



COVID -19 VACCINATION COVERAGE IN HIMACHAL PRADESH

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ABSTRACT

The Covid 19 Pandemic is the most tough situation to humanity in a century. It was widely believed that pre-pandemic life will never return until a safe and effective vaccine strategy become available. But now Covid-19 vaccination is offering a way to escape out of this tough phase of this pandemic. Vaccination drive against Covid 19 has been going on across the world. In India it began on 16th January 2021. In India till 30th September 2021 1st doses are 64.64 crores with 46% coverage and 2nd doses are 23.7 crores with 17% total population coverage. In Himachal Pradesh till 30th September 2021 (in 9 months) 1st and 2nd doses are 5.66 millions and 2.7 millions with 72% and 32% population coverage with District Solan is on the top in 1st dose coverage of Covid 19 vaccine with 98.18% followed by Lahol and Spiti (84.05%), Kinnaur (77.98%), Una (72.75%), Bilaspur(72.11%), Hamirpur (71.67%), Shimla (69.43%), Kullu (69.04%), Kangra (67.97%), Sirmour (67.83%), Mandi (66.67%) and Chamba is in last (59.76%). In 2nd dose coverage Kinnaur is on the top with 54% coverage followed by Lahol and spiti (47%) it might be because in both districts population is less than other districts. Chamba (23%) and Sirmour (22%) are in the last position in vaccination coverage of 2nd dose it might be because population is more as well as area is hilly, difficult to reach and literacy rate is also low in these districts.

KEYWORDS : Vaccine, Pandemic, Covid-19, Herd immunity

INTRODUCTION

The Covid 19 Pandemic is the most formidable challenge to humanity in a century and has impacted almost every corner of life, causing global economies to fall, changing the way of work, love, interactions and also affects all healthcare systems. To control the spread of the virus, Governments around the world have enforced harsh restrictions on human activities. It was widely believed that pre-pandemic normalcy will never return until a safe and effective vaccine strategy become available. Now Covid-19 vaccination is offering a way to escape out of this tough phase of this pandemic. Without vaccines natural herd immunity would not have been sufficient to restore human activities to normal and it would have turned out in devastated situation. Luckily in the beginning of 2021, emergency approval was given to various vaccines against Covid-19 and began their roll out in countries across the world and it gives hope of a return to 'normal' [1].

A vaccine is a biological preparation that provides acquired active immunity to a particular infectious disease [2] and the administration of vaccines is called vaccination. Vaccination is the most effective tool of preventing infectious diseases [3]. In ending of this ongoing Covid 19 pandemic, vaccines will play a vital role, just as in eradication of smallpox and elimination of polio. So Covid-19 vaccines are intended to provide active immunity and widely approved for their role in reducing the spread, severity and death caused by COVID-19 [4]. As per CDC who have not received a COVID 19 vaccine are 10 times more likely to be hospitalized and risk of death is 11 times higher with the disease than those who have undergone vaccination. But one important thing is that, it's not vaccines that will stop the pandemic, it's vaccination [5].

So it is necessary to achieve herd immunity through vaccination with high coverage globally, not by exposing people to the pathogen, in order to prevent SARS-CoV-2 from continuing to mutate, becoming more resistant to current vaccines and causing more periods of mass fatality [6]. Along with all, equitable access to safe and effective vaccines is also essential in ending this pandemic therefore it must be ensured that a fair, equitable access and high coverage of vaccines must be there to every country across the world to acquire herd immunity because those who are fully vaccinated will be protected from getting sick or dying from COVID-19 [7].

Vaccination drive against Covid 19 has been going on across the world and in India it began on 16th January 2021 [8]. Everyone should take whatever vaccine is made available first, even if one have already had COVID-19. It is important to be vaccinated as soon as possible once it's turn and not wait. Approved COVID-19 vaccines provide a high degree of protection against getting seriously ill and dying from the disease, although no vaccine is 100% protective [7].

Aim

To assess the Covid 19 vaccination coverage in Himachal Pradesh.

Duration

16th January 2021 to 30th September 2021

Material & Methods

Data regarding State Covid 19 vaccination was gathered from various sources as World Health Organisation (WHO), National Health Mission (NHM) HP, various State websites, Twitter, different newspapers as authenticated data is updated every day and analysed as per objective.

