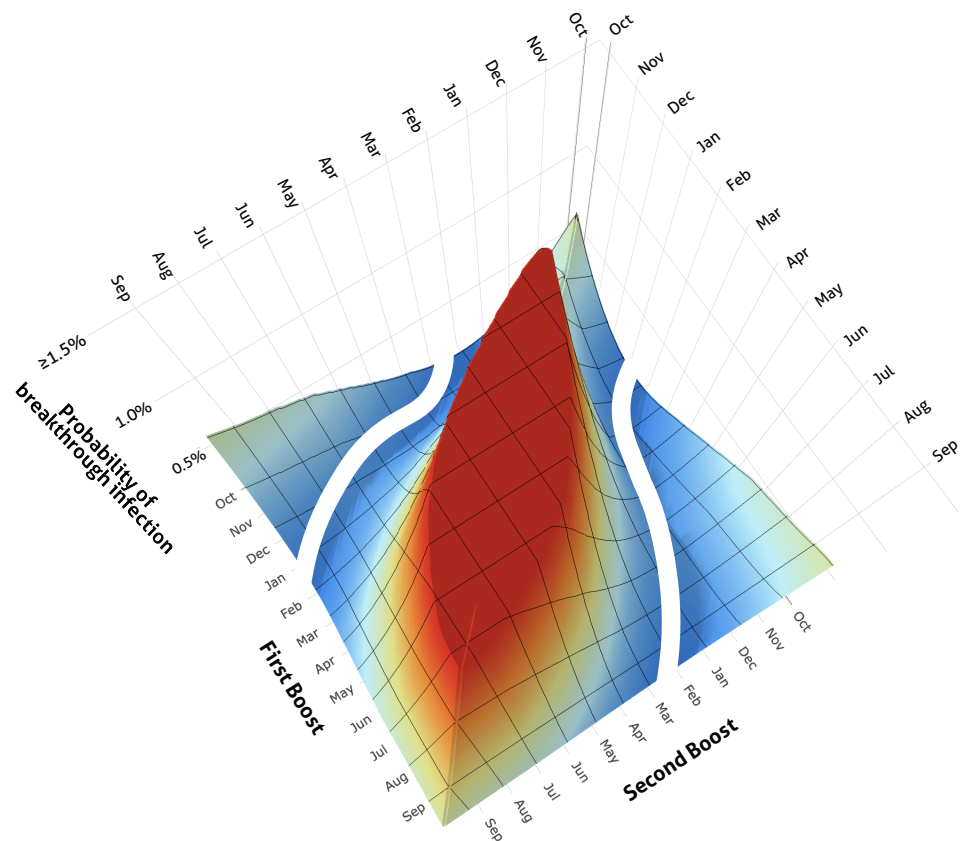


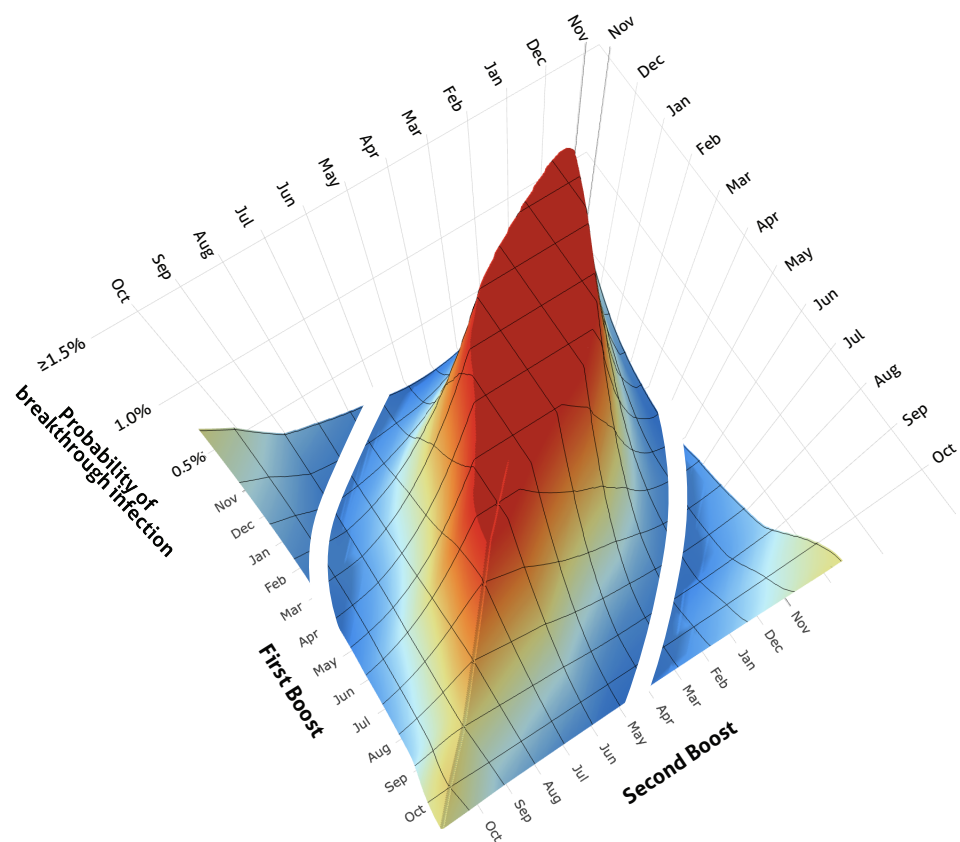
A

