

VAXART

The Pill Against COVID-19

SVBLEERINK 

2020 CybeRx Call Series

September 23rd 2020

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Key Investment Highlights



01 Transformative Oral Vaccine Platform

Potential to disrupt the vaccine ecosystem



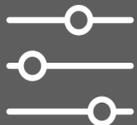
02 Oral COVID-19 Program may offer the Best Practical Global Solution to Pandemic

Oral convenience, potential superior efficacy due to mucosal immunity, ease of distribution – room temp. stable



03 Validated Clinical Platform with Benign Safety and Tolerability profile

Clinical data from 12 trials against 6 viruses



04 Pipeline focused on several very large opportunities besides COVID-19

Norovirus, HPV, influenza & RSV



05 Resources to aggressively continue clinical advancement and commercialization

Cash: \$140M (as July 2020)

Groundbreaking technology: An Oral COVID-19 Vaccine



Vaccine as a pill

Convenient mode of administration, rapid and painless: no needles, self administration (no appointments, no lines, social distancing)

Potentially more protective than injectable vaccines: activates mucosal immunity – the first line of defense, plus multiple immune system mechanisms

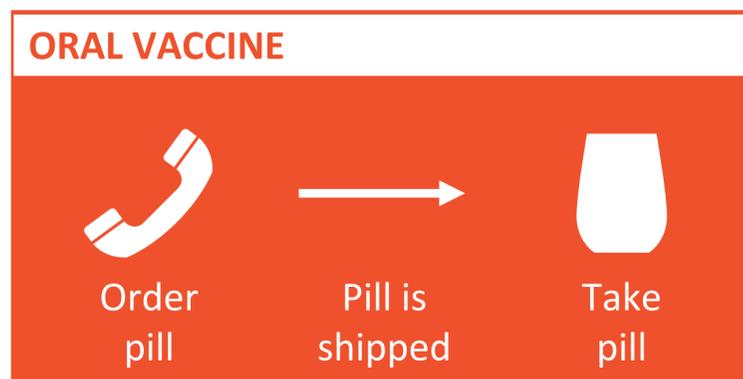
Ease of distribution and storage, globally: room temperature stable tablet – no cold chain, no needles, no waste

Vaxart's COVID-19 vaccine is ...

The only oral COVID-19 vaccine among leading programs

The only mucosal vaccine in the U.S.'s Operation Warp Speed NHP challenge study

An oral vaccine would have huge advantages in mass COVID-19 vaccination campaigns



vs.



The pill =
more people
vaccinated faster



Higher adoption – more people vaccinated

- ❖ Convenient, painless, self-administered
- ❖ Facilitates social distancing during a pandemic
- ❖ Appealing to those who dislike injections & needles

Fastest way to conduct mass vaccination campaigns

- ❖ 1-2 months to vaccinate large populations with injectables
- ❖ 2-3 days with a pill

Not taxing on healthcare system & local resources

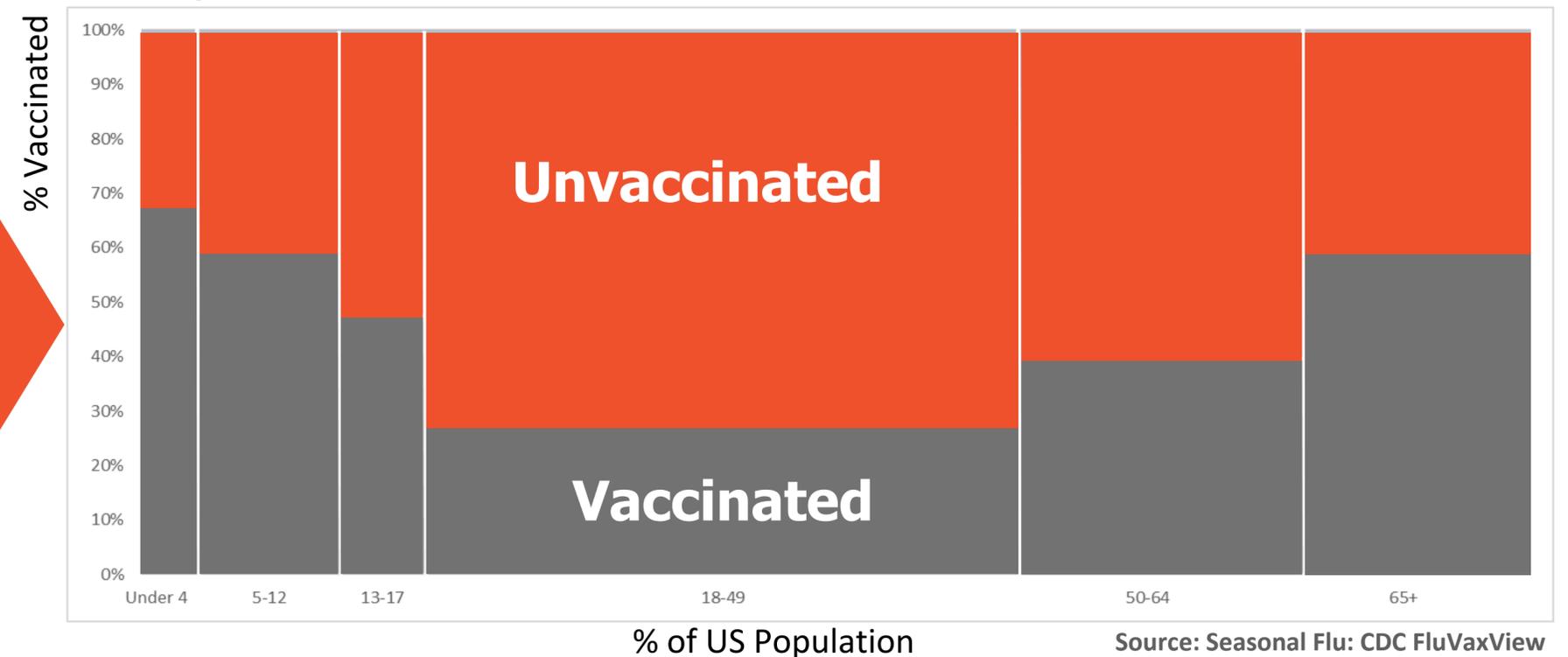
- ❖ No medical personnel needed
- ❖ No vaccination centers needed

Needles and having to go to the doctor's office are the main reasons why not enough people get vaccinated



only 42%
vaccinated*
despite U.S. CDC
recommendation
for 100%

2017/18 US FLU VACCINATION BY AGE



Similarly low uptake expected with COVID-19 vaccines:

- *“As few as 50%* of people in the United States are committed to receiving a vaccine, with another quarter wavering” – Science Magazine, Jun. 2020
- *“Less than half* of American adults say they would get a government-approved coronavirus vaccine” – NBC, Aug 2020
- *“Two-thirds of Americans say they won't* get COVID-19 vaccine when it's first available” – USA Today / Suffolk, Sep. 2020

