

COVID 19 Vaccination: Evidence and the Kerala Scenario



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3.2 million cases, 9800 deaths last week (as on 18.9.2022)

Figure 1. COVID-19 cases reported weekly by WHO Region, and global deaths, as of 18 September 2022**

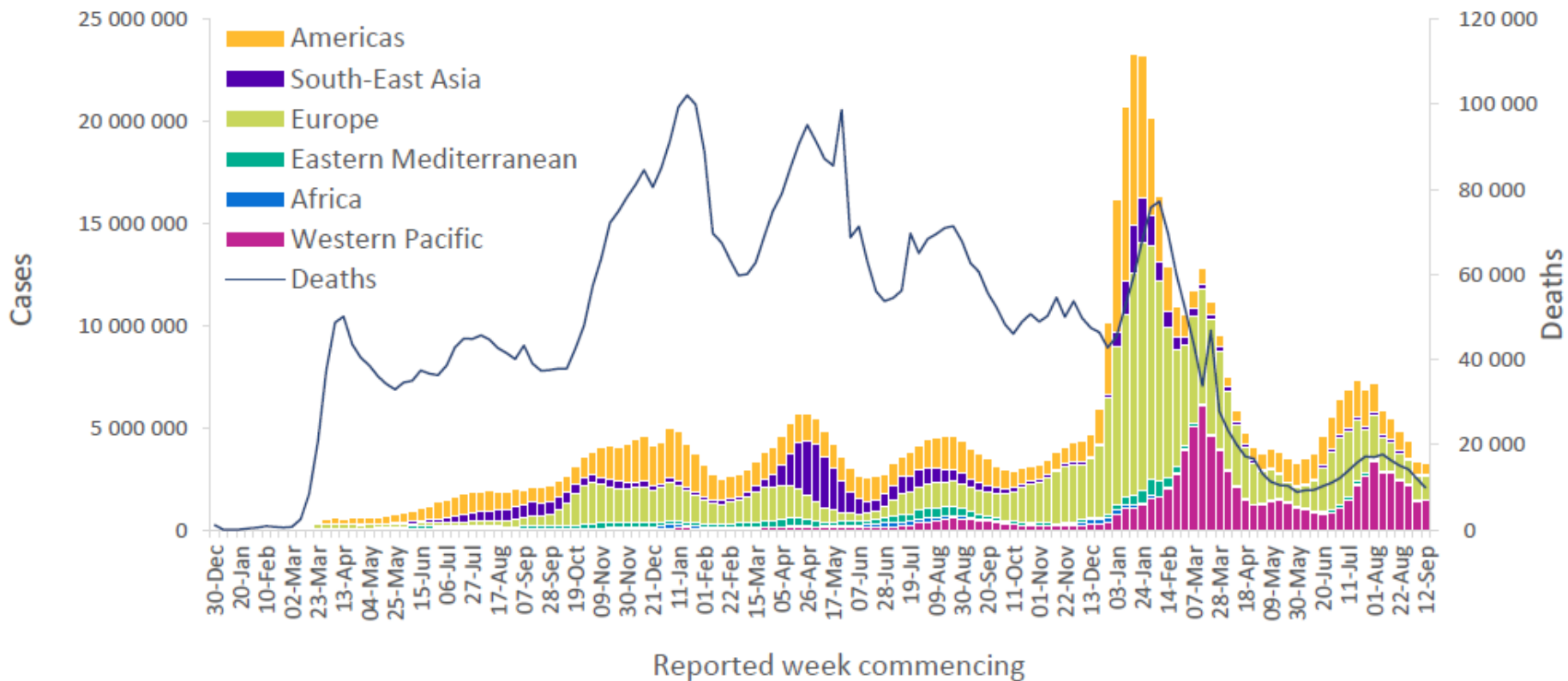


Table 1. Newly reported and cumulative COVID-19 confirmed cases and deaths, by WHO Region, as of 18 September 2022**

WHO Region	New cases in last 7 days (%)	Change in new cases in last 7 days *	Cumulative cases (%)	New deaths in last 7 days (%)	Change in new deaths in last 7 days *	Cumulative deaths (%)
Western Pacific	1 420 762 (44%)	3%	87 985 821 (14%)	2 415 (24%)	-27%	267 600 (4%)
Europe	1 164 233 (36%)	-1%	251 088 626 (41%)	2 767 (28%)	-22%	2 087 946 (32%)
Americas	552 342 (17%)	-12%	177 464 288 (29%)	4 037 (41%)	-5%	2 830 423 (44%)
South-East Asia	66 777 (2%)	-8%	60 192 703 (10%)	427 (4%)	-6%	796 871 (12%)
Eastern Mediterranean	23 658 (1%)	-14%	23 046 219 (4%)	172 (2%)	-46%	348 149 (5%)
Africa	6 853 (<1%)	-35%	9 317 547 (2%)	44 (<1%)	-27%	174 453 (3%)
Global	3 234 625 (100%)	-2%	609 095 968 (100%)	9 862 (100%)	-17%	6 505 455 (100%)

*Percent change in the number of newly confirmed cases/deaths in the past seven days, compared to seven days prior. Data from previous weeks are updated continuously with adjustments received from countries.