STOCKHOLM, SWEDEN



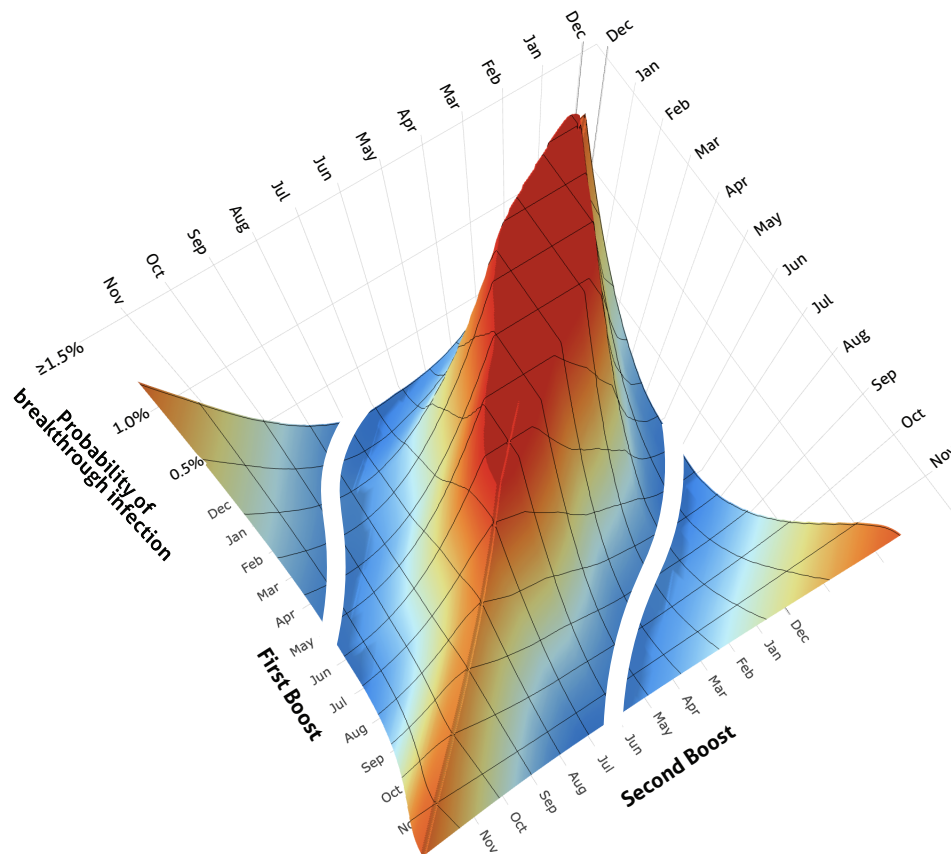
B

GOTHENBURG, SWEDEN