*Over 6 months old

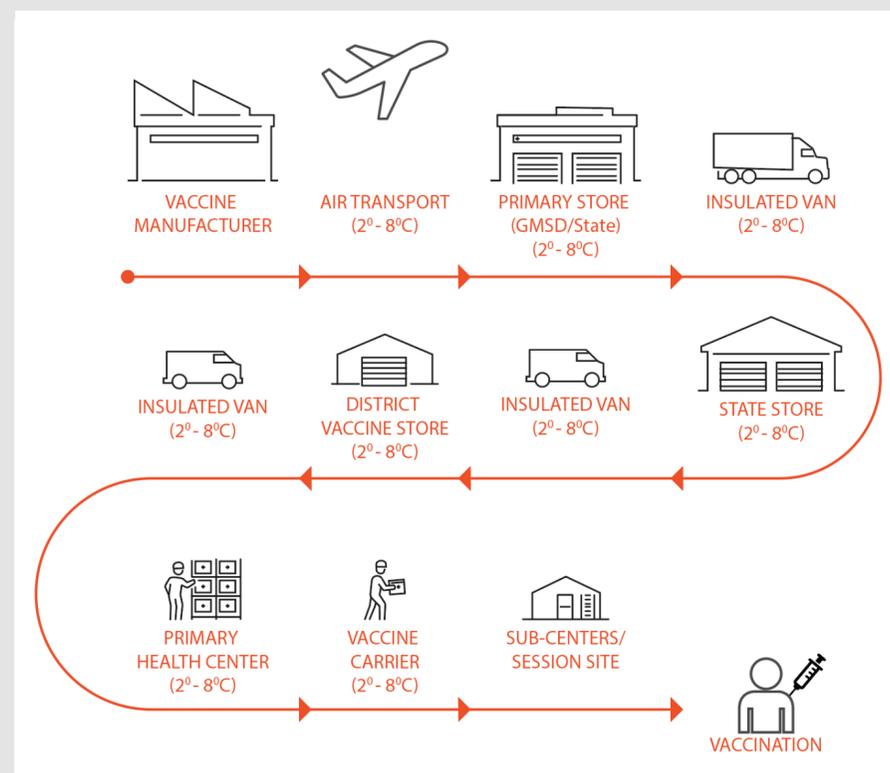
Significantly simpler and cheaper for national and local governments to distribute and stockpile a pill vs. an injectable



Vaxart's oral vaccine is room temperature stable

- ❖ **No refrigeration for storage** – major cost & space savings
- ❖ **No refrigeration for distribution** – significantly simpler & cheaper, eliminates potential bottlenecks
- ❖ **Can be sipped cheaply** to any corner of the US or the Globe

Cold Chain: very complex & expensive



The New York Times, September 18th 2020

Strict temperature requirements “will make it very difficult for community clinics and local pharmacies to store and administer.” - Kathleen Dooling, C.D.C

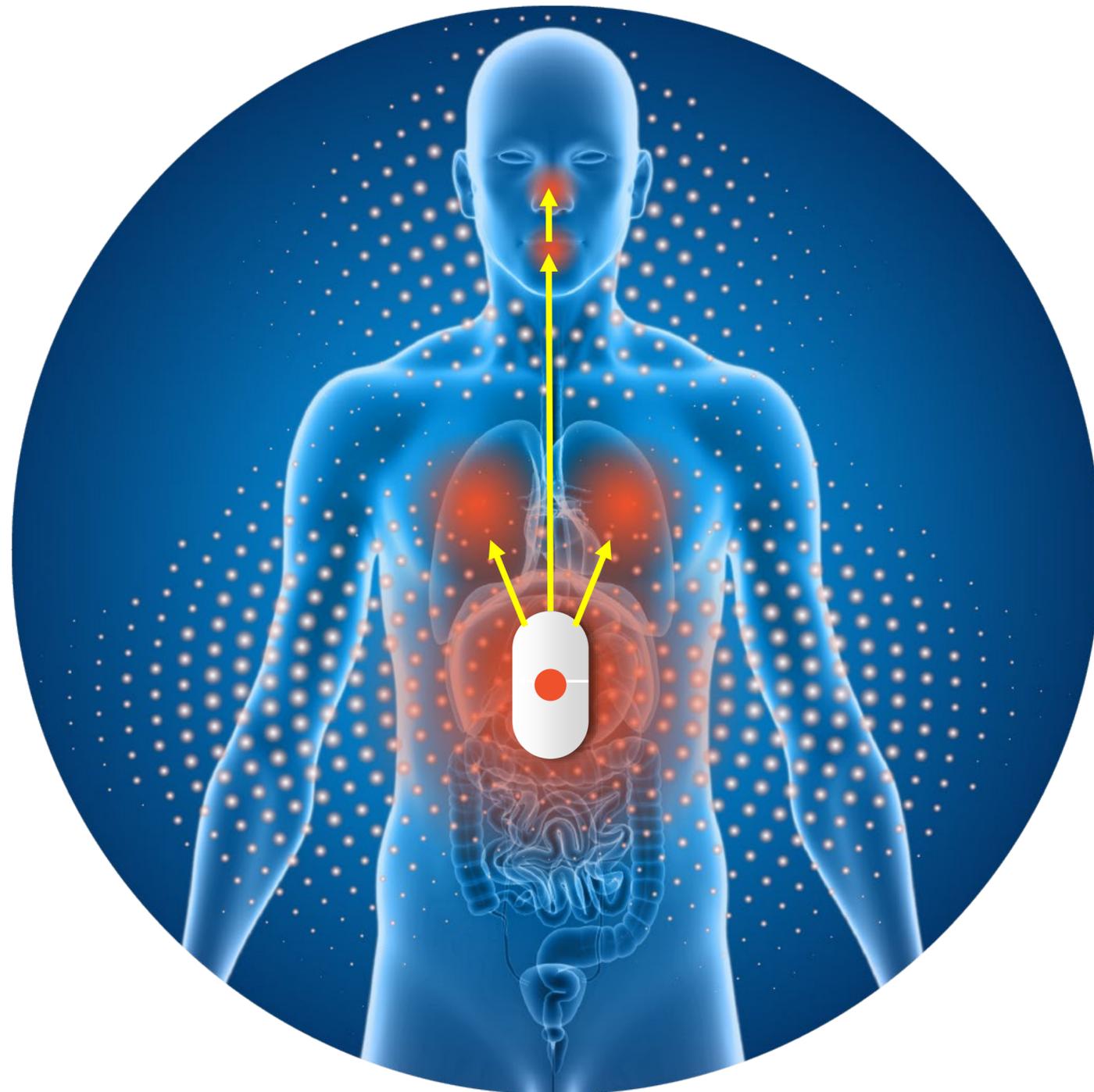
The New York Times, September 18th 2020

Large parts of Africa, South America and Asia, where super-cold freezers are sparse, would be left out – DHL, McKinsey study

