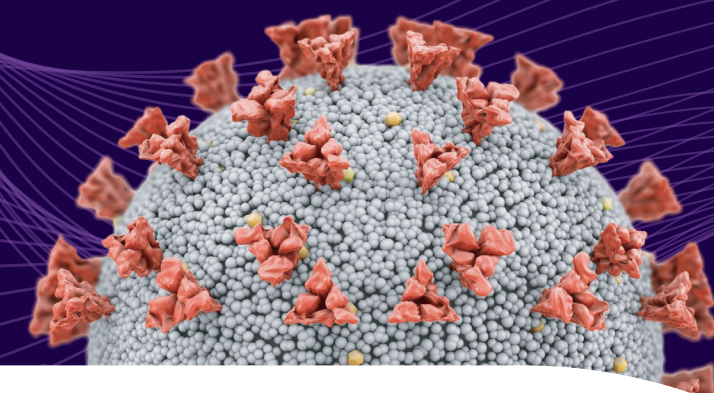
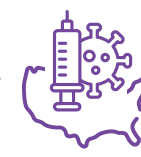


# Recombinant Protein COVID-19 Vaccine: Clinical Efficacy and Tolerability

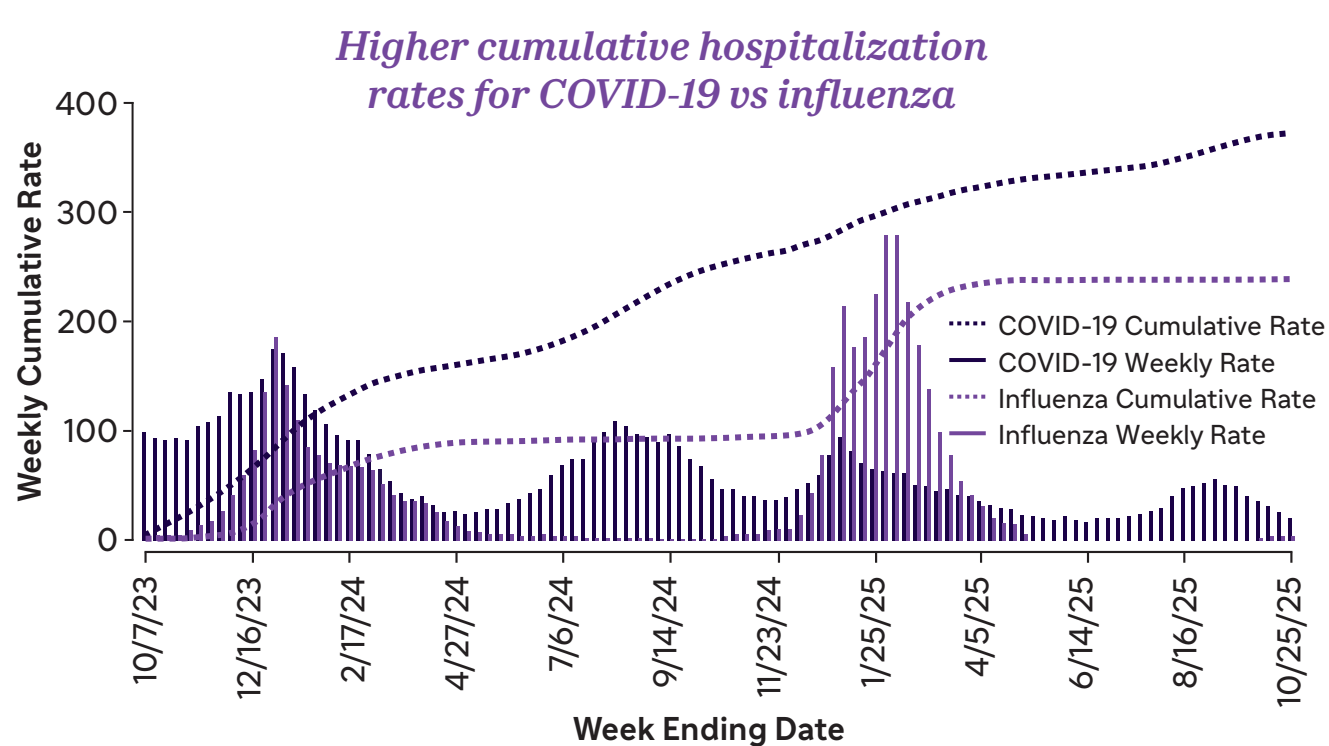
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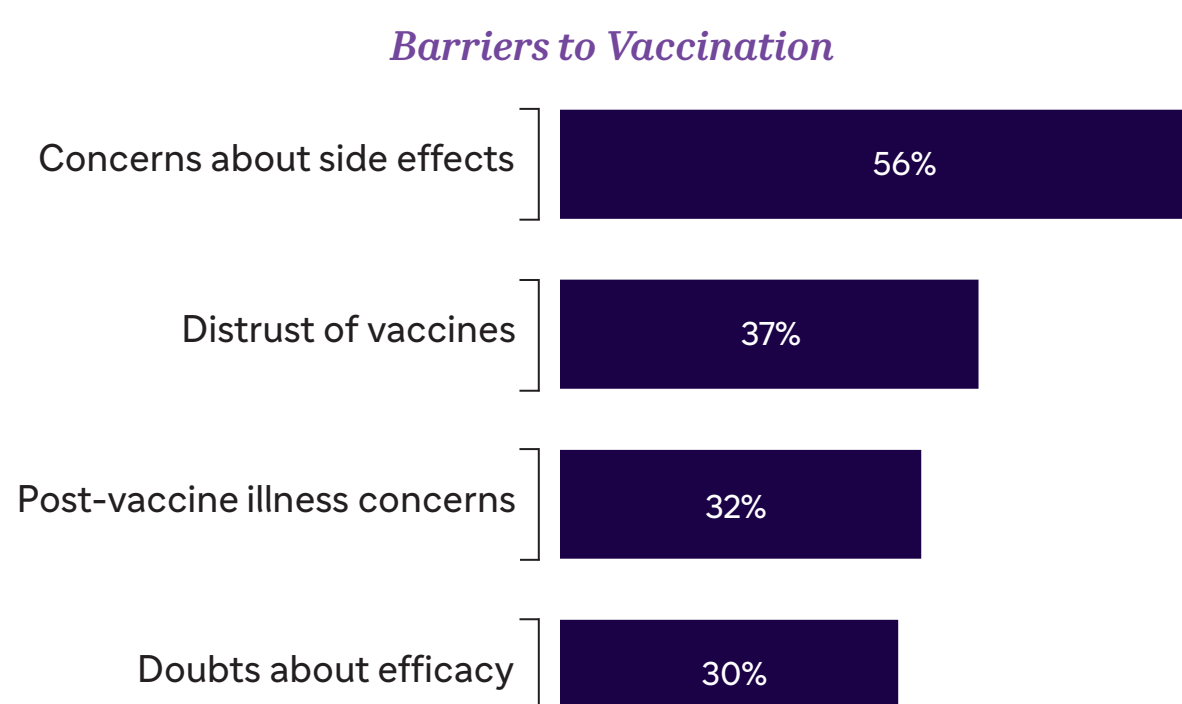
## US COVID-19 Landscape: Disease Burden and Vaccination Challenges



Weekly and cumulative rates of hospitalization due to COVID-19 and Influenza in adults aged 18+ (2023–2025 season)<sup>1</sup>



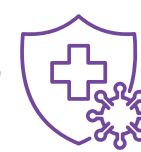
Barriers to COVID-19 Vaccination: 2024 National Foundation for Infectious Diseases Survey Findings<sup>2</sup>



In a 2023–2024 study of US veterans, patients hospitalized for COVID-19 had a **35% increased risk of death** vs those hospitalized for influenza (adjusted death rate, 5.70% vs 4.24% at 30 days; adjusted HR, 1.35 [95% CI: 1.10–1.66])<sup>3</sup>

COVID-19 Vaccination rates among US adults aged 18+ are low and lag behind influenza: **17% vs 45%** in 2025–2026 season<sup>4,5</sup>