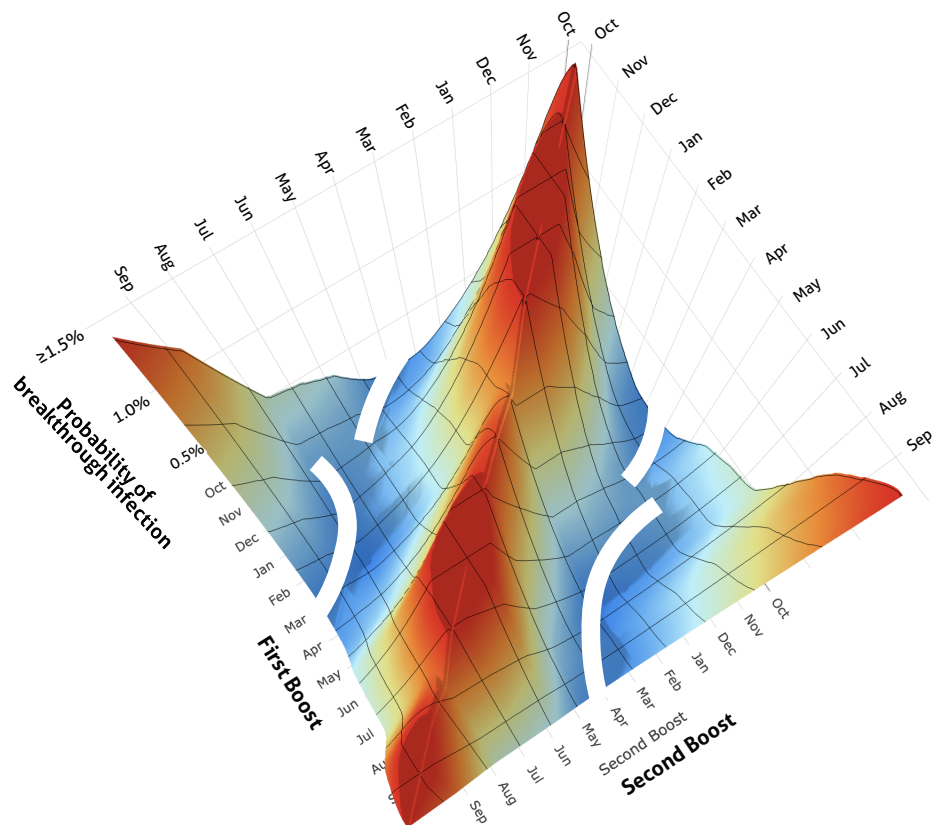
C

NEPAL



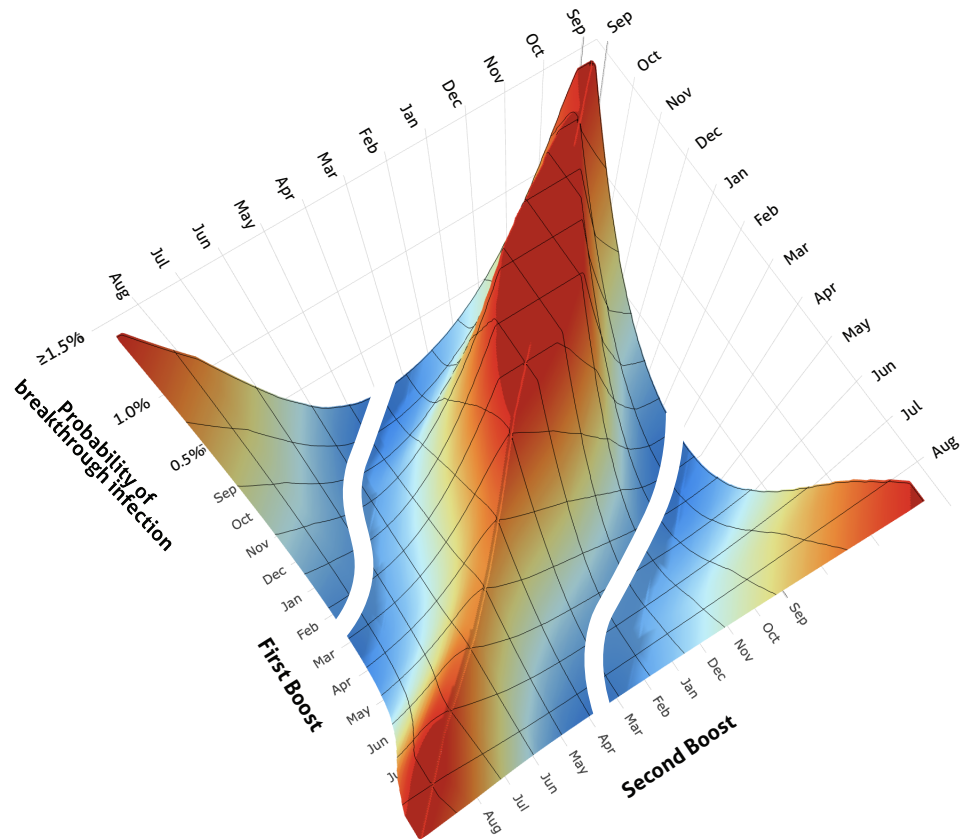
D