Politico, August 3rd 2020

U.S. lacks plan for getting vaccine to communities of color devastated by virus

Vaxart's oral vaccine activates the mucosal immune system: the 1st line of defense against airborne viruses



Protection against Airborne Viruses:
Oral vaccine activates immunity in the right places

Vaxart's oral vaccine triggers a broad immune response, activating systemic and mucosal immunity:

- ✦ *Mouth*
- ✦ *Nose*
- ✦ *Lungs*
- ✦ *Intestine*

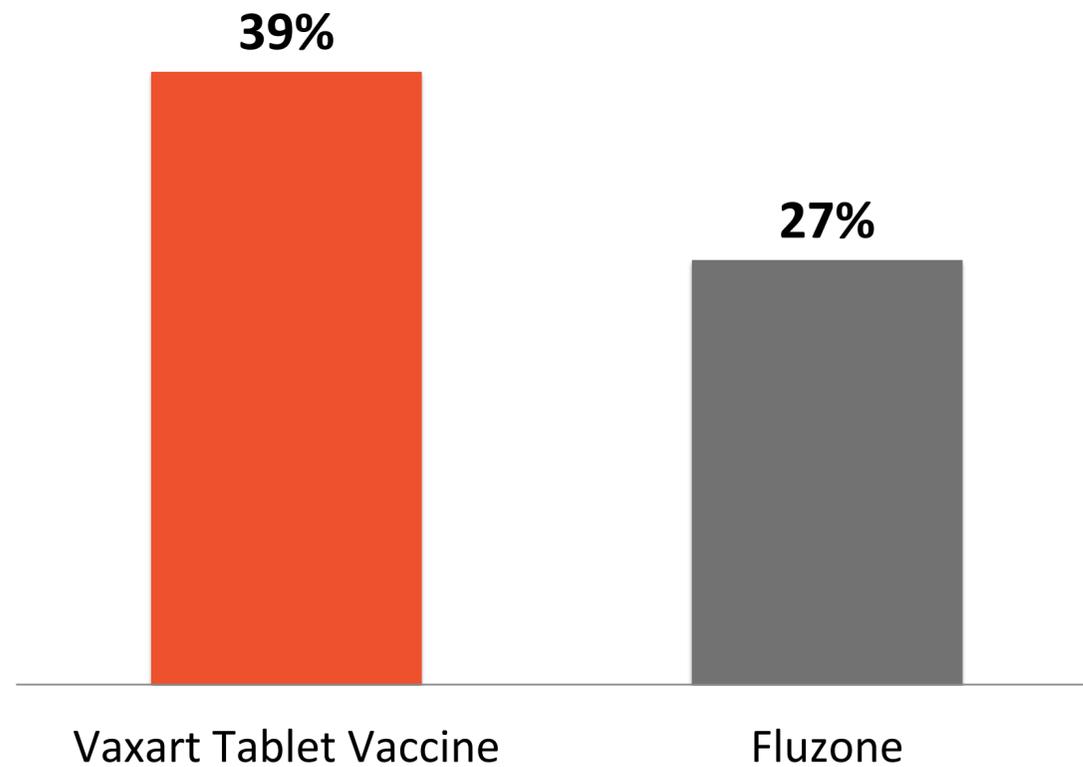
Injectable vaccines only activate systemic immunity

Proven efficacy against an airborne virus: Vaxart pill likely to protect better against flu than leading injectable in BARDA-funded clinical trial

Phase II trial comparing Vaxart's oral tablet vaccine and Sanofi's Fluzone injectable flu vaccine

Protection Against Illness

% of subjects without symptoms



Liebowitz, et al, *Lancet ID*, 2020



Clinical study funded by the U.S. Biomedical Advanced Research and Development Authority (BARDA)

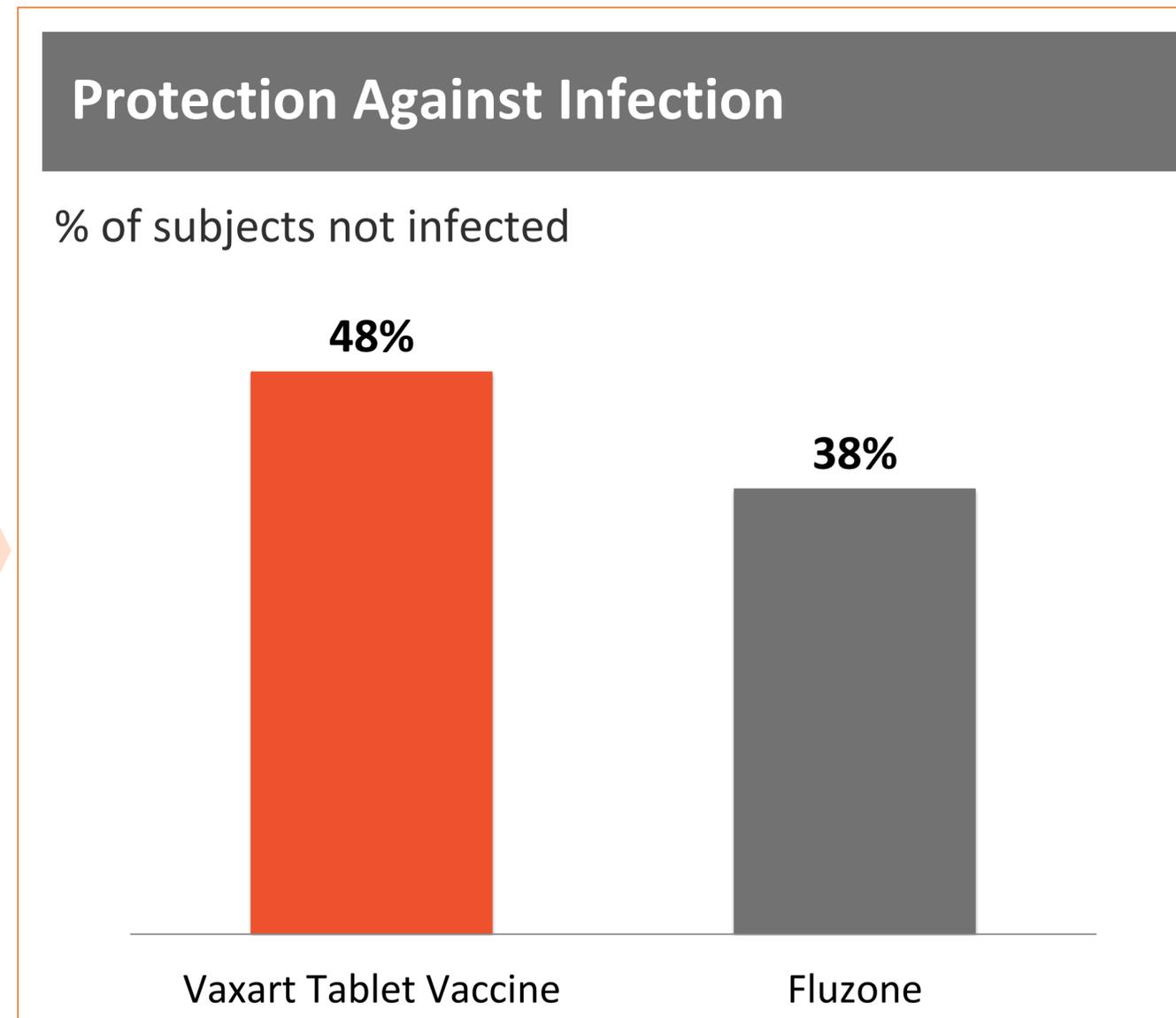
THE LANCET
Infectious Diseases

Results published
in January 2020

Oral vaccines have the potential for sterilizing immunity against airborne pathogens such as COVID-19 and flu – preventing infection altogether