COVID Vaccination- Current scenario

- Omicron variant of concern (VOC), accounts for 99.0% of sequences reported globally in the past 30 days
- 119 458 sequences



Vaccine effectiveness(VE)

- **Reduced VE** of COVID-19 primary series vaccines against the Omicron variant for all outcomes (*severe disease, symptomatic disease, and infection*) compared to those that have been observed for the index SARS-CoV-2 strain
- 43 studies from 18 countries



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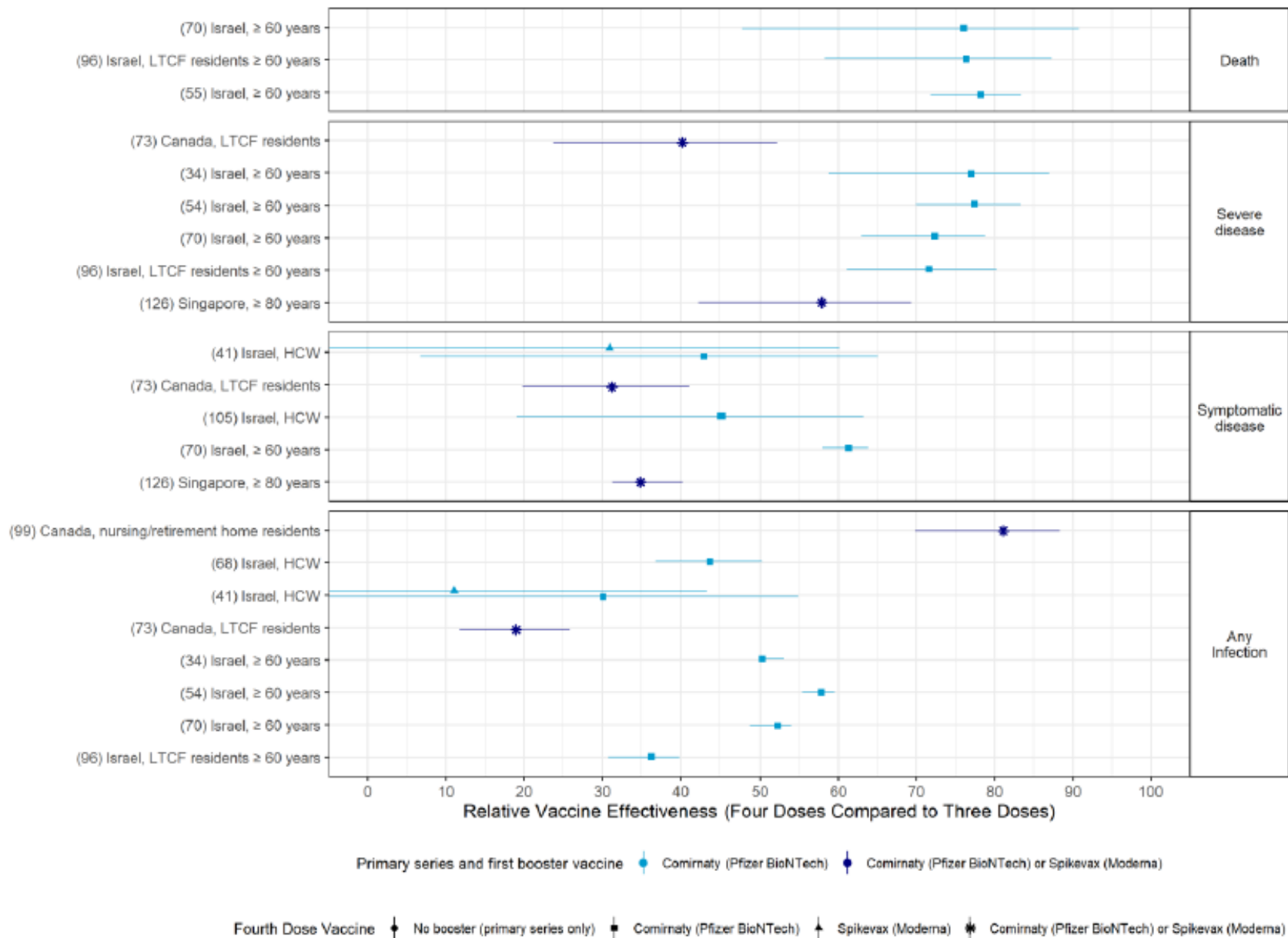
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- VE estimates against the Omicron variant ***remain higher for severe disease than the other outcomes***



Steep decline in VE against infection

- VE against *infection showed a similar pattern of steep waning as that against symptomatic disease.*
- The first booster dose vaccination improved VE against *severe disease in all studies*