BEERSHEBA, ISRAEL



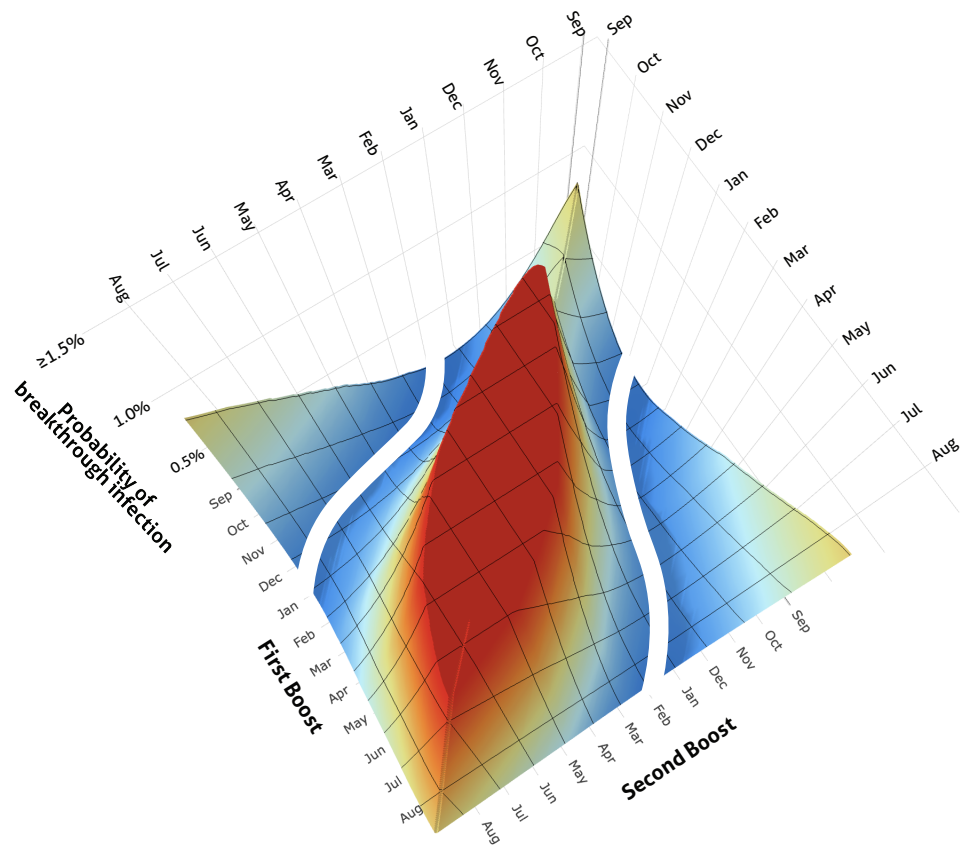
E

NEW YORK CITY (2024)



