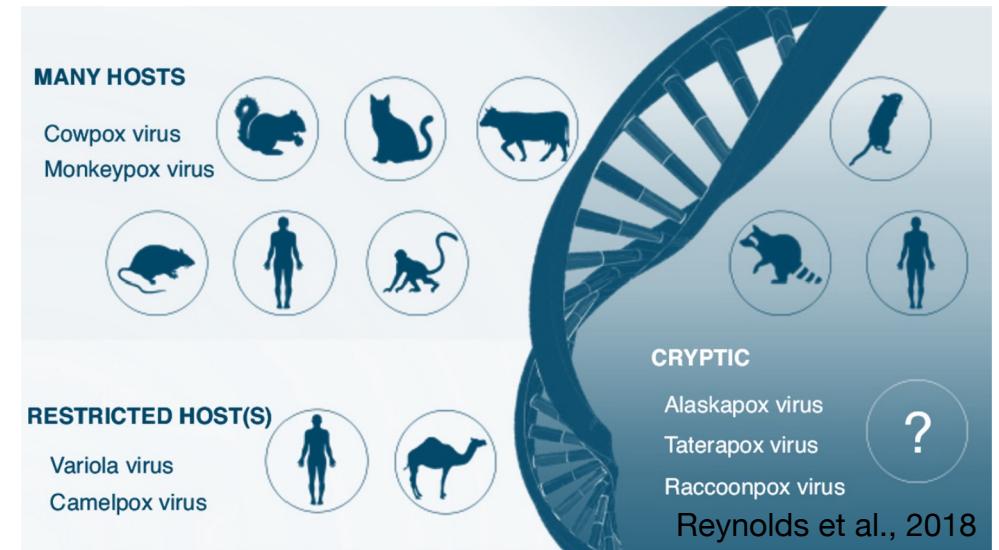
Historical smallpox vaccination efforts were **heterogeneous** leaving a modern **patchwork** of long-lasting protection