Figure 6. Relative vaccine effectiveness of second booster vaccination against Omicron (relative to first booster vaccination)

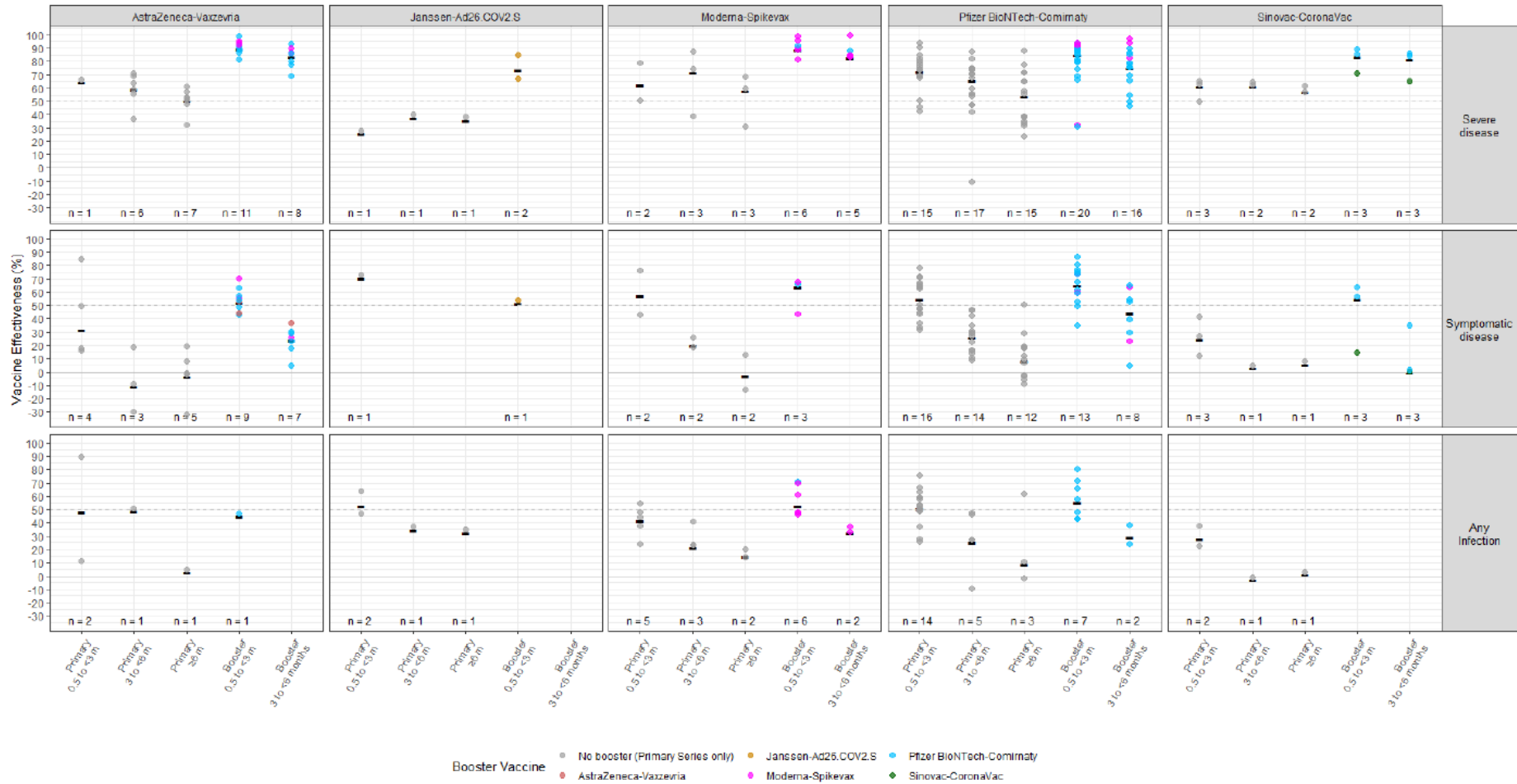




VE- second booster dose

- Canada -49-52%, 59-73%, and 83-88% against Omicron infection, symptomatic disease, and hospitalization
- USA- 66% (95% CI: 60-71%) and 80% (95% CI-71-85%) against emergency department/urgent care visits and hospitalization

Figure 5. Vaccine effectiveness (VE) of primary series and first booster vaccination against the Omicron variant of concern



Dots represent point estimates of VE from each study; dark black horizontal lines represent median VE across all studies in stratum. All data is from a systematic review of COVID-19 VE studies; [methods](#) and [summary tables](#) of VE studies can be found on [view-hub.org](#). Vertical panels represent VE for full primary series (grey dots) and VE for homologous or heterologous booster vaccination (other colored dots) following completion of primary series vaccination with vaccine of primary series noted in column header. All booster VE estimates are for first booster dose. Severe disease includes hospitalization; symptomatic disease includes disease of any severity level; any infection can include symptomatic and asymptomatic infection. Not shown in plot: VE against severe disease at 0.5-<3 month post primary series of Beijing CNBG-BBIBP-CoV (59%, 95% CI: 4 to 80%) and Gamaleya-Gam-Covid Vac (64%, 95% CI: 45 to 92.3%). Additional details on the methods for inclusion of the estimates in the plots provided in text.