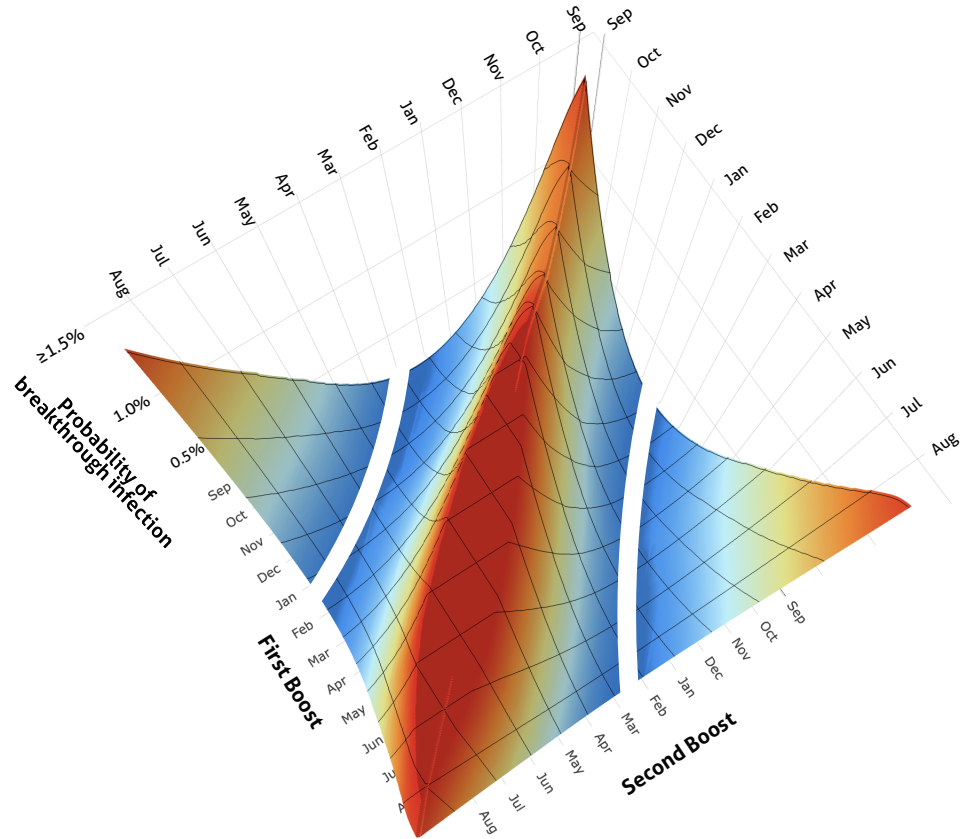
F

TRØNDELAG, NORWAY



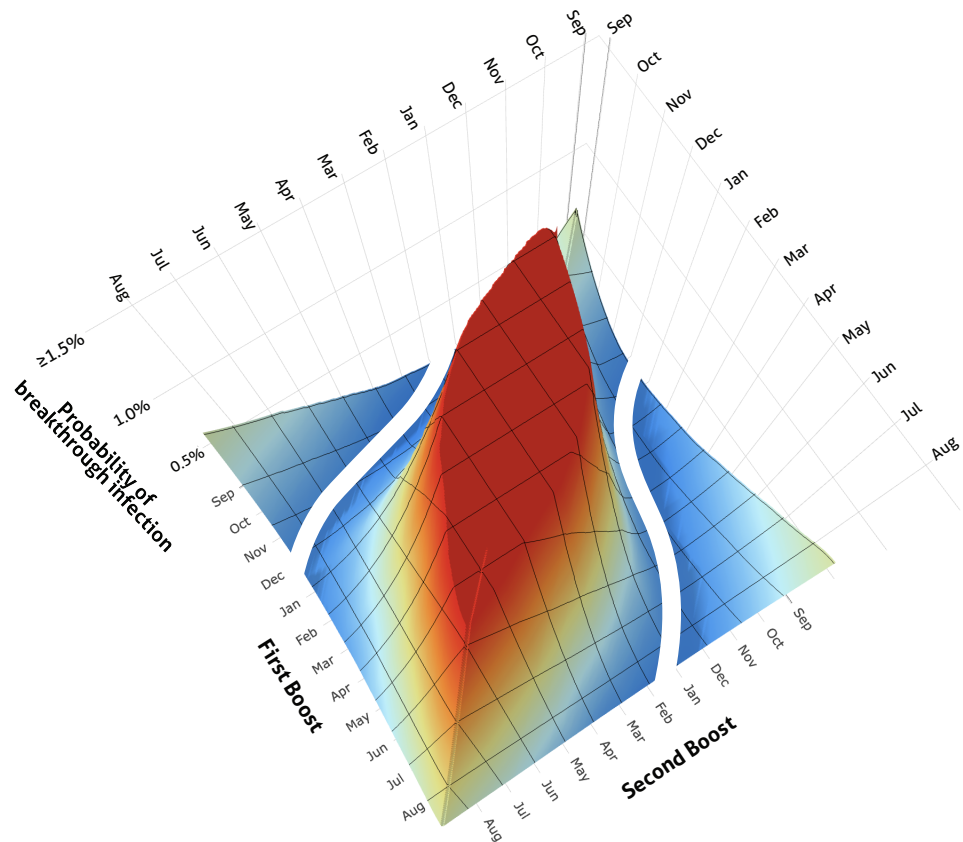
G

AMSTERDAM, NETHERLANDS



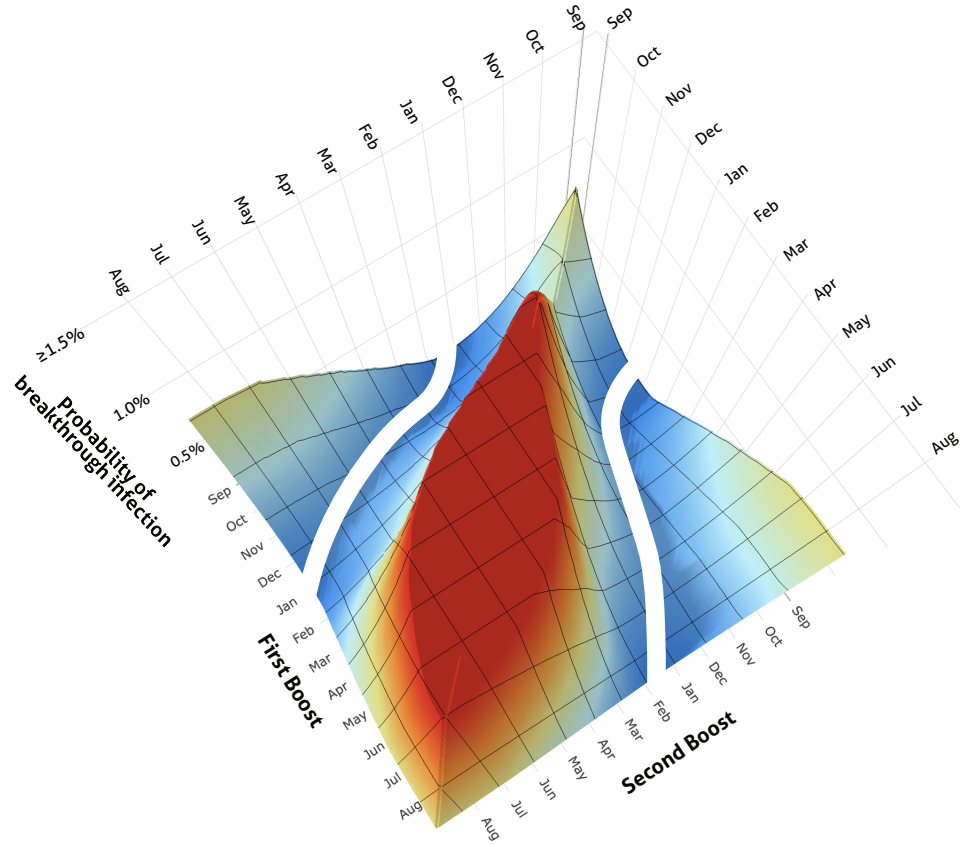
H

SOUTH KOREA



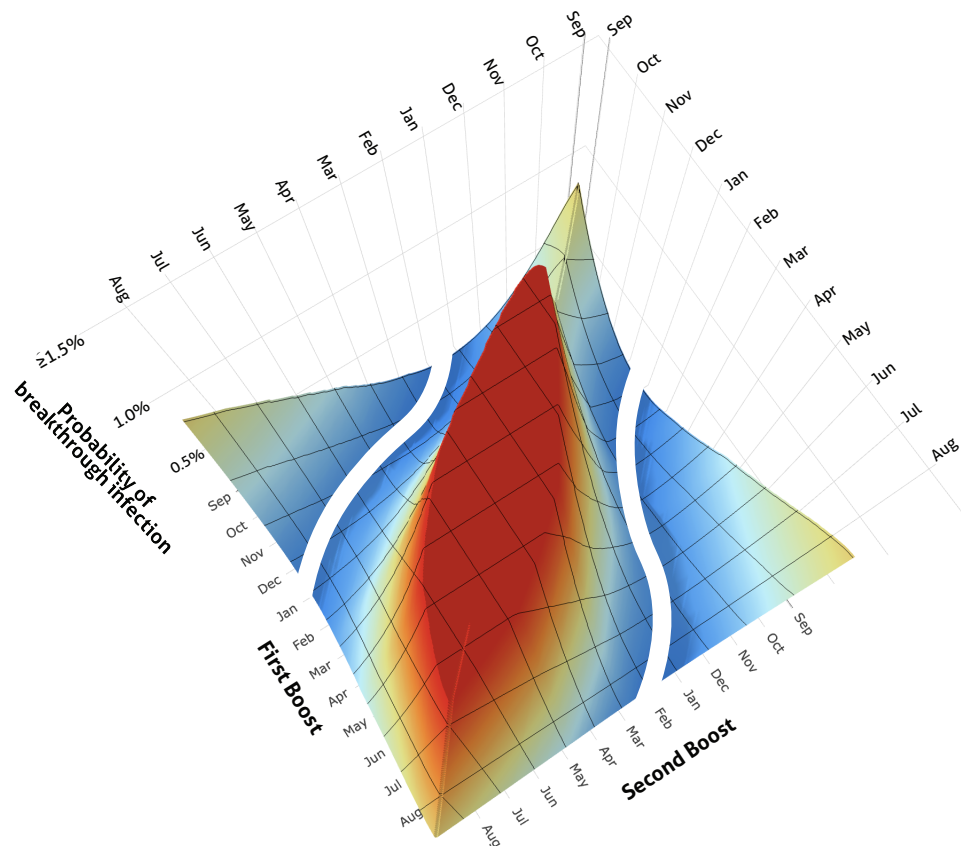
I