Smallpox vaccine protection is relevant today

Ongoing mpox outbreaks



Orthopoxvirus spillover

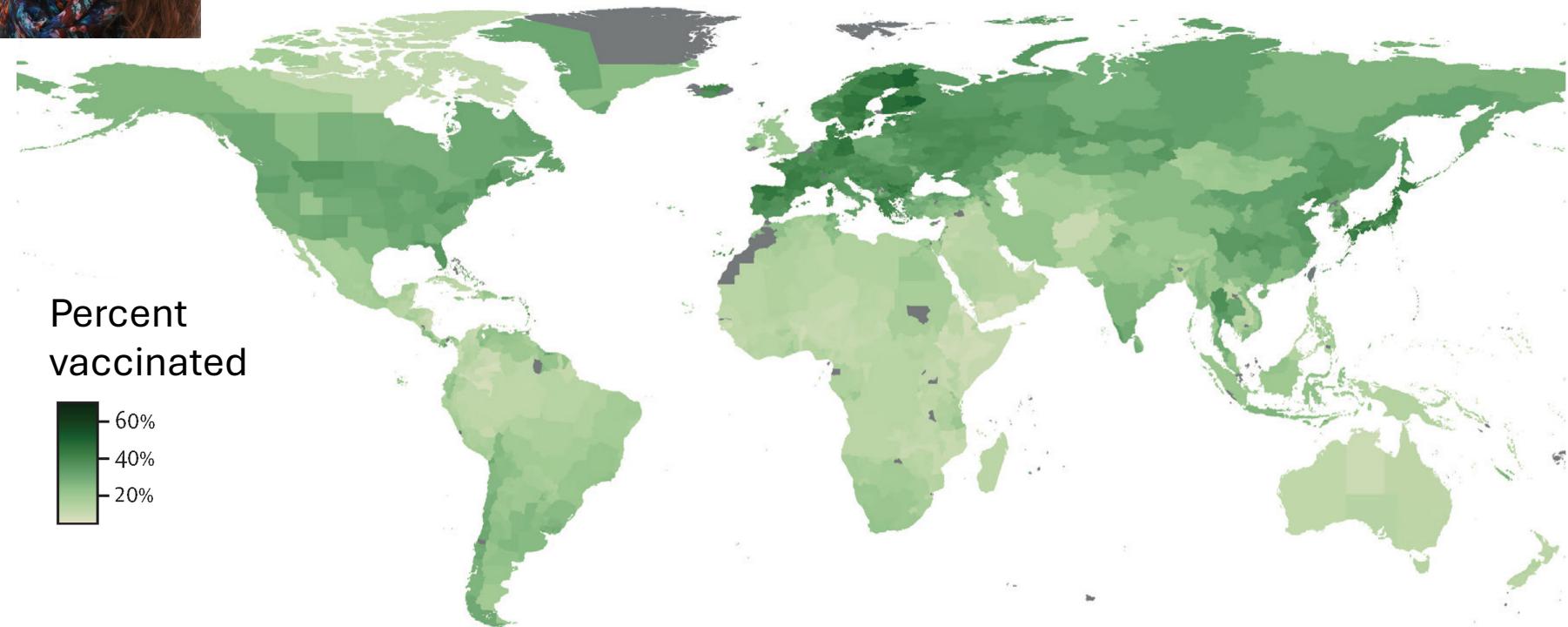
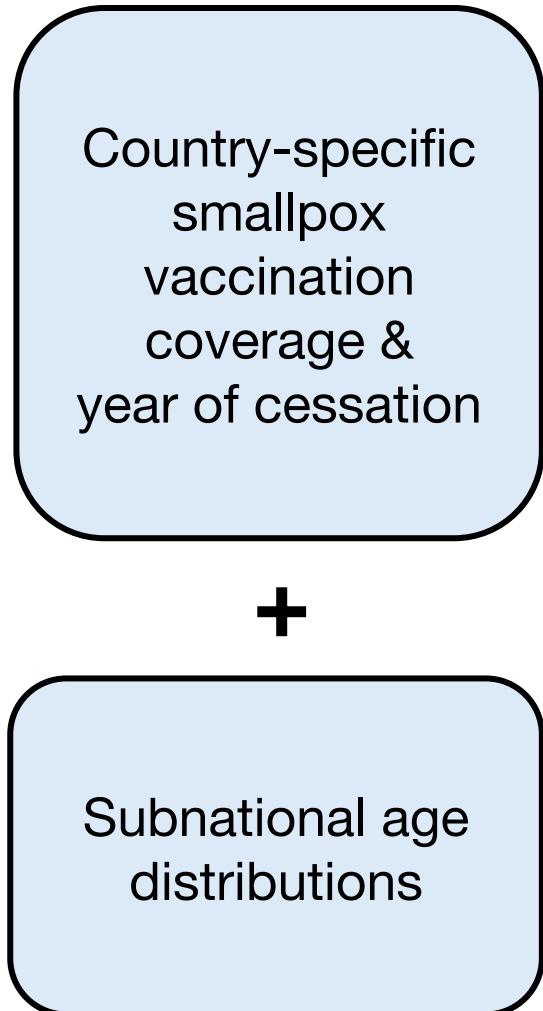