Annex 3. Summary of results of neutralization studies assessing primary series and booster vaccine performance against Omicron variant of concern (data updated 19 September 2022)

		Omicron Sub-Lineage					
		BA.1	BA.2	BA.2.12.1	BA.2.75	BA.3	BA.4/BA.5
Primary Series Vaccination							
WHO Emergency Use Listing (EUL) Qualified Vaccines	AstraZeneca-Vaxzevria/SII-Covishield	HNR ₁₃	HNR ₂	HNR ₁	---	---	HNR ₁
	Beijing CNBG-BBIBP-CorV	HNR ₉	HNR ₃	HNR ₂	---	HNR ₁	HNR ₂
	Bharat-Covaxin	↓↓ ₁	---	---	---	---	---
	Cansino-Convidecia	---	---	---	---	---	---
	Janssen-Ad26-COV2.S	HNR ₉	HNR ₁	HNR ₁	---	---	HNR ₁
	Moderna-Spikevax	↓↓↓ ₁₁	↓↓↓to↓↓↓ ₂	HNR ₁	---	---	HNR ₁
	Novavax-Nuvaxovid/SII - Covavax	HNR ₂	HNR ₁	HNR ₁	---	---	HNR ₁
	Pfizer BioNTech-Comirnaty	HNR ₅₃	HNR ₆	HNR ₁	HNR ₁	HNR ₁	HNR ₃
	Sinovac-CoronaVac	HNR ₉	↓↓↓ ₁	---	---	---	↓↓↓ ₁
Vaccines without WHO EUL	Anhui ZL-Recombinant	---	---	---	---	---	---
	Gamaleya-Sputnik V	HNR ₃	HNR ₁	HNR ₁	---	---	HNR ₁
	Chumakov-Covi-Vac	HNR ₂	---	---	---	---	---

Abbreviations: HNR=high non-response. Arrows generalize the magnitude of reduction in VE or neutralization: “↔” indicates <2-fold reduction in neutralization relative to the ancestral strain; “↓” indicates 2 to <5-fold reduction; “↓↓” indicates 5 to <10-fold reduction; “↓↓↓” indicates ≥10-fold reduction. When more than one neutralization study is available, the interquartile range (25th and 75th percentiles) of fold-reductions across all studies for specific vaccine/sub-lineage was used. HNR indicates a median percent response across all studies of <75%; in these instances, fold-reductions can be biased and, thus, are not presented. The number of studies is shown as subscripts.

