

# COVID-19 Vaccines: Where We Stand

## Project ECHO

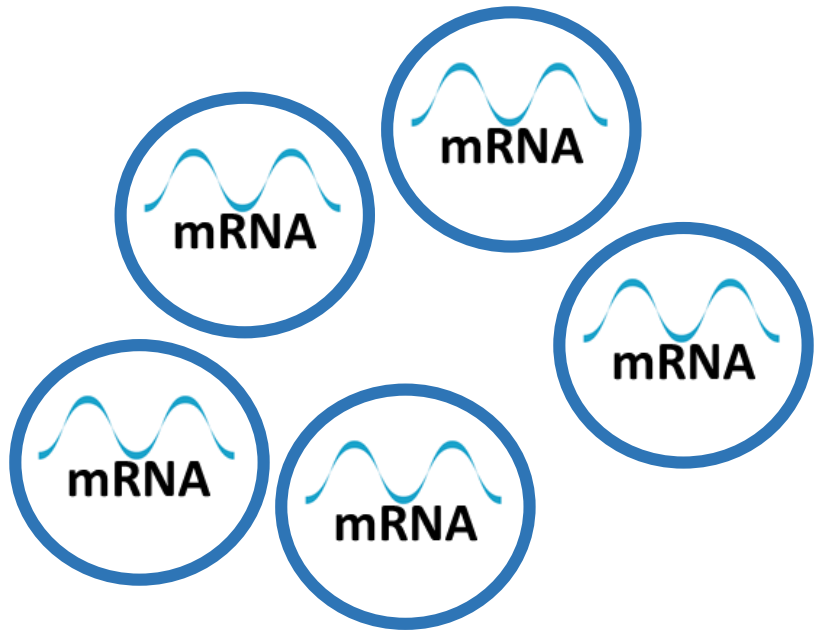
Anuj Mehta, MD

Pulmonary and Critical Care Medicine

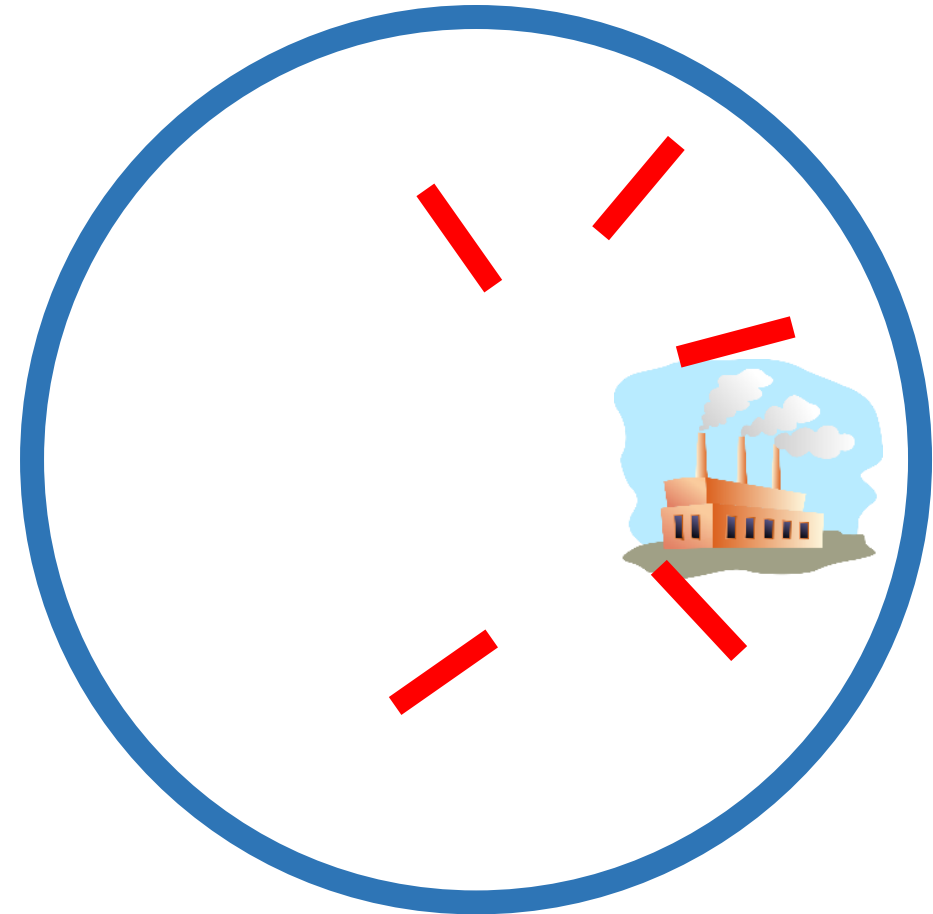
January 19, 2021

# How do mRNA Vaccines Work?

mRNA in a bubble