Results

Table 1: Covid 19 Vaccination Status Till 30/09/2021

SNo	Category	HP	India	
1	HCW	1 st Dose	94145	10372470
		2 nd Dose	83094	8882131
2	FLW	1 st Dose	241965	18352116
		2 nd Dose	185096	14971767
3	18-45 Years	1 st Dose	2973185	357856886
		2 nd Dose	803653	81029611
4	>45 Years	1 st Dose	2349400	259892269
		2 nd Dose	1630536	132113328
5	Total	1 st Dose	5658695	646473741
		2 nd Dose	2702379	236996837

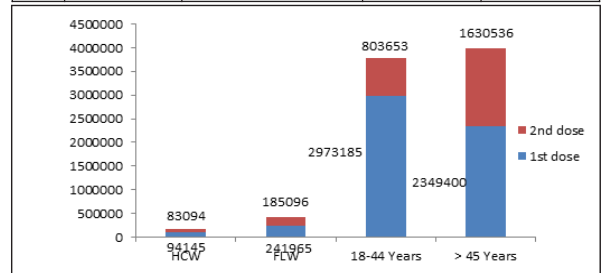


Figure 1: Covid 19 Vaccination Status In Himachal Pradesh Till 30/09/2021

Table 1 and Figure 1 shows the 1st and 2nd doses of Covid 19 vaccines among health care workers, Front line workers (paramilitary forces, police, disaster management volunteers and sanitation workers etc), 18-45 years old and >45 years old till 30th September 2021.

Till 30th September 2021, in 9 months 1st and 2nd doses are 5.66

millions and 2.7 millions in Himachal Pradesh and 64.64 crores and 23.7 crores in India.

Table 2: Percentage of Covid 19 Vaccination Status till 30/09/2021

SNo	Category	HP	India
1	Population	7781244	1397013045
2	1 st dose	5658695	646473741
3	% partially vaccinated	72.72	46.27
4	Fully Vaccinated	2702379	236996837
5	% fully vaccinated	31.63	16.96

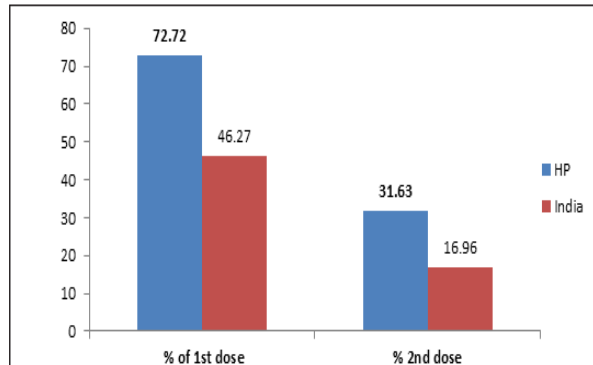


Figure 2: Percentage Of Covid 19 Vaccination Status Till 30/09/2021

Table 2 and Figure 2 shows that 73% population has been vaccinated with 1st dose against Covid 19 in Himachal Pradesh and 46% in India. With 2nd dose (fully vaccinated) only 32% population has been vaccinated in HP and 17% in India. To acquire herd immunity at least 60-70% population must be vaccinated which is a big challenge for India and if vaccination will continue in same pace it will take many years to vaccinate every individual with two doses against COVID 19.

Table 3: District wise vaccination coverage in Himachal Pradesh till 30/09/2021

District	Population	18-44 years		>45 years	
		1 st dose	2 nd dose	1 st dose	2 nd dose
Bilaspur	417478	147661	45291	153403	115687
Chamba	567354	193771	36719	145297	93426
Hamirpur	497061	168985	54024	187271	141635
Kangra	1650512	584342	178537	537540	376083
Kinnaur	91944	43924	26216	27781	23299
Kullu	478628	200221	51545	130226	96655
L&S	34499	18808	7839	10169	8449
Mandi	1092756	383531	113338	344986	246959
Shimla	889713	352697	91700	265049	187449
Sirmaur	579132	245995	48557	146866	80318
Solan	634290	417377	98416	205368	128914
Una	569642	218421	72637	195978	137747

Table 3 shows district wise 1st and 2nd dose in > 18 years population in Himachal Pradesh

Table 4: District wise percentage of Covid 19 vaccination coverage in Himachal Pradesh till 30/09/2021