Smallpox bioterrorism



Estimating current levels of smallpox vaccination

Historical smallpox vaccination
Demography

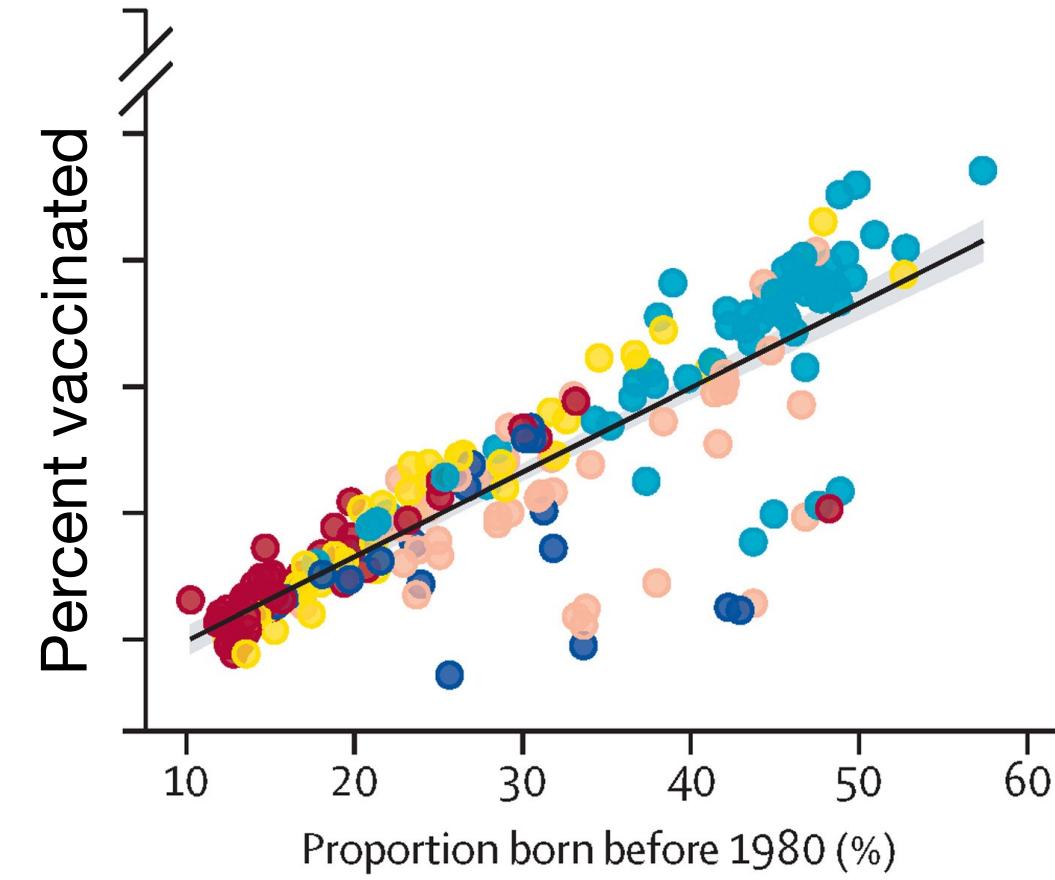
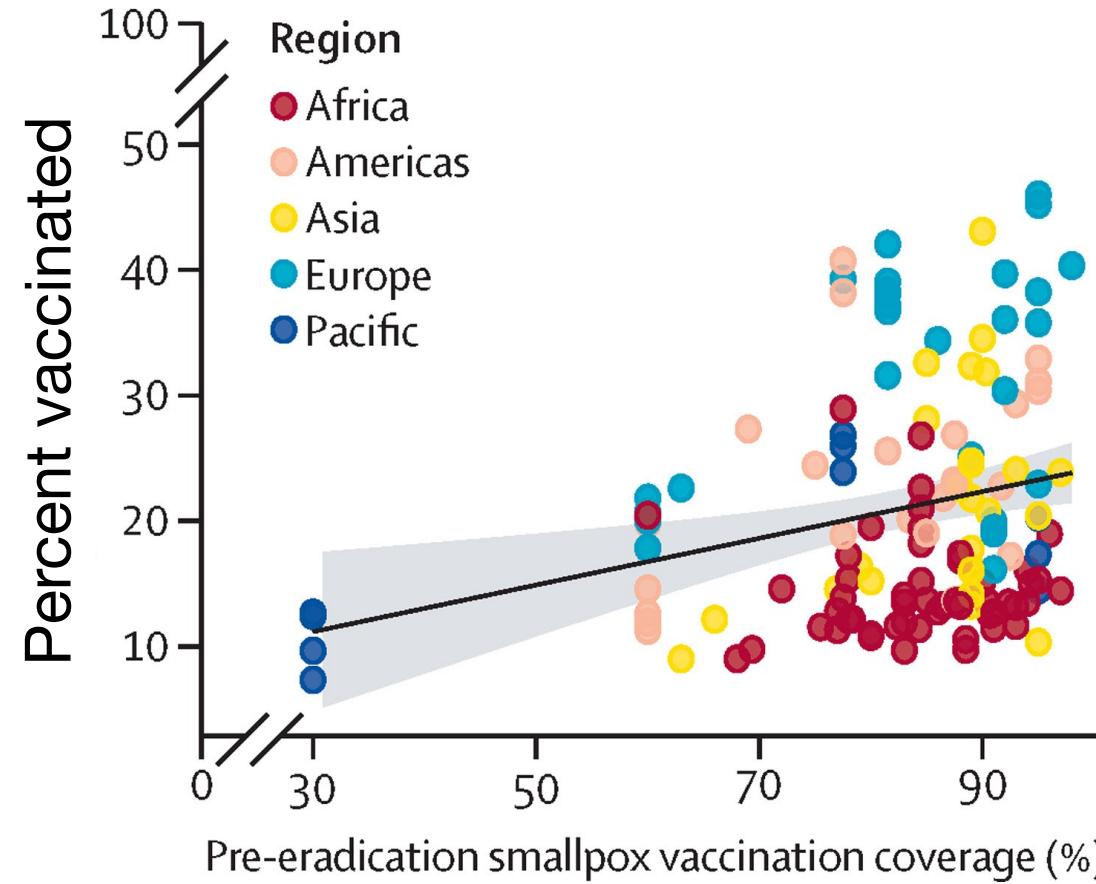