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WHO Emergency Use Listing (EUL) Qualified Vaccines	AstraZeneca-Vaxzevria/SII-Covishield	HNR ₁₃	HNR ₂	HNR ₁	----	----	HNR ₁
	Beijing CNBG-BBIBP-CorV	HNR ₉	HNR ₃	HNR ₂	----	HNR ₁	HNR ₂
	Bharat-Covaxin	↓↓↓ ₁	----	----	----	----	----
	Cansino-Convidecia	----	----	----	----	----	----
	Janssen-Ad26-COV2.S	HNR ₉	HNR ₁	HNR ₁	----	----	HNR ₁
	Moderna-Spikevax	↓↓↓ ₁₁	↓↓↓to↓↓↓ ₂	HNR ₁	----	----	HNR ₁
	Novavax-Nuvaxovid/SII - Covavax	HNR ₂	HNR ₁	HNR ₁	----	----	HNR ₁
	Pfizer BioNTech-Comirnaty	HNR ₃₃	HNR ₈	HNR ₁	HNR ₁	HNR ₁	HNR ₃
Vaccines without WHO EUL	Sinovac-CoronaVac	HNR ₉	↓↓↓ ₁	----	----	----	↓↓↓ ₁
	Anhui ZL-Recombinant	----	----	----	----	----	----
	Gamaleya-Sputnik V	HNR ₃	HNR ₁	HNR ₁	----	----	HNR ₁
	Chumakov-Covi-Vac	HNR ₂	----	----	----	----	----
First Booster Vaccination (Primary Series Vaccine + Booster Vaccine)							
WHO Emergency Use Listing (EUL) Qualified Booster Vaccines	AstraZeneca-Vaxzevria/SII-Covishield + AstraZeneca-Vaxzevria/SII Covishield	HNR ₂	HNR ₂	----	----	↓↓↓ ₁	↓↓↓ ₁
	AstraZeneca-Vaxzevria/SII-Covishield + Moderna-Spikevax	↓ ₁	----	----	----	----	----
	AstraZeneca-Vaxzevria/SII-Covishield + Pfizer BioNTech-Comirnaty	↓↓↓to↓↓↓ ₂	↓↓↓ ₁	----	----	↓↓↓ ₁	----
	Beijing CNBG-BBIBP-CorV + Beijing CNBG-BBIBP-CorV	↓↓↓to↓↓↓ ₄	HNR ₂	HNR ₁	----	↓↓↓ ₁	HNR ₁
	Janssen-Ad26-COV2.S + Janssen-Ad26-COV2.S	HNR ₂	----	----	----	----	----
	Janssen-Ad26-COV2.S + Moderna-Spikevax	↓↓↓ ₁	----	----	----	----	----
	Janssen-Ad26-COV2.S + Pfizer BioNTech-Comirnaty	↓ ₁ to↓↓↓ ₂	----	----	----	----	----
	Moderna-Spikevax + Moderna-Spikevax	↓to↓↓↓ ₉	↓↓↓ ₁	↓↓↓ ₁	----	↓↓↓ ₁	↓↓↓ ₂
	Moderna-Spikevax + Pfizer BioNTech-Comirnaty	↓↓↓ ₁	----	----	----	----	----
	Novavax-Nuvaxovid/SII – Covavax + Novavax-Nuvaxovid/SII - Covavax	↓↓↓ ₁	----	----	----	----	----
	Pfizer BioNTech-Comirnaty + Pfizer BioNTech-Comirnaty	↓to↓↓↓ ₄₄	↓to↓↓↓ ₁₅	↓to↓↓↓ ₃	↓↓ ₁	↓to↓↓↓ ₄	↓↓to↓↓↓
	Pfizer BioNTech-Comirnaty + Janssen-Ad26-COV2.S	↓ ₂	----	----	----	----	----
	Pfizer BioNTech-Comirnaty + Moderna-Spikevax	↓to↓↓↓ ₂	----	----	↓↓↓ ₁	----	↓↓↓ ₁
	Sinovac-CoronaVac + Cansino-Convidecia	↓↓ ₁	----	----	----	----	----
Booster Vaccines without WHO EUL	Sinovac-CoronaVac + Sinovac-CoronaVac	↓↓↓to↓↓↓ ₇	↓↓↓to↓↓↓ ₃	↓↓↓ ₁	----	↓↓↓ ₁	↓↓↓to↓↓↓
	Sinovac-CoronaVac + Pfizer BioNTech-Comirnaty	↓↓↓ ₂	↓↓↓ ₁	----	----	----	----
	Anhui ZL-Recombinant + Anhui ZL-Recombinant	↓to↓↓↓ ₂	↓↓↓ ₁	↓↓↓ ₁	----	↓↓↓ ₁	↓↓↓ ₁
	Beijing CNBG-BBIBP-CorV + Anhui ZL - Recombinant	↓↓↓to↓↓↓ ₄	HNR ₂	HNR ₁	----	↓↓↓ ₁	HNR ₁
	Gamaleya-Sputnik V + Gamaleya Sputnik Light	↓↓ ₁	----	----	----	----	----
	Sinovac-CoronaVac + Anhui ZL - Recombinant	↓to↓↓↓ ₂	↓to↓↓↓ ₂	↓to↓↓↓ ₂	----	↓to↓↓↓ ₂	↓↓ ₁
	Sinovac-CoronaVac + Cansino-Ad5-nCoV-IH	↓↓↓ ₁	----	----	----	----	----
Second Booster Vaccination (Primary Series + First Booster Vaccine + Second Booster Vaccine)							
WHO Emergency Use Listing (EUL) Qualified Booster Vaccines	Moderna-Spikevax + Moderna-Spikevax + Moderna-Spikevax	↓ ₁	----	----	----	----	----
	Moderna-Spikevax + Moderna-Spikevax + Moderna-Spikevax Bivalent Original/Omicron BA.1	↓ ₁	----	----	----	----	↓↓↓ ₁
	Pfizer BioNTech-Comirnaty + Pfizer BioNTech-Comirnaty + Pfizer BioNTech-Comirnaty	↓↓↓ ₁	----	----	----	----	----
	Pfizer BioNTech-Comirnaty + Pfizer BioNTech-Comirnaty + Moderna-Spikevax	↓↓↓ ₁	----	----	----	----	----