Phase II trial comparing Vaxart's oral tablet vaccine and Sanofi's Fluzone injectable flu vaccine

By triggering a strong enough **mucosal immunity**, Vaxart's oral vaccine has the **potential to prevent infection altogether**



More people who got the Vaxart oral vaccine were protected against flu compared to those who got Fluzone



THE LANCET
Infectious Diseases

Liebowitz, et al, *Lancet ID*, 2020

Safe, with Tolerability Comparable to Placebo

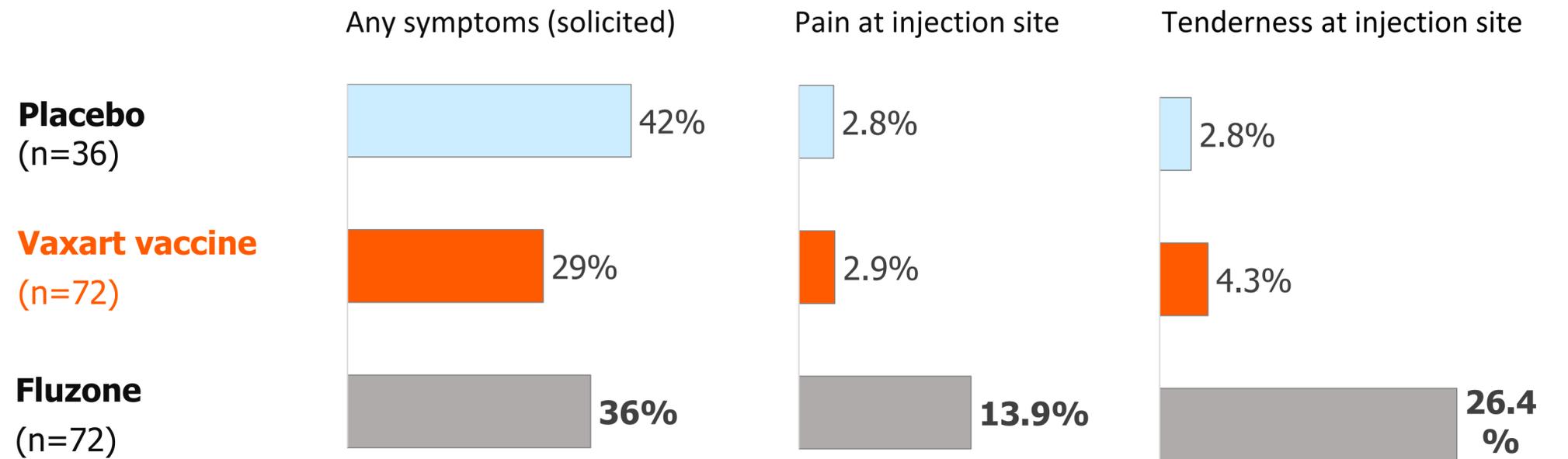
Long-term safety & tolerability:

