

# COVID-19 vaccines

## **Dr. Manish Sadarangani**

Director, Vaccine Evaluation Center, BC Children's Hospital Research Institute  
Associate Professor, Division of Infectious Diseases, Department of Pediatrics, UBC  
Physician Lead, Family Immunization Clinic, BC Children's Hospital

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THE UNIVERSITY  
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Vaccine  
Evaluation  
Center

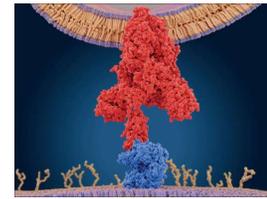
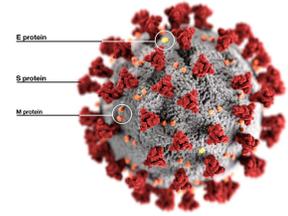
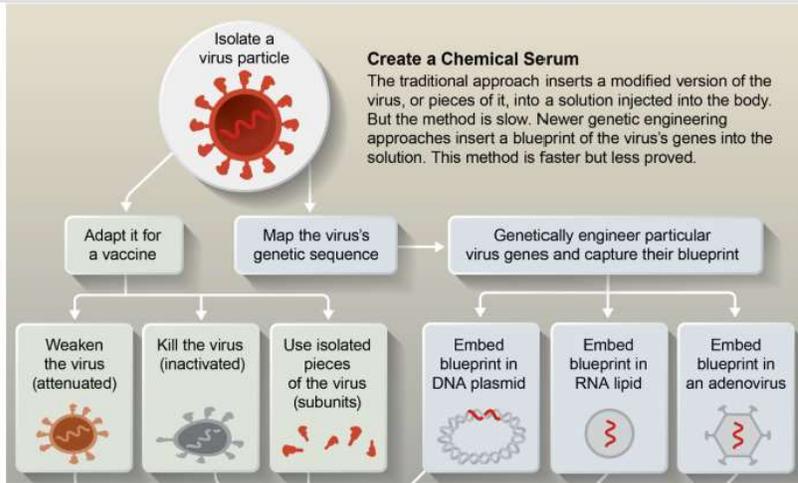


## Disclosures

- **Salary awards**
  - BC Children's Hospital Foundation
  - Michael Smith Foundation for Health Research
  - Canadian Child Health Clinician Scientist Program
- **Research/Project Funding**
  - Merck, VBI Vaccines, GlaxoSmithKline, Pfizer, Sanofi-Pasteur, Seqirus, Symvivo
- All funds have been paid to my institute
- Not received any personal payments



# COVID-19 vaccine platforms



<https://www.scientificamerican.com/article/genetic-engineering-could-make-a-covid-19-vaccine-in-months-rather-than-years/>

CDC; Fang et al. Lancet 2020



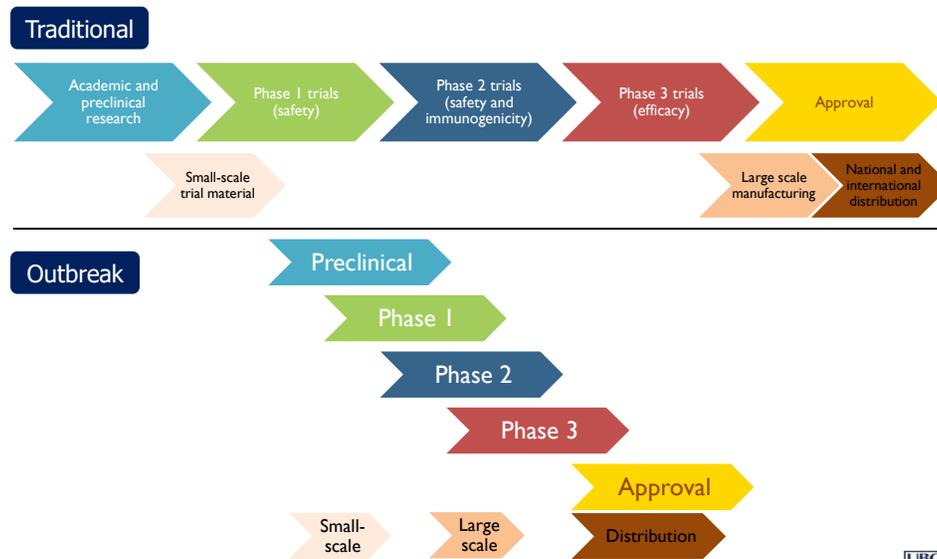
# Vaccine development in a pandemic



Adapted from Lurie et al. NEJM 2020



## Vaccine development in a pandemic



Adapted from Lurie et al. NEJM 2020



## In Canada

- Agreements announced with

Company	Vaccine type	Clinical phase	# doses (Canada)	Reported efficacy (vs. symptomatic disease)
Pfizer/BioNTech	RNA	Phase 3	≥20m doses	95% (2 doses)
Moderna	RNA	Phase 3	≤56m doses	95% (2 doses) 92% (1 dose)
Oxford University/Astra Zeneca	Viral vector	Phase 3	≤20m doses	70% (2 doses)
Johnson & Johnson	Viral vector	Phase 3	≤38m doses	66% (1 dose) – press release moderate to severe disease
Novavax	Subunit	Phase 3	≤76m doses	89% (2 doses) – press release
Medicago	Subunit	Phase 3	≤76m doses	Trials ongoing
Sanofi/GlaxoSmithKline	Subunit	Phase 2	≤72m doses	Development paused



## Who is getting vaccinated in BC?



- **Phase 1 (Dec 2020 – Feb 2021)**
  - Residents and staff of long-term care facilities and assisted living residences
  - Individuals assessed for and awaiting long-term care
  - Essential visitors to long-term care facilities and assisted living residences
  - Hospital health care workers providing urgent care for COVID-19 patients
  - Remote and isolated Indigenous communities
- **Phase 2 (Feb – Mar 2021)**
  - Other seniors aged 80 and over
  - Indigenous seniors age 65 and over, Elders and additional Indigenous communities
  - Other hospital staff, general practitioners and medical specialists
  - Vulnerable populations living and working in select congregated settings
  - Staff in community home support and nursing services for seniors

<https://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/covid-19-provincial-support/vaccines#phases>



## Outstanding questions = we don't know the answers

- Mechanism of protection
- Duration of protection, including 1 vs. 2 doses
- Effectiveness against new variant strains
- Safety, immunogenicity and effectiveness in populations outside trials
  - Extremes of age
  - Multiple/severe comorbidities
  - Immunocompromised
  - Pregnancy and breast feeding