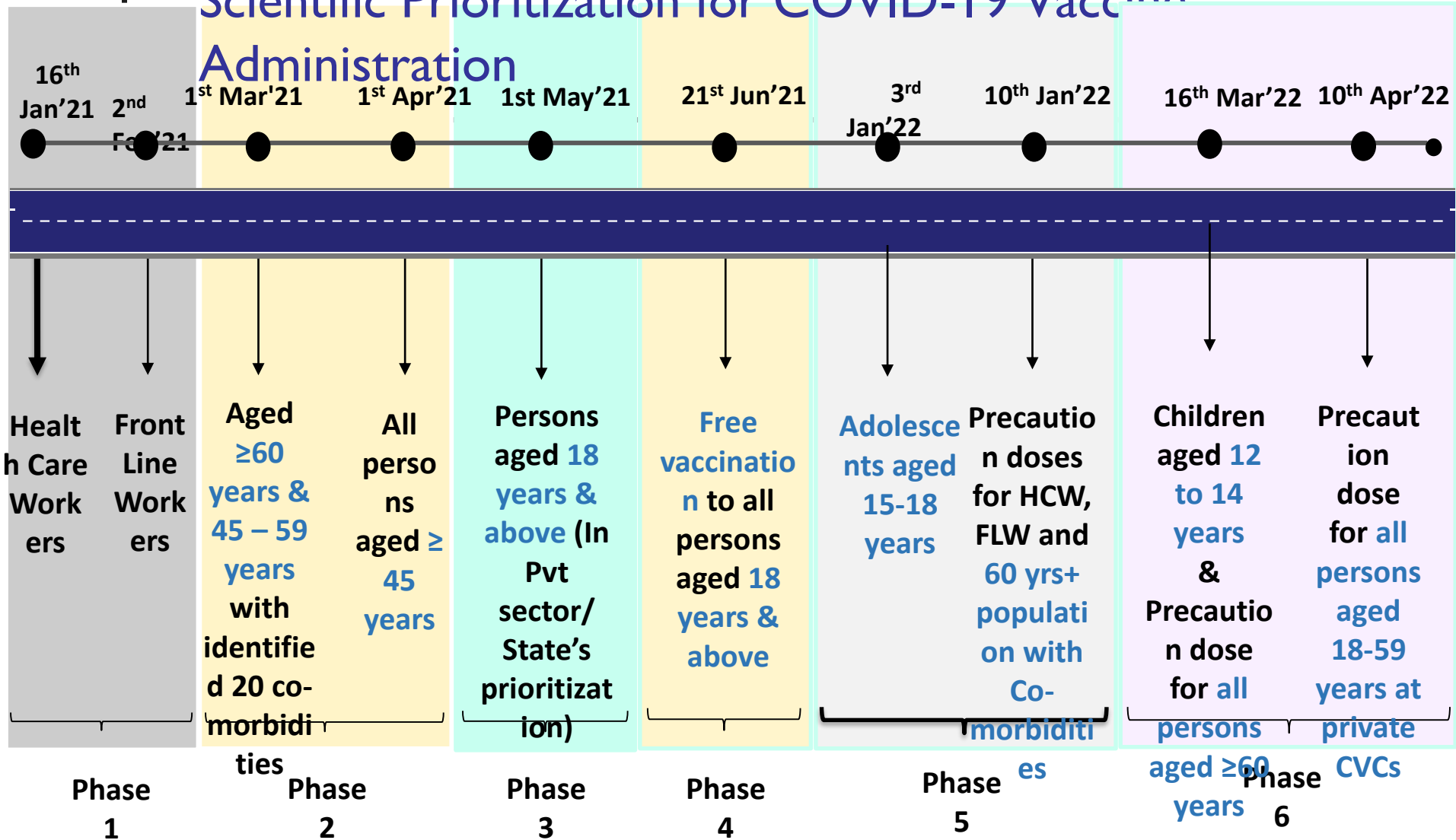
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COVID-19 vaccination

Kerala

Scientific Prioritization for COVID-19 Vaccination Administration

Administration



Vaccination for lactating mothers approved on 19th May, 2021 and of pregnant women on 2nd July, 2021

Azadi Ka Amrit Mahotsav

Vaccination

- Precaution dose of Vaccination to all above 18 years
- Free from Government Vaccination Centers
- From July 15 to September 30



75
Azadi Ka
Amrit Mahotsav

**കൊവിഡ്
വാക്സിനേഷൻ
കരുതൽ ഡോസ്**

സെപ്റ്റംബർ 30 വരെ

18 വയസ്സിന് മുകളിൽ
പ്രായമുള്ള എല്ലാവർക്കും
കരുതൽ ഡോസ് സൗജന്യമായി
സർക്കാർ കൊവിഡ് വാക്സിനേഷൻ
കേന്ദ്രങ്ങളിൽ നിന്നും ലഭിക്കും

എത്രയും പെട്ടെന്ന് കരുതൽ ഡോസ് സ്വീകരിക്കൂ...
കൊവിഡിൽ നിന്നും അധികസുരക്ഷ ഉറപ്പാക്കൂ..