462 subjects vaccinated

12 clinical trials

6 different viruses

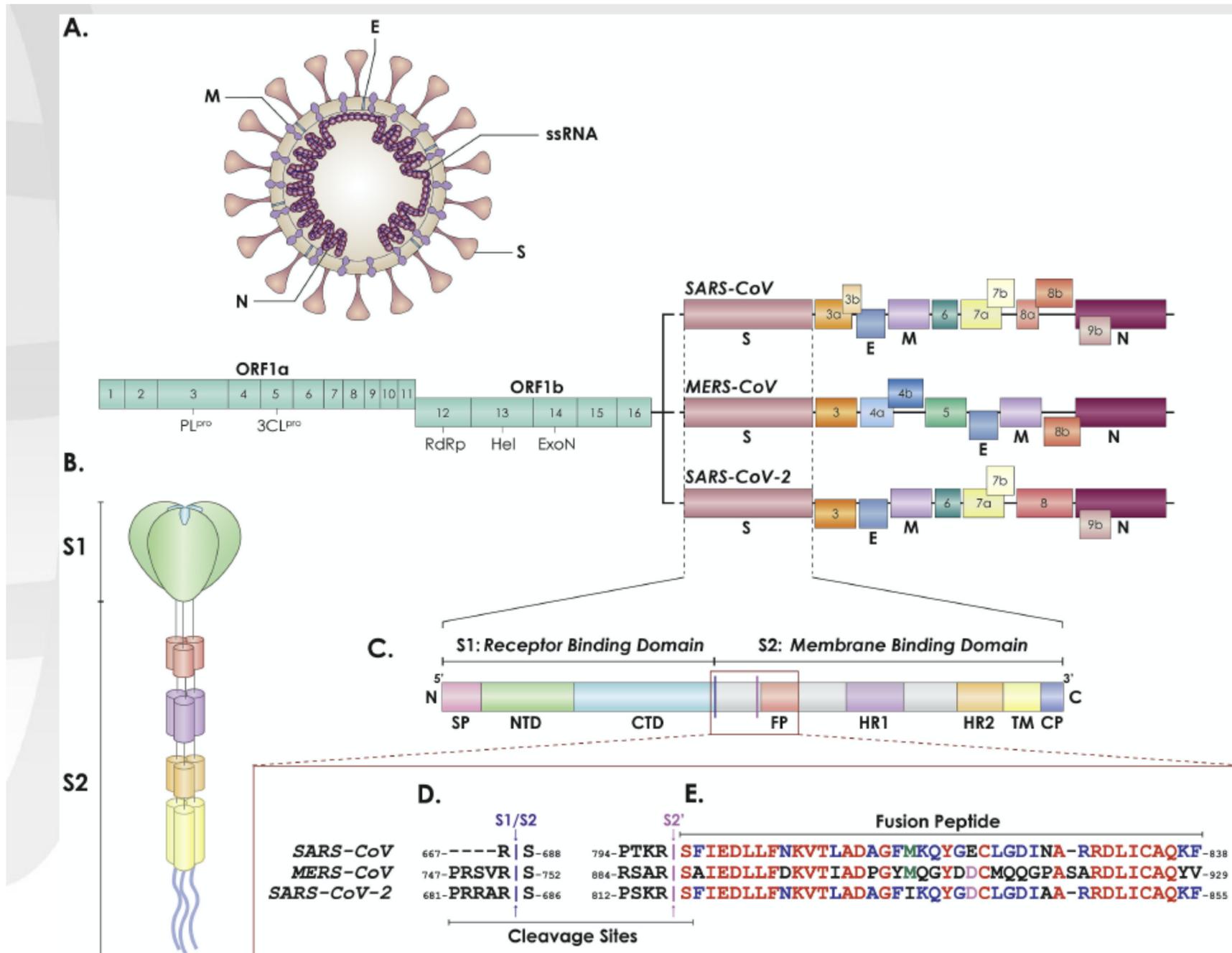
BARDA-funded flu study



Pain: a key reason for which people don't like needles

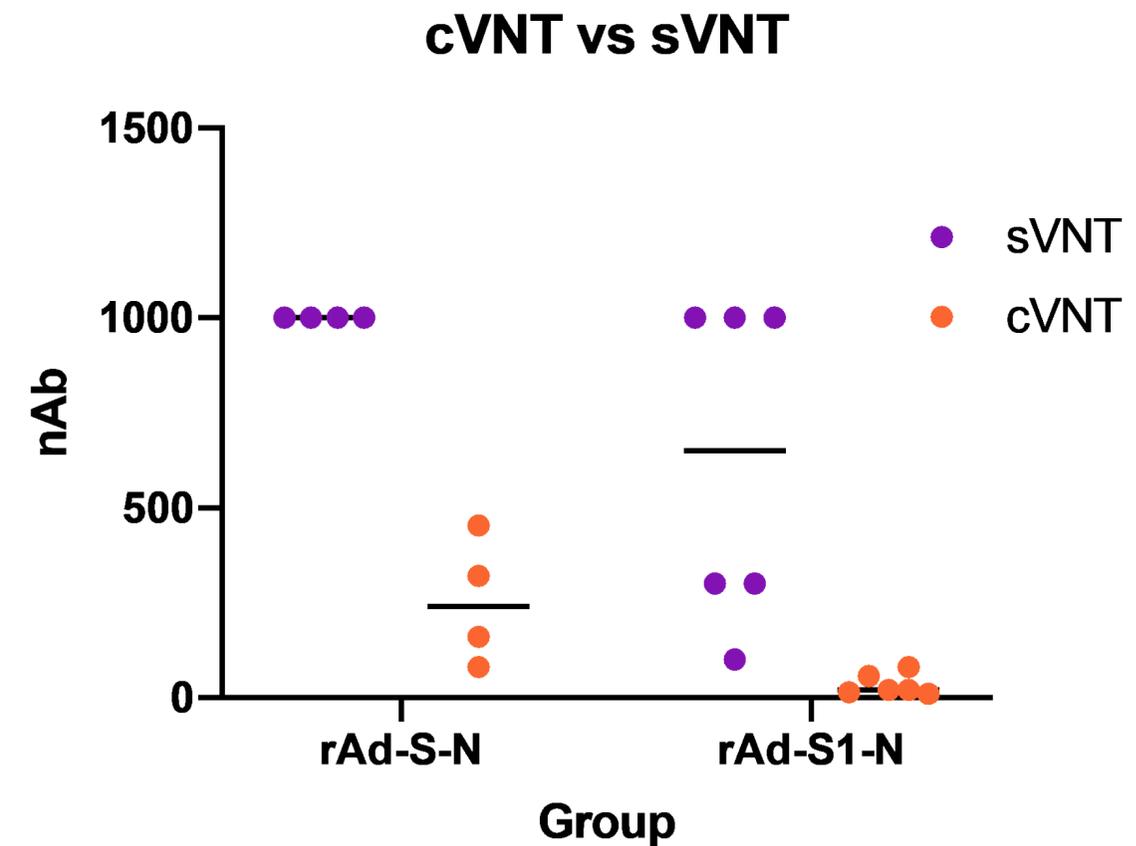
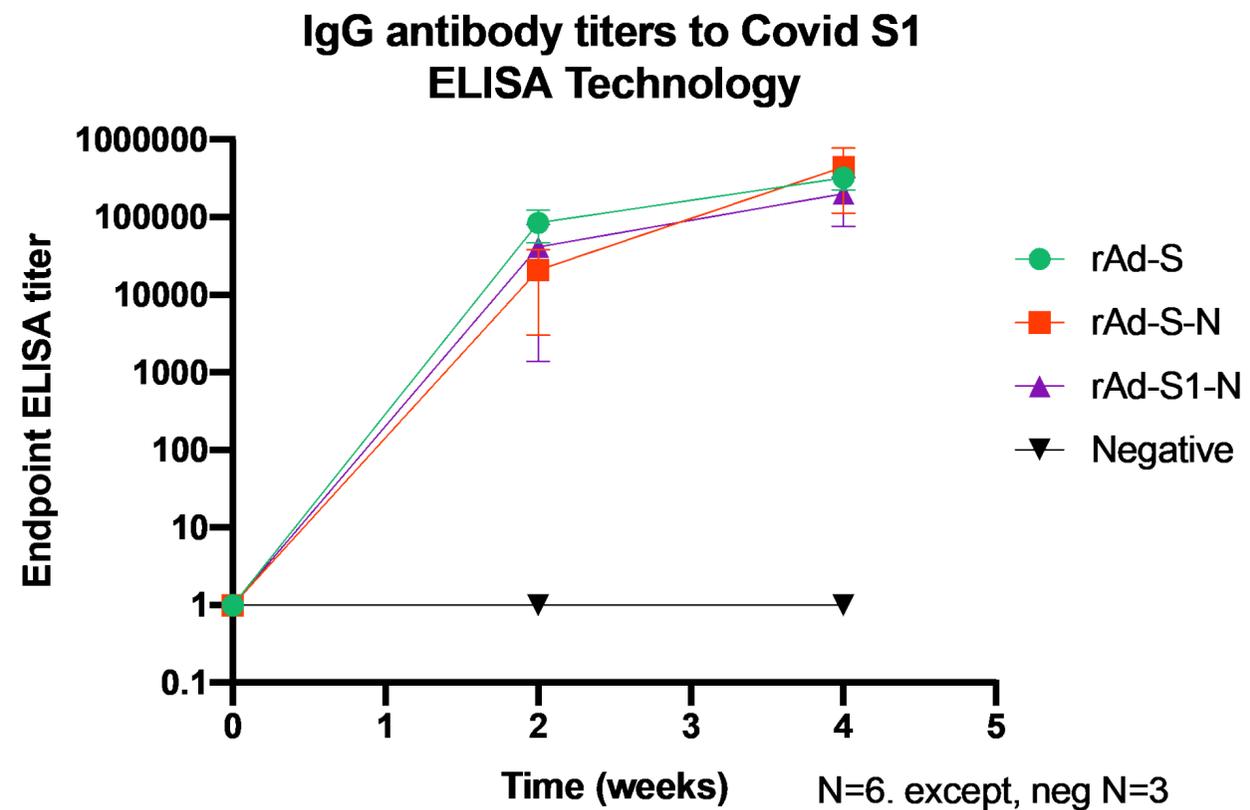
Source: Liebowitz et al., *Lancet Infectious Diseases*, Jan 2020