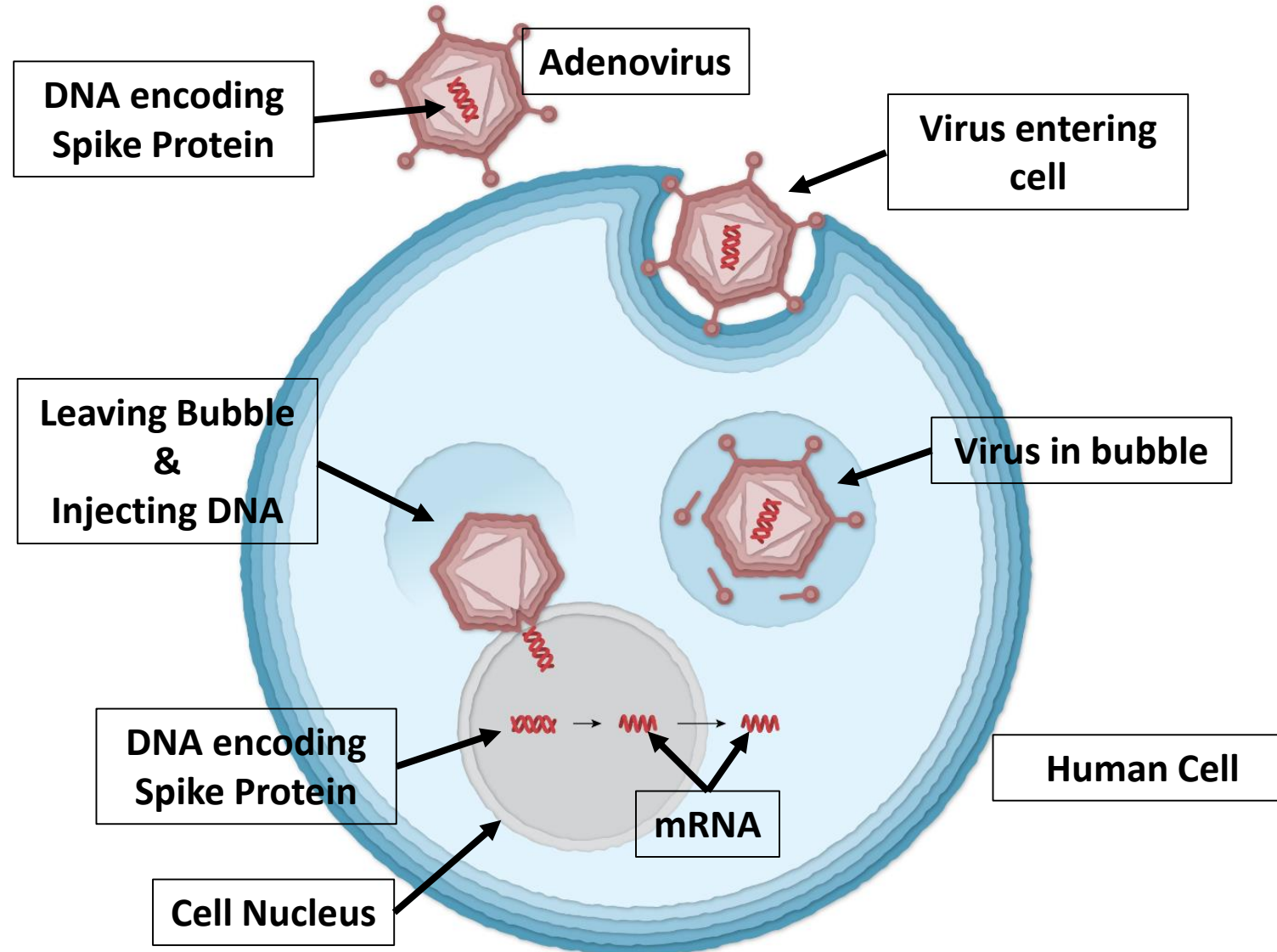


Spike Protein

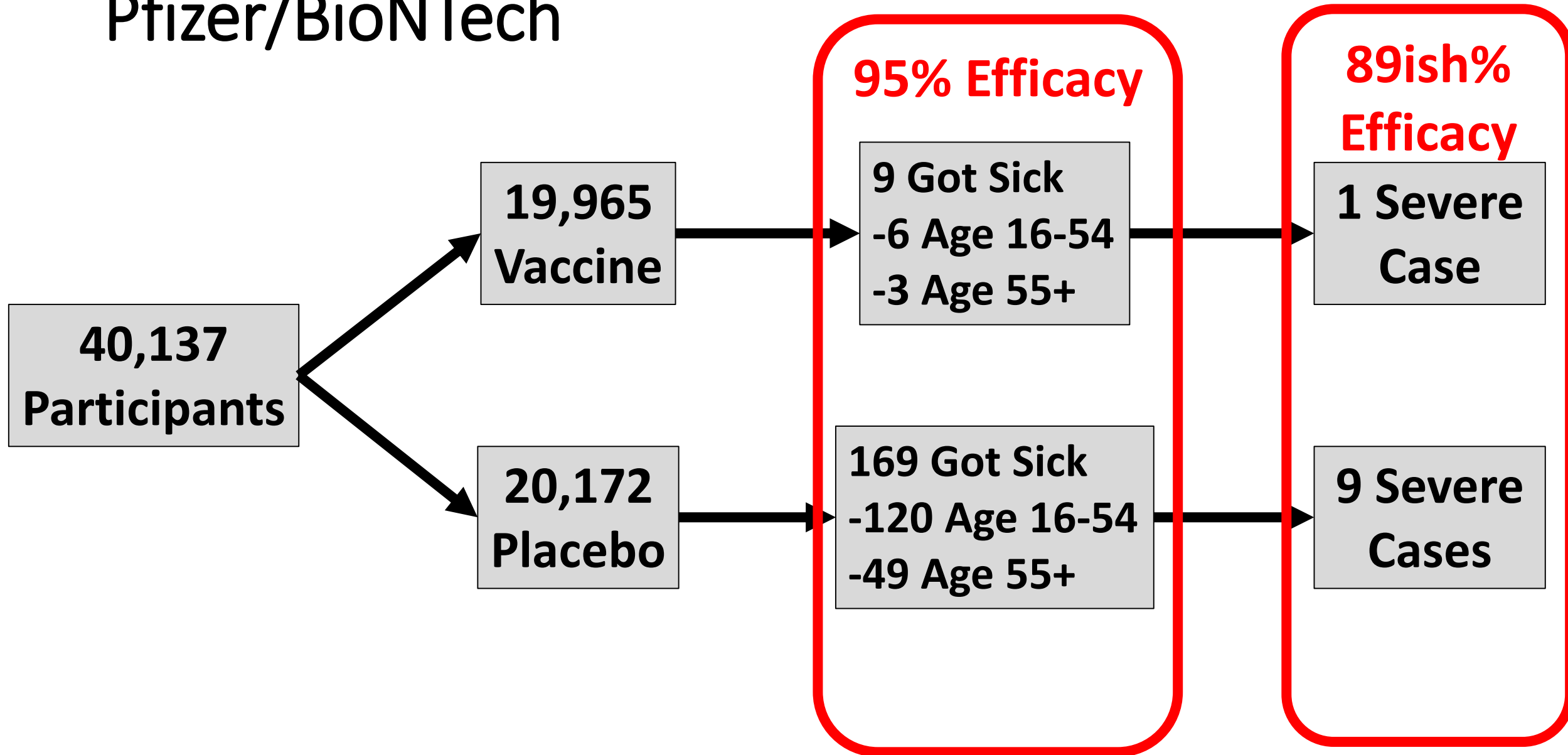


Human Cell

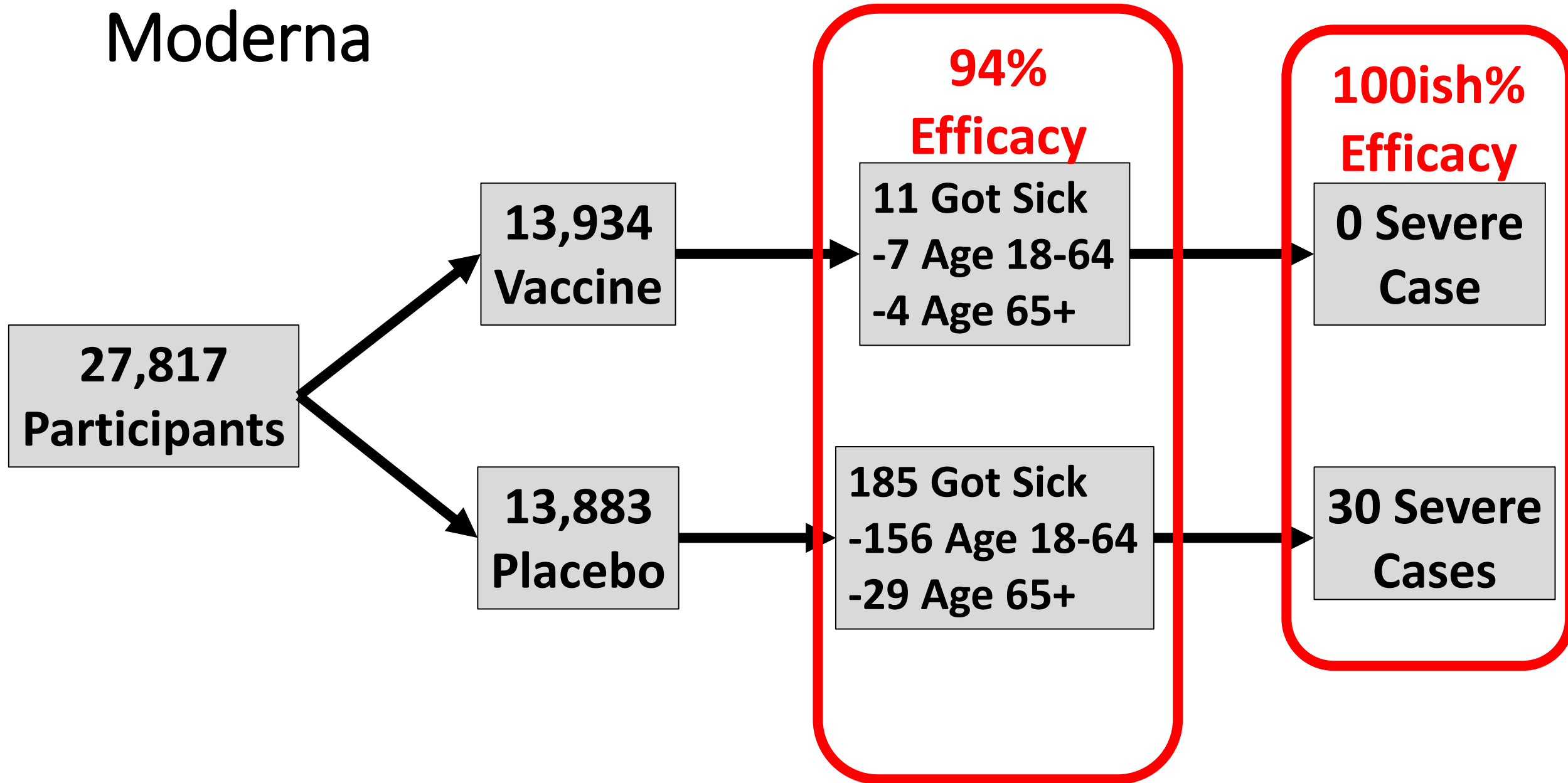
# Inactivated Viral Vectors: AZ and J&J



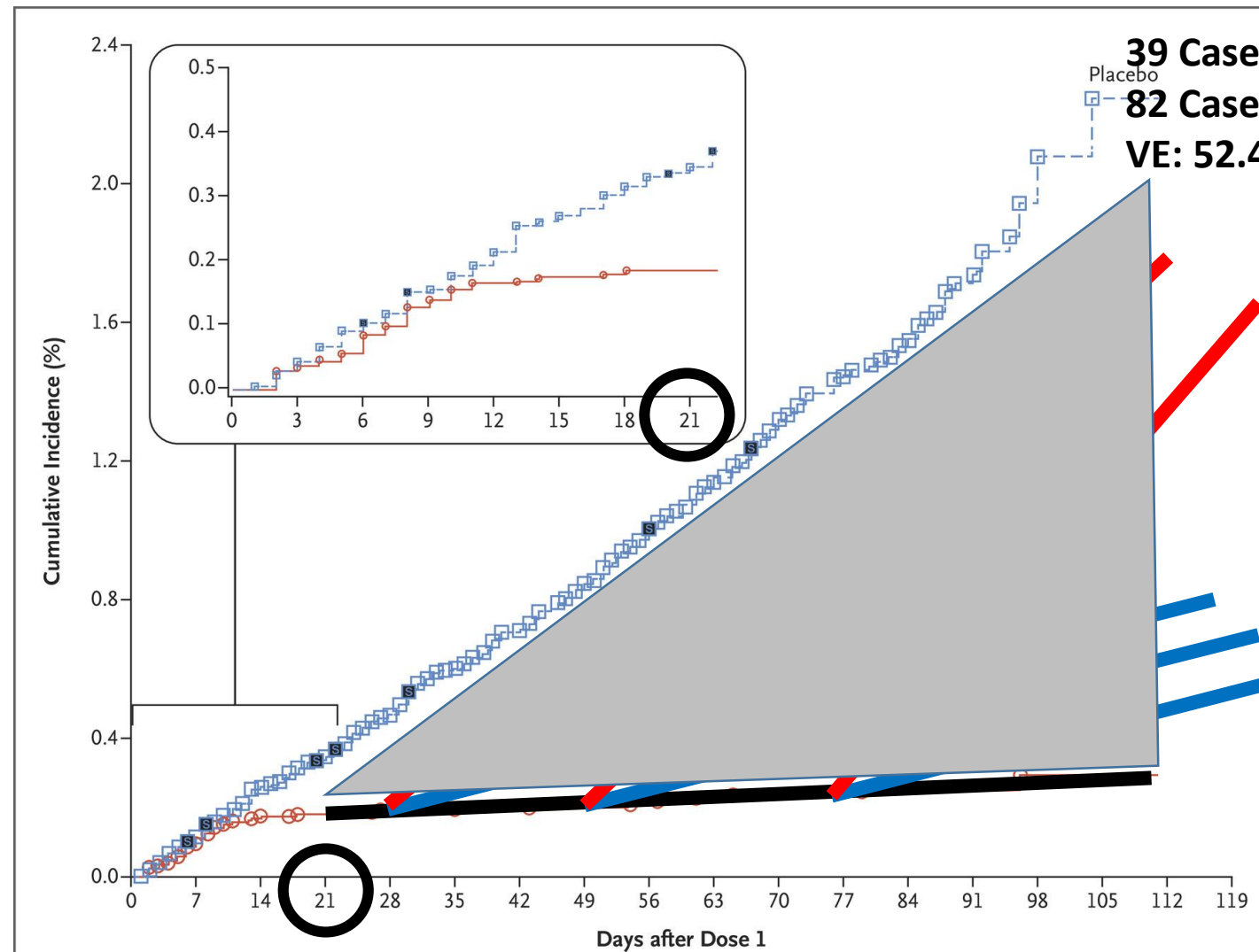
# Pfizer/BioNTech



# Moderna



# Is One Dose Enough?



Efficacy End-Point Subgroup	BNT162b2, 30 $\mu$ g (N=21,669)		Placebo (N=21,686)		VE (95% CI) percent
	No. of participants	Surveillance time person-yr (no. at risk)	No. of participants	Surveillance time person-yr (no. at risk)	
Covid-19 occurrence					
After dose 1	50	4.015 (21,314)	275	3.982 (21,258)	82.0 (75.6–86.9)
After dose 1 to before dose 2	39		82		52.4 (29.5–68.4)
Dose 2 to 7 days after dose 2	2		21		90.5 (61.0–98.9)
$\geq 7$ Days after dose 2	9		172		94.8 (89.8–97.6)

# Special Populations

- Pregnancy/Breast-feeding
- Immunocompromised
- Previous COVID-19 monoclonal antibody treatment/plasma
- Previous COVID-19 infection
- Immunocompromised
- Allergy history
- Other vaccines

# Side Effects

## **Common/Expected**

- Fatigue
- Fever
- Headache
- Myalgias
- Arthralgias
- Lymphadenopathy
- Diarrhea
- Allergic Reaction