## Efficacy and Reactogenicity of Recombinant Protein COVID-19 Vaccine



Pivotal Trial: PREVENT-19 (Phase 3 observer-blinded RCT)



Randomized **2:1** to receive 2 doses of **NVX** or placebo, 21 days apart<sup>6,7</sup>

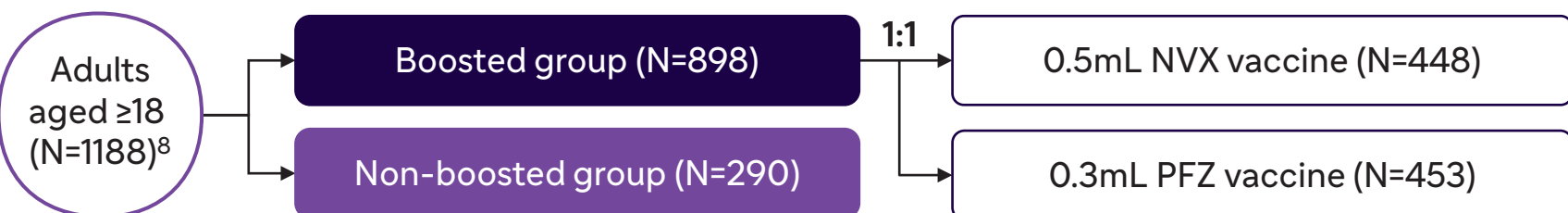
**Primary Endpoint:** PCR-positive symptomatic COVID-19 (mild, moderate, or severe) occurring  $\geq 7$  days after dose <sup>2,6,7</sup>



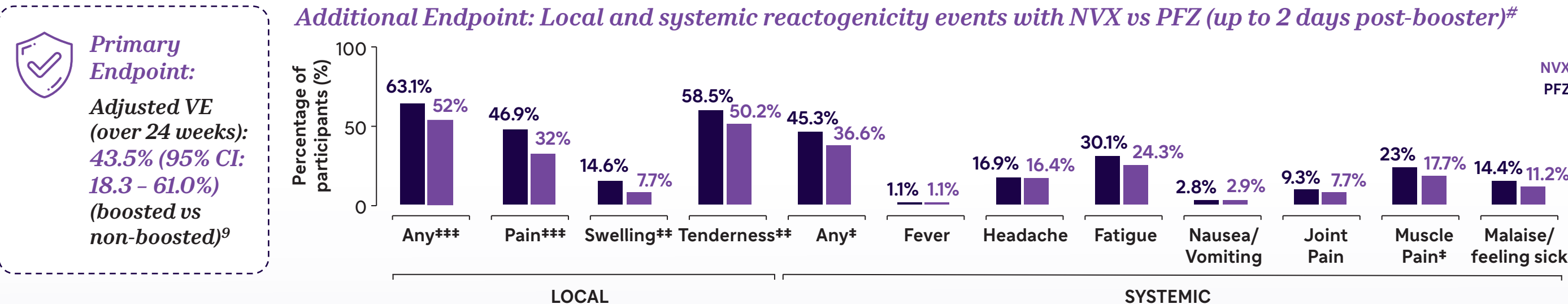
### Limitations<sup>6,7</sup>

- Short vaccine-efficacy follow-up
- Low enrollment of adults  $\geq 65$  years due to EUA vaccine availability
- Imbalance in unblinding requests early in the trial
- Low case accrual in each group

BEEHIVE (Double-blinded multi-arm RCT)<sup>a</sup>



**Primary Endpoint:** VE of boosted vs non-boosted participants against symptomatic COVID-19<sup>9,b</sup>



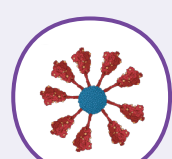
\*p-value <0.05; \*\*p-value <0.01; \*\*\*p-value <0.001. #Descriptive statistics (means, SD, and frequencies). Two sample t-tests comparing the mean number of reactogenicity events with grade 1 or higher (systemic and local) between the two vaccine groups on each day

### Limitations<sup>8,9</sup>

- Single-site enrollment
- Limited population diversity
- Potential survey inaccuracies
- Underpowered to statistically assess non-inferiority of NVX vs PFZ due to low enrollment, low attack rate, and higher assumed VE