Vaxart vaccine contains both the S and N genes from SARS-CoV-2



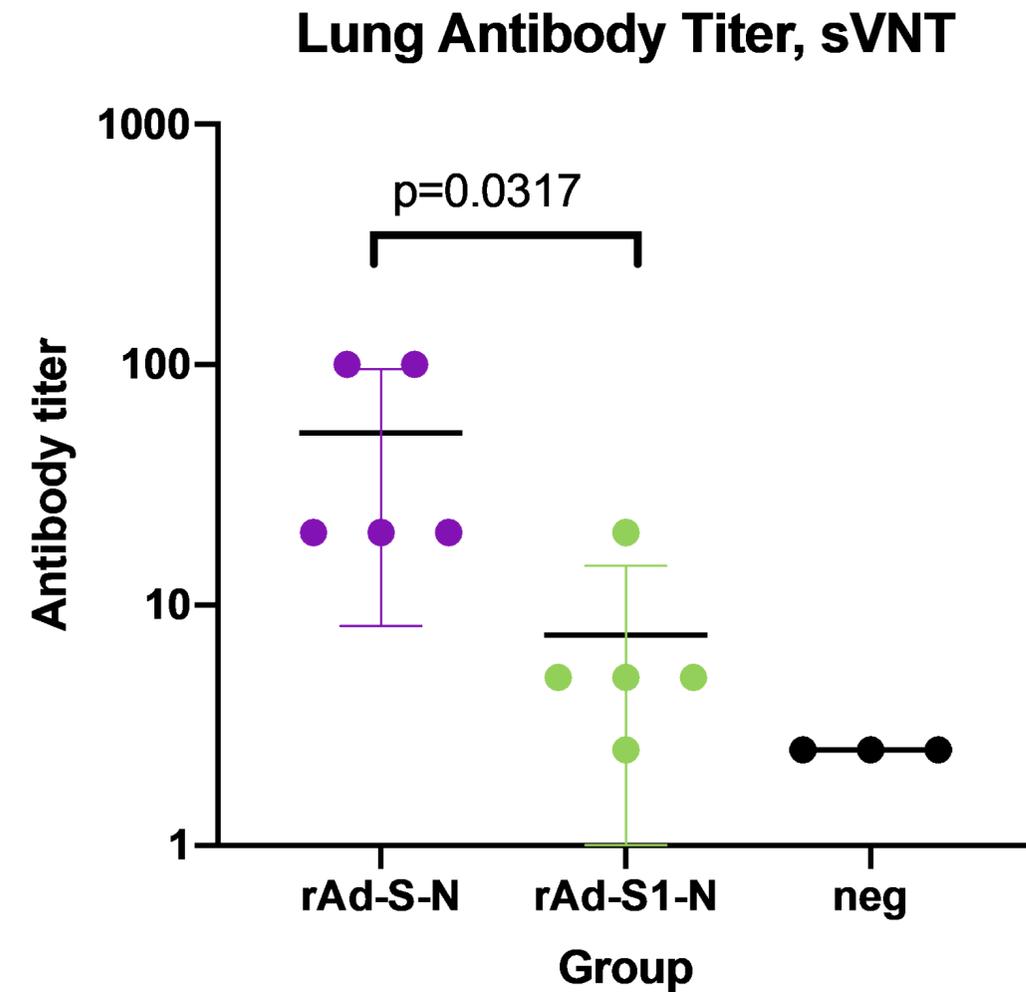
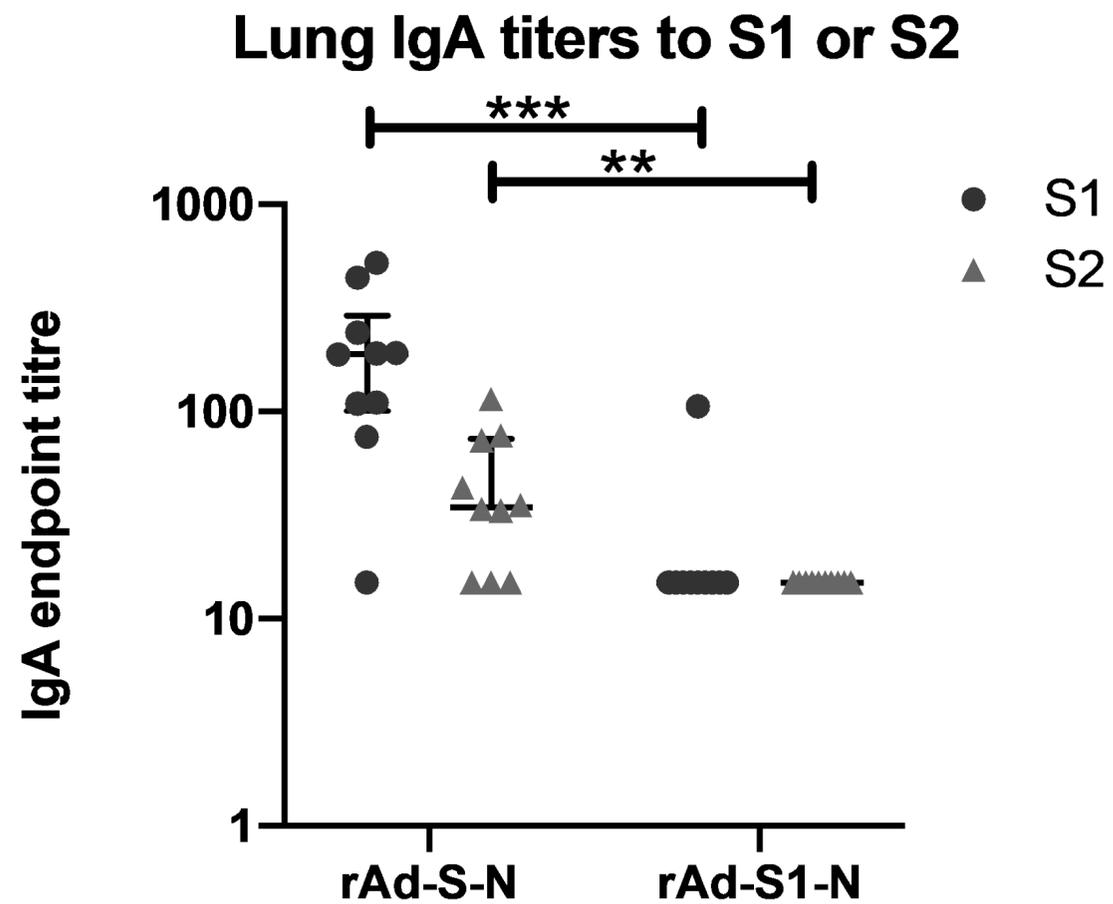
- S Protein is a surface protein, good target of neutralizing antibodies
- N Protein is well conserved, and a good target for T cell responses
- Construct is called rAd-S-N