Factors driving vaccination heterogeneity

Historical coverage



Demography

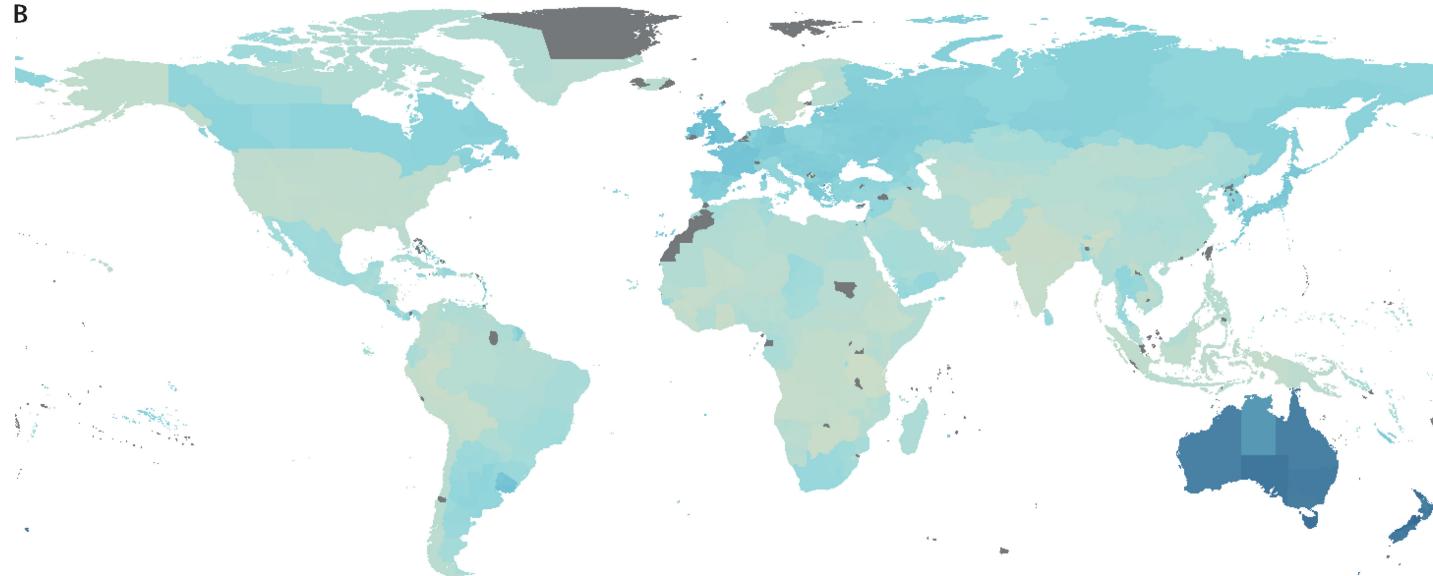


Demography drives current levels of vaccination

Counterfactual scenarios

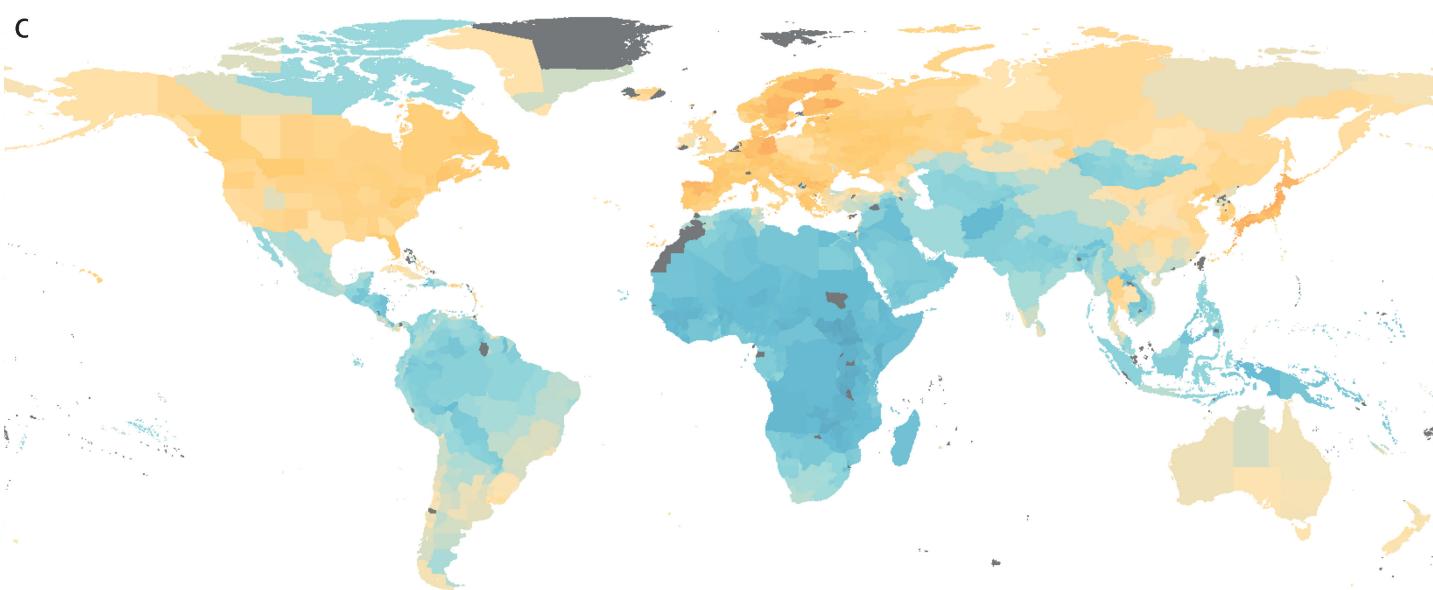
Universal
vaccination

B

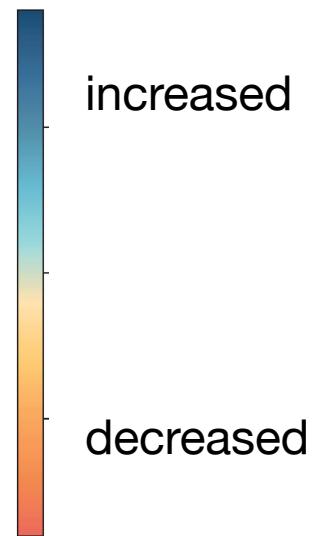


Homogeneous
demography

C



Vaccination
level



Takeaways



Substantial global protection against orthopoxviruses