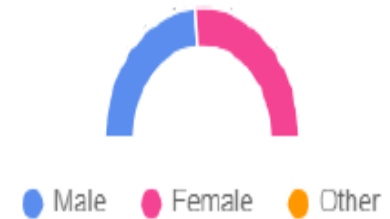


ആരോഗ്യ കുടുംബക്ഷേമ വകുപ്പ്
കേരള സർക്കാർ

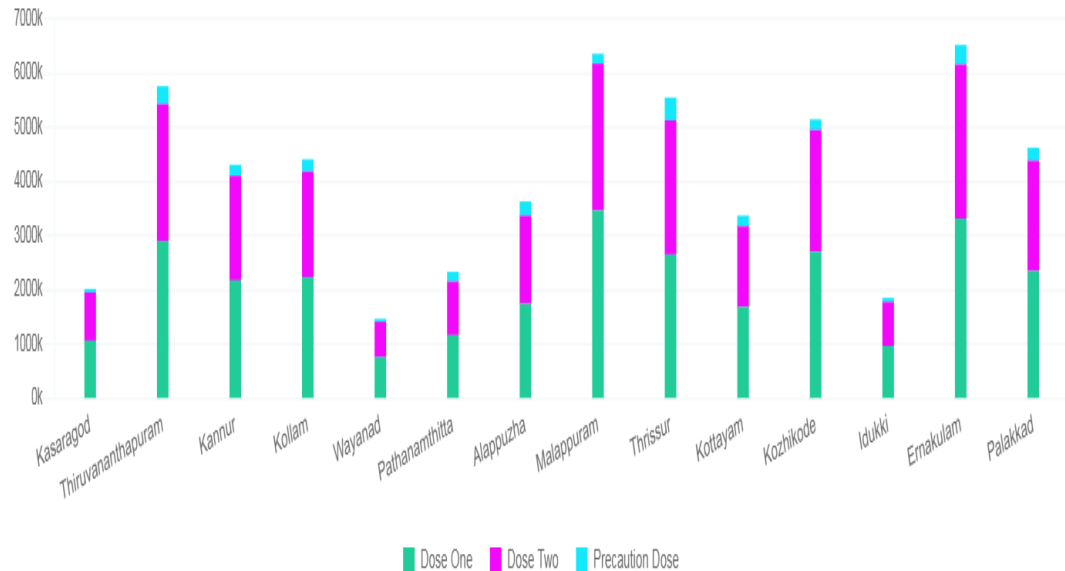
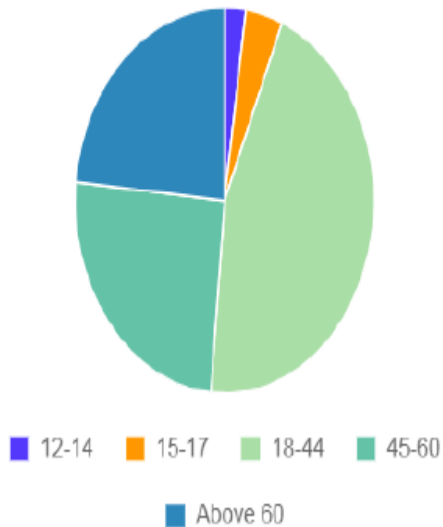
Total Doses administered

- **Total Vaccination Doses** : **5,73,08,462**
- Dose 1 : 2,91,29,028
- ~~Dose 2~~ : ~~2,52,01,279~~
- Precaution Dose : 29,78,155

Vaccination - Category



Vaccination by Age



Covid vaccination

State Summary Category						
Wise as on 20/09/2022 at 12 AM						
Priority Group	1st Dose		2nd Dose		Precaution Dose*	
Health Care Worker	555819	100%	510972	92%	255307	50%
Front Line Worker	571942	100%	537171	94%	194829	36%
≥ 60 Years	596693 6	101%	5460760	92%	1735056	32%
45-59 Years	694582 1	96%	6304090	87%	383632	6%
18-44 Years	129639 27	96%	10939525	81%	357565	3%
Total (18+)	27,004,445	101%	23,752,518	89%	2,926,389	13%
15-17 years	1,318,502	86%	941,654	61%		
12-14 years	795,924	79%	476,395	47%		
Doses Administered						

HCW

HCW Coverage as on 20/09/2022 at 12 AM					
Districts	1st dose	2nd Dose	% fully vaccinated	Precaution dose	Precaution dose(%)*
Alappuzha	29023	27263	94%	15376	57%
Ernakulam	85572	75897	89%	34910	46%
Idukki	13556	13027	96%	6753	52%
Kannur	40390	37578	93%	20045	53%
Kasaragod	11611	10830	93%	5249	49%
Kollam	36043	33854	94%	17035	50%
Kottayam	38711	36350	94%	18813	52%
Kozhikode	52736	47992	91%	20268	42%
Malappuram	44836	42041	94%	20397	49%
Palakkad	34677	32048	92%	17174	54%
Pathanamthitta	29338	25118	86%	13318	53%
Thiruvananthapuram	73435	66466	91%	30320	46%
Thrissur	51910	49234	95%	29516	60%
Wayanad	13985	13306	95%	7316	55%
Grand Total	555823	511004	92%	256490	50%
*Proportion of beneficiaries who are eligible (completed 6 months after 2nd dose)					