Full-length S better for creating neutralizing antibody responses



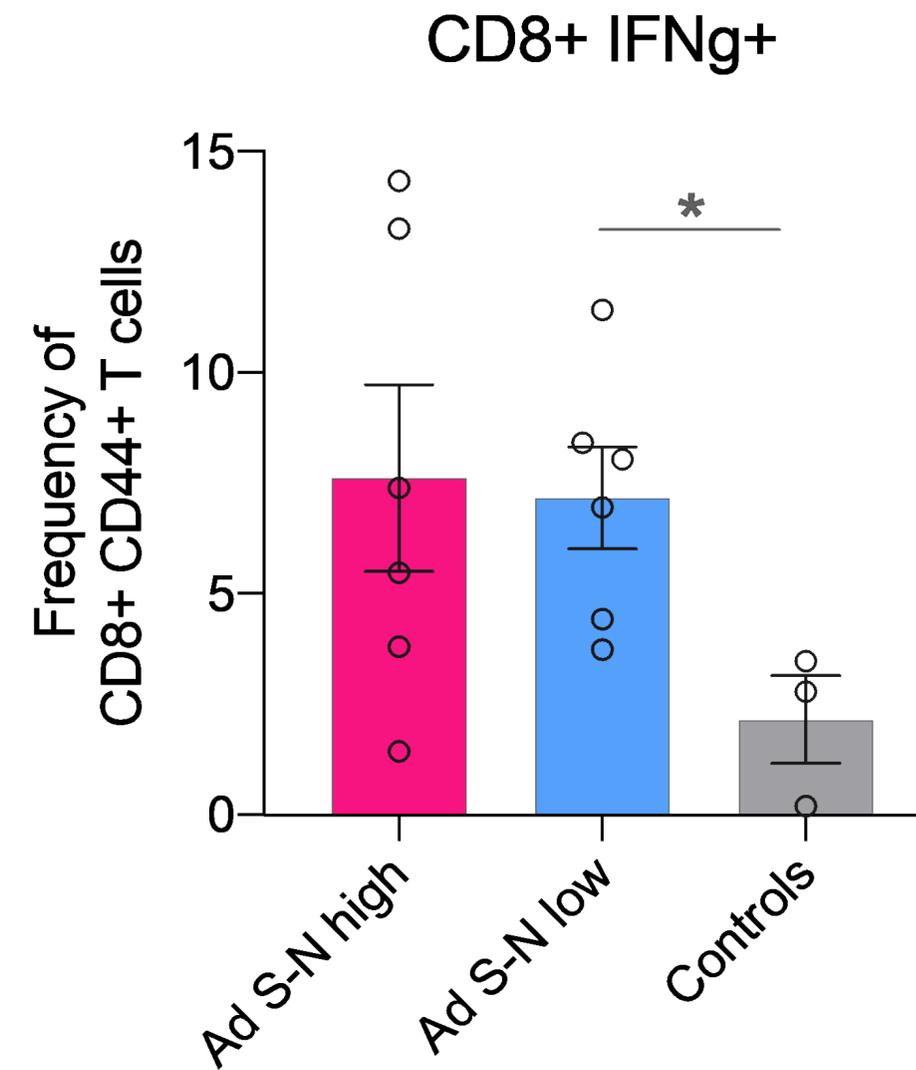
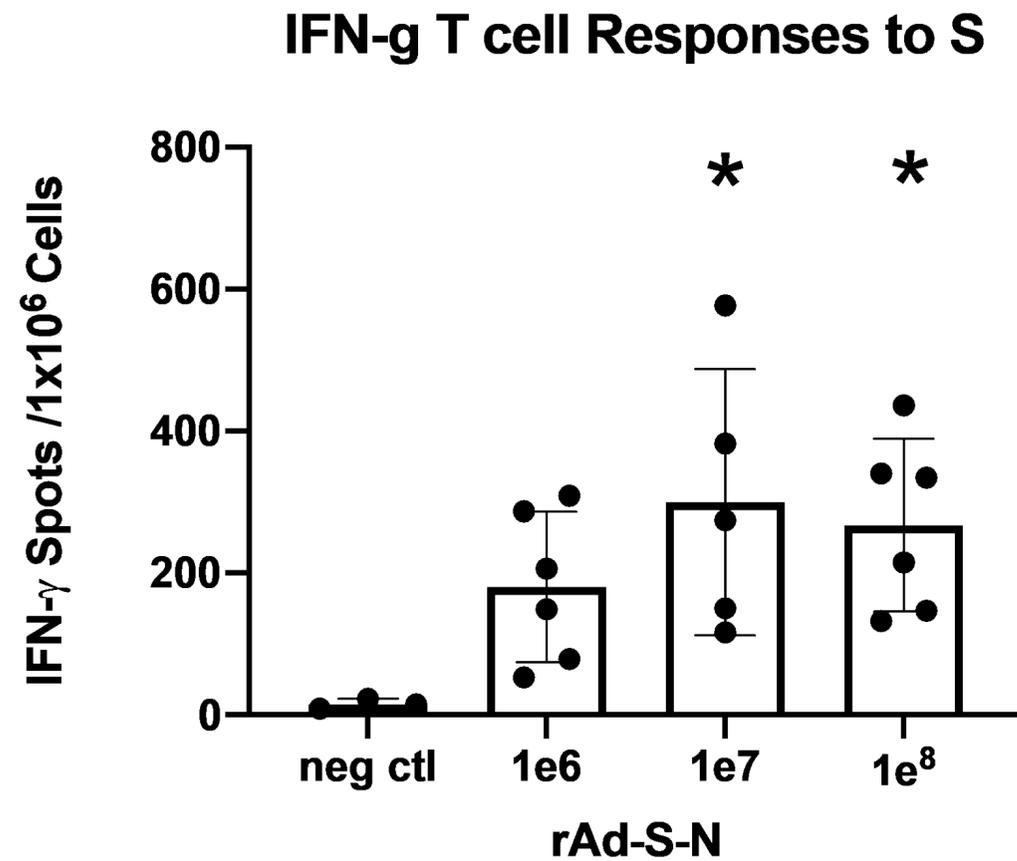
Moore, et al, *BioRxiv*, 2020

Vaxart COVID vaccine induces lung antibody responses, IgA and neutralizing antibodies