<sup>a</sup>This data was presented as a poster at the ESCMID congress in April 2025, Vienna, Austria and at IDWeek 2025. At this time, this data has not been published in a peer-reviewed journal

## Nuvaxovid Platform: Recombinant Protein Nanoparticles Adjuvanted With Matrix-M™ Technology



Recombinant protein nanoparticle



Matrix-M™

5  $\mu$ g rS + 50  $\mu$ g Matrix-M adjuvant (to enhance immune response magnitude, breadth, and durability)<sup>10,11</sup>

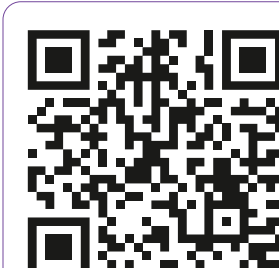
Convenient administration and storage (formulated as 5 $\mu$ g/0.5 mL pre-filled syringe, refrigerator-stable)<sup>10</sup>

\*Overall efficacy: per protocol population; †D614 strain; <sup>b</sup>RAT to detect SARS-CoV-2 infection every week for 24 weeks

**Abbreviations:** BEEHIVE, Booster Epidemiological Evaluation of Health, Illness, and Vaccine Efficacy; CI, confidence interval; COVID-19, coronavirus disease – 2019; EUA, emergency use authorization; HCP, healthcare professional; HepB, hepatitis B; HR, hazard ratio;  $\mu$ g, microgram; mL, milli litre; NVX, Nuvaxovid recombinant protein COVID-19 vaccine (Sanofi); PCR, polymerase chain reaction; PFZ, Comirnaty mRNA COVID-19 vaccine (Pfizer-BioNTech); PREVENT-19, Prefusion Protein Subunit Vaccine Efficacy Novavax Trial–COVID-19; RAT, rapid antigen testing; RCT, randomized controlled trial; rS, recombinant spike protein; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; SD, standard deviation; US, United States; VE, vaccine effectiveness; VOC, variants of concern; VOL, variants of interest

**References:** 1. CDC. Updated November 18, 2025. Accessed January 28, 2026. <https://www.cdc.gov/resp-net/dashboard/index.html>; 2. NFID. Updated September 25, 2024. Accessed February 26, 2026. <https://www.nfid.org/resource/2024-national-survey-attitudes-and-behaviors-about-influenza-covid-19-respiratory-syncytial-virus-and-pneumococcal-disease/>; 3. Xie Y, et al. *JAMA*. 2024;331(22):1963–1965; 4. CDC. Updated December 3, 2025. Accessed January 28, 2026. <https://www.cdc.gov/fluview/dashboards/adult-coverage.html>; 5. CDC. Updated December 3, 2025. Accessed January 28, 2026. <https://www.cdc.gov/fluview/dashboards/adult-coverage.html>; 6. Dunkle LM, et al. *N Engl J Med*. 2022;386(6):531–543; 7. Añez G, et al. *JAMA Netw Open*. 2023;6(4):e239135; 8. Yoon SK, et al. Difference in reactogenicity events between mRNA and Protein-subunit Vaccines: Results from the Booster Epidemiological Evaluation of Health, Illness, and Vaccine Efficacy (BEEHIVE) Study, a U.S. randomized trial of 2023–2024 COVID-19 vaccines (XBB.1.5). Poster P1657 presented at: IDWeek; October 19–22, 2025; Atlanta, USA; 9. Yoon SK, et al. Preliminary Safety and Effectiveness Estimate of 2023–2024 COVID-19 vaccines (XBB.1.5) in Preventing Symptomatic Infections in U.S. adults. Poster P0404 presented at: 35th Congress of European Society of Clinical Microbiology and Infectious Diseases (ESCMID); April 11–15, 2025; Vienna, Austria; 10. NUVAXOVID (COVID-19 Vaccine, Adjuvanted) [package insert]. Novavax, Inc.; [2025]; 11. Stertman L, et al. *Hum Vaccin Immunother*. 2023;19(1):2189885

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