EDINBURGH, UK



J

GUANGZHOU, CHINA



K

YAMAGATA, JAPAN

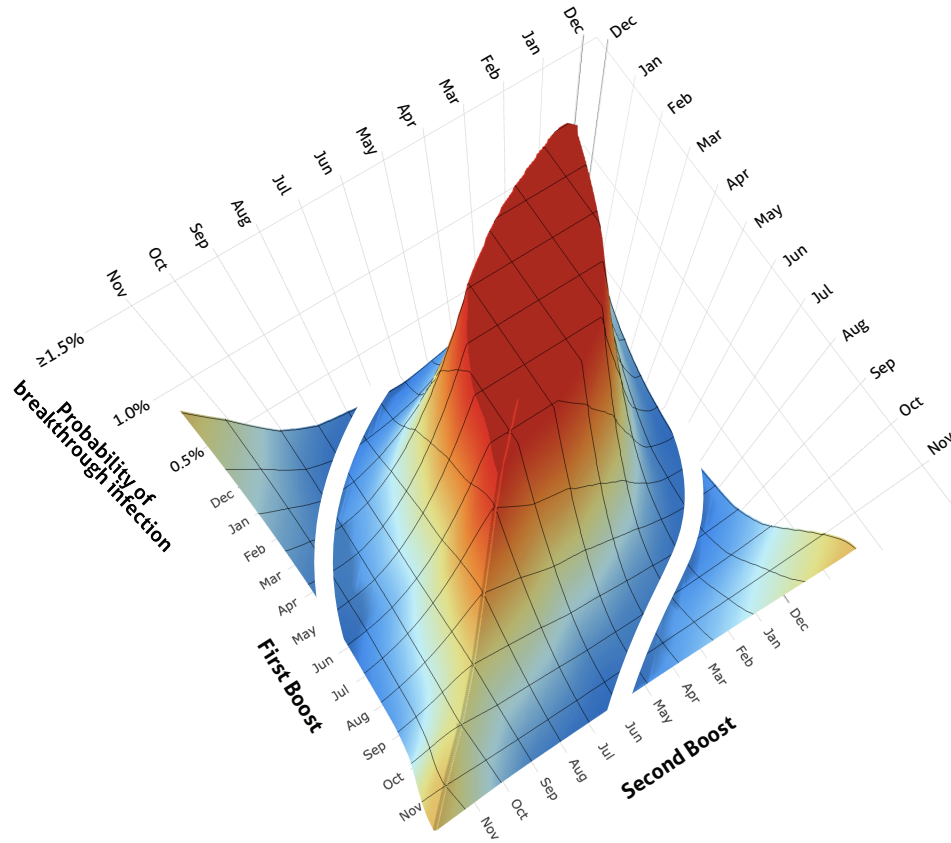


Figure S1. Probabilities of breakthrough infection for each biannual boost pairing (high: red, low: blue; optimal: white) for **A.** Stockholm, Sweden; **B.** Gothenburg, Sweden; **C.** Nepal; **D.** Beersheeba, Israel; **E.** New York City in 2024; **F.** Trøndelag, Norway; **G.** Amsterdam, Netherlands; **H.** South Korea; **I.** Edinburgh, UK; **J.** Guangzhou, China; **K.** Yamagata, Japan.