Moore, et al, *BioRxiv*, 2020

Potent T cell Responses to the S protein, at low doses of vaccine



Moore, et al, *BioRxiv*, 2020

Conclusions

- Well tolerated vaccine platform
- Potent immune responses even at low vaccine doses
- Mucosal Immunity might be *really important*
 - Both mucosal IgA and mucosal T cells have been shown to contribute to sterilizing immunity in other respiratory diseases
 - Can't be adequately addressed by an injected vaccine
 - High degree of neutralizing antibody responses in lung
- IgA is not only a more potent neutralizing isotype for viruses, but can block transmission

Vaxart's oral COVID-19 vaccine has several advantages vs. leading injectable vaccine candidates

	Technology	Limitations	Likely Immune	Needles	Cold chain
Vector-based					
CanSinoBio	rAd5 injected	Antivector Immunity	nAb, T cells	Yes	Yes
AZ/ Oxford	Chimp rAd				
Janssen	rAd26 injected				
DNA/RNA					
Moderna	Stabilized RNA	New technology	nAb	Yes	Yes
Pfizer/BioNTech	RNA				
Protein					
Novavax	Insect cell culture	Only makes Ab	Ab	Yes	Yes
Sanofi/PS					
Oral Vaccine					
Vaxart	rAd5 oral tablet	Lower profile co.	IgA, Mucosal T	No	No

Vaxart and its manufacturing partners have been gearing up for mass production



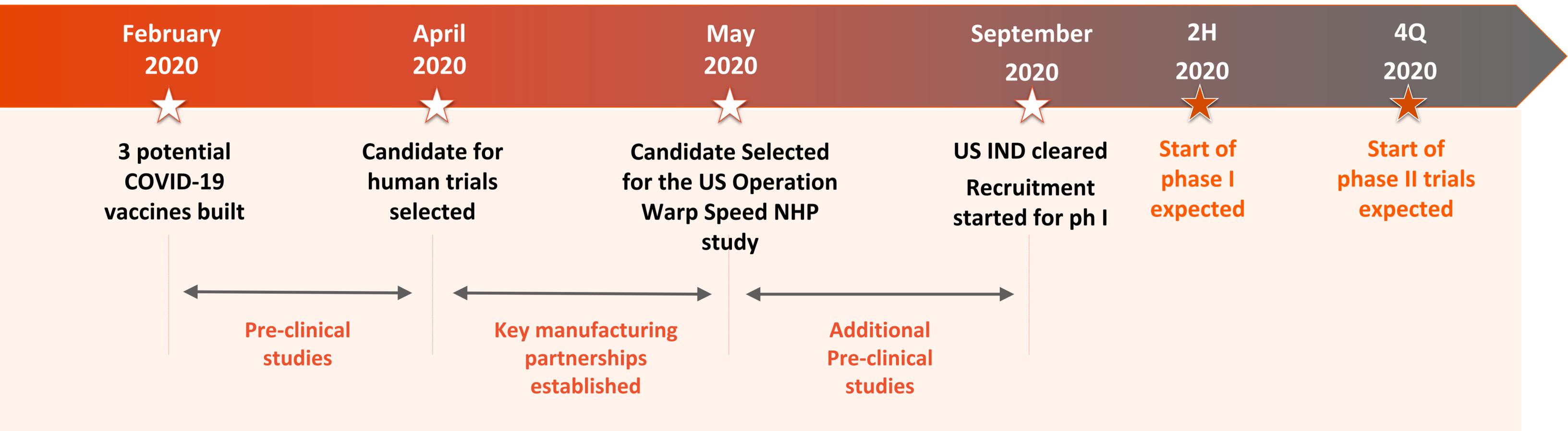
Experienced Manufacturing Partners



Simpler manufacturing process than for injectables:

- No sterile fill and finish
- No need for vials

Vaxart COVID-19 vaccine timeline



Vaxart is the leading oral vaccine biotechnology company

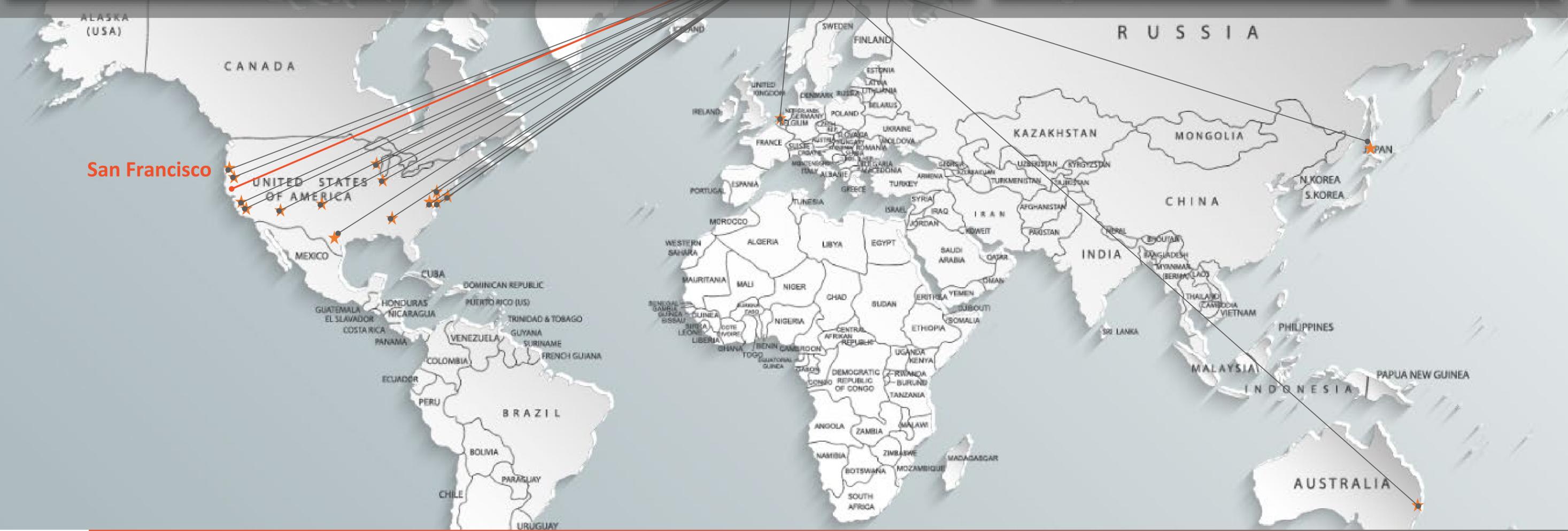


Manufacturing

Research & Development

Clinical Trials

Commercial



Management Team with Deep Experience in Vaccines



ANDREI FLOROIU, MBA
Chief Executive Officer



SEAN TUCKER, PHD
Founder and Chief Scientific Officer



RICHARD SCHWARTZ, PHD
SVP, Technical Operations



SHAILY JAINI GARG
SVP, Clinical Development
and Project Management



BRANT BIEHN
SVP, Commercial Operations



MARGARET ECHERD, CPA MBA
Vice President, Corporate Controller



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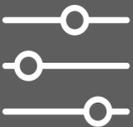
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