Covid vaccination coverage above 60 years

Table 7: Age appropriate group (≥ 60 years) coverage

20/09/202

≥ 60 years Coverage as on 2

at 12 AM

District	Target	1st Dose Coverage	Percentage	2nd Dose Coverage	Percentage fully vaccinated	Precaution dose	%
Alappuzha	424565	429254	101%	401770	95%	160346	40%
Ernakulam	673885	676724	100%	622486	92%	206467	33%
Idukki	193981	194636	100%	173484	89%	39962	23%
Kannur	438602	444644	101%	413389	94%	122274	30%
Kasaragod	182460	181763	100%	160611	88%	37645	24%
Kollam	497558	499734	100%	456216	92%	139924	31%
Kottayam	418008	419910	100%	385187	92%	125046	33%
Kozhikode	526896	529470	100%	481077	91%	117887	25%
Malappuram	477642	488369	102%	435927	91%	91815	21%
Palakkad	437708	439947	101%	402999	92%	131633	33%
Pathanamthitta	311297	312447	100%	281247	90%	121072	43%
Thiruvananthapuram	630465	633311	100%	572650	91%	190422	33%
Thrissur	581781	588485	101%	559568	96%	225969	41%
Wayanad	128009	128342	100%	114609	90%	31441	28%

- Total Sessions : 5,50,180
- Government : 4,46,311
- Private : 1,03,869



- Covishield : 4,86,67,187
- Covaxin : 72,71,443
- Sputnik V : 72,785
- Corbevax : 12,95,075
- Covovax : 1,972

Regional Vaccine Store - 3
District Vaccine Stores - 14
Cold Chain Points - 1281

Cold Chain

**Regional
Vaccine
Stores**

**Thiruvananthapuram
RVS**

4 DVS
362 CCPs

Ernakulam RVS

5 DVS
495 CCPs

Kozhikode RVS

5 DVS
424 CCPs

District Vaccine Stores

Alappuzha DVS

91 CCP

Ernakulam DVS

130 CCP

Kannur DVS

107 CCP

Kollam DVS

92 CCP

Idukki DVS

60 CCP

Kasargod DVS

53 CCP

Pathanamthitta DVS

66 CCP

Kottayam DVS

85 CCP

Kozhikode DVS

103 CCP

**Thiruvananthapuram
DVS**

113 CCP

Palakkad DVS

105 CCP

Malappuram DVS

125 CCP

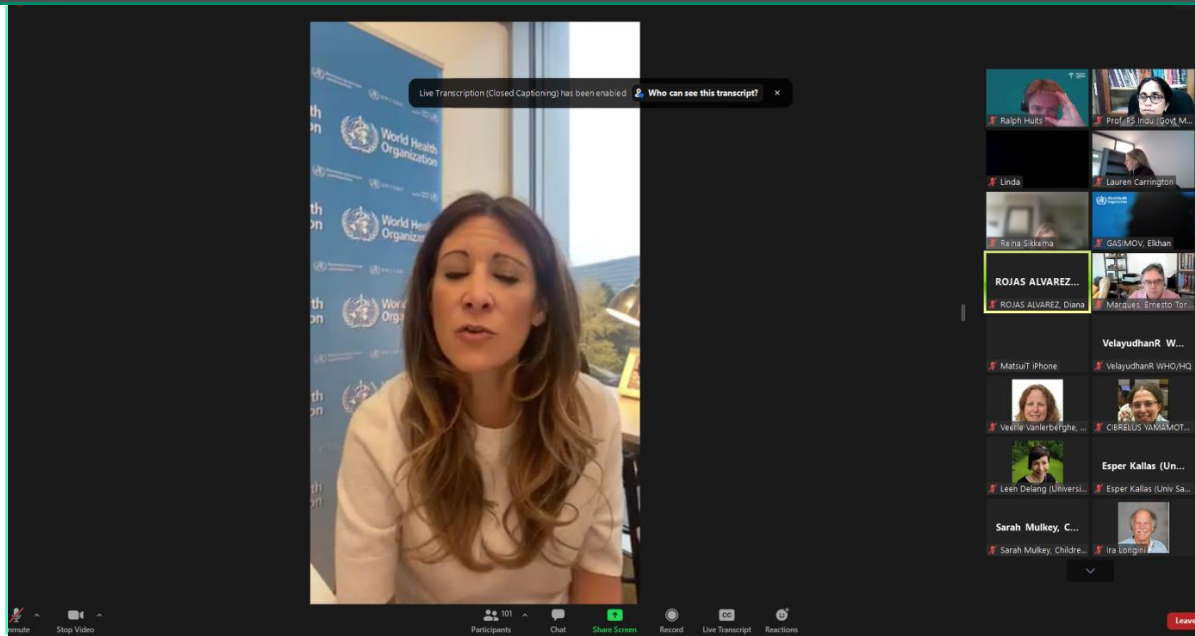
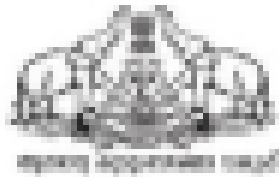
Thrissur DVS

115 CCP

Wayanad DVS

36 CCP

Thank you



Science, Leadership, Politics, Governance, Advocacy