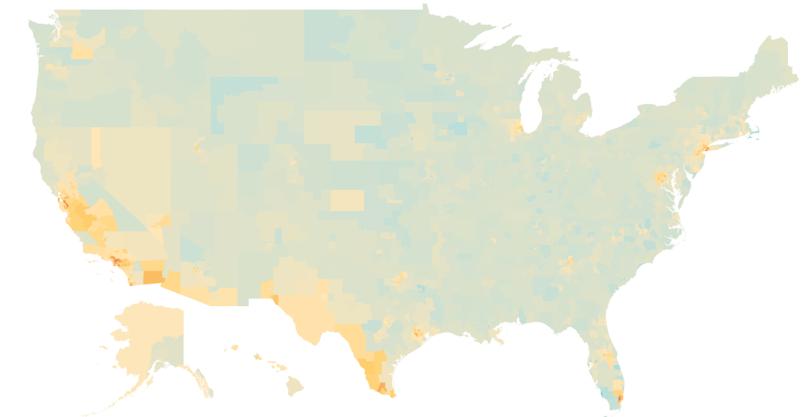
Significant geographic heterogeneity in protection

- Driven by demographic changes

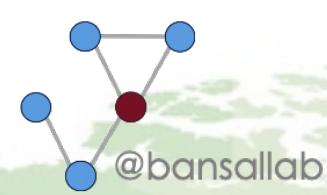


Estimates can be used to

- Assess risk
- Allocate vaccine supplies
- Predict transmission dynamics



Ask me about how immigration affects US vaccination levels!



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Thank you!



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