## **Reports (?Background Rate)**

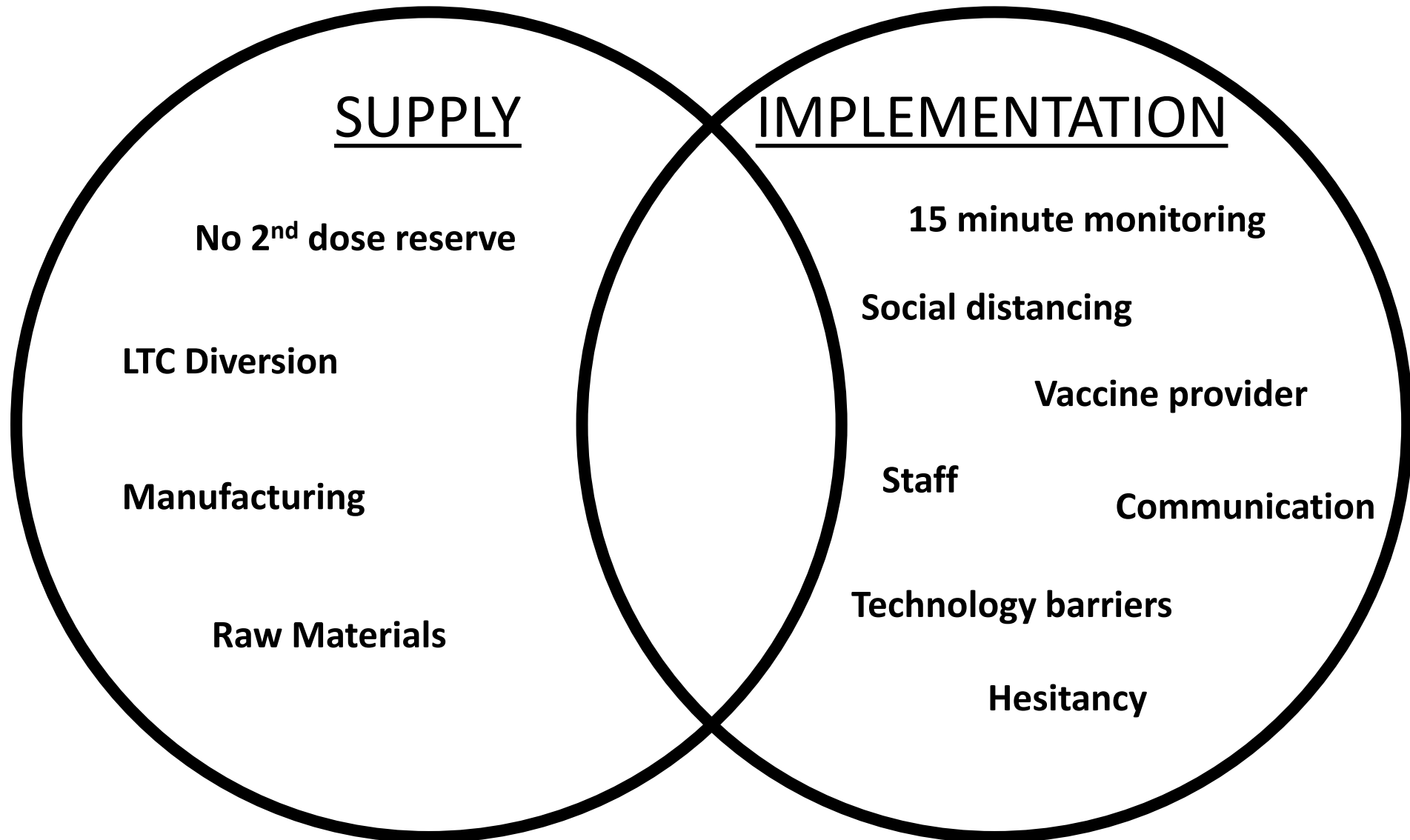
- Parasthesia
- Bell's Palsy
- Possible case ITP
- **EXPECT MORE REPORTS AS WE VACCINATE SICKER POPULATIONS**



# How is Colorado Doing?

- Top 10 states in terms of doses received vs used
- 50% to hospitals, 20% FHQC, 10% LPHA
- Hospitals taking lead in 70+
- LPHAs taking lead in Phase 1B HCW, first responders

# Gaps and Bottlenecks



# Key Take Home Messages

- Cannot get COVID from the vaccines
- Supply in CO is very limited so reaching all 70+ will take time
- Learning more about side effects, no major surprises so far
- Multiple logistical and implementation barriers yet to be solved
- Equitable allocation – reaching all people AND all neighborhoods
- Despite multiple discussions best recommendations remain 2 dose regimen (Pfizer – 21 days apart. Moderna – 28 days apart)