District	% population partially vaccinated	% population fully vaccinated
Kinnaur	77.98	53.85
L&S	84.05	47.21
Hamirpur	71.67	39.36
Bilaspur	72.11	38.56
Una	72.75	36.93
Solan	98.18	35.84
Kangra	67.97	33.60
Mandi	66.67	32.97
Shimla	69.43	31.37
Kullu	69.04	30.96
Chamba	59.76	22.94
Sirmaur	67.83	22.25

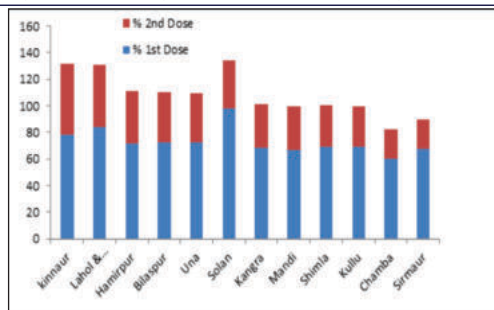


Figure 4: District wise percentage of Covid 19 vaccination coverage in Himachal Pradesh till 30/09/2021

Table 4 and figure 4 shows that in Himachal Pradesh, district Solan is on the top in 1st dose coverage of Covid 19 vaccine with 98.18% followed by Lahol and Spiti (84.05%), Kinnaur (77.98%), Una (72.75%), Bilaspur (72.11%), Hamirpur (71.67%), Shimla (69.43%), Kullu (69.04%), Kangra (67.97%), Sirmaur (67.83%), Mandi (66.67%) and Chamba is in last position with 59.76% coverage till 30th September 2021.

In 2nd dose coverage Kinnaur is on the top with 53.85% followed by Lahol and Spiti (47.21%) it might be because in both districts population is less than other districts. Chamba (22.94%) and Sirmaur (22.25%) are in the bottom in vaccine coverage of 2nd dose against covid 19 it might be because population is more and area is also hilly, difficult to approach and literacy rate is also low in these districts.

DISCUSSION

The world is in the midst of a COVID-19 pandemic caused by SARS COV-2. First case emerged in world in December 2019 in Wuhan (Hubei, China), in India on 27th January 2020 in Kerala and in Himachal Pradesh on 20th March 2020 in Kangra District.

To escape out of this tough phase of this pandemic vaccination program was started world wide. In India it was started in phased manner, first phase of the rollout from 16th January 2021 involved health workers and frontline workers including paramilitary forces, police, disaster management volunteers and sanitation workers [8]. Before starting of 2nd phase till 1st March only 14 million healthcare and frontline workers had been vaccinated in India, falling short of the original goal of 30 million [9] and in Himachal Pradesh 85% of HCW with 2nd dose and 71% of FLW with 1st dose had been vaccinated against Covid 19 [10]. From 1st March onward the 2nd phase was started and covered all those over the age of 60 years, between the ages of 45-60 years with one or more comorbidities, and any health care or frontline worker that did not receive a dose during first phase [11]. 3rd phase was started from 1st April and eligibility was extended to all those over the age of 45 years. On 8th April, from 11 to 14th April, Honourable Prime Minister Narendra Modi called for a *Teeka Utsav* ("Vaccine Festival") with a goal to increase the pace of the vaccination program by vaccinating as many eligible as possible. At the end of the *Utsav*, India had reached a total of over 111 million and Himachal Pradesh 1.03 million vaccine doses to-date [12]. 1st May onward eligibility was extended to all residents over the age of 18. The registration for 18-44 years age group started on the COWIN portal and Arogya Setu App since April 28 [13].

Covid-19 vaccines are intended to provide active immunity and widely approved for their role in reducing the spread, severity and death caused by COVID-19 [4]. For most people 18 years and older, including those with co-morbid conditions of any kind including hypertension, diabetes, asthma, pulmonary, liver and kidney disease, as well as chronic infections that are stable and controlled, the COVID-19 vaccines are safe but one must consult doctor if:

- Compromised immune system
- History of severe allergies, particularly to a vaccine or any of the ingredients in the vaccine
- Severely weak

Adolescents and children tend to have milder disease as compared to adults, so it is less priority to vaccinate them than older people, those with chronic health conditions and health workers [7].

It is necessary to achieve herd immunity through vaccination with high

coverage globally. Also said by Ellen Foxman and Omer, director of the Yale Institute for Global Health that “We need to get vaccinated as soon as we can, so we can prevent the spread of COVID-19, which will also prevent the emergence of variants. It's a race between vaccination and variants. And “If we continue to let this pandemic run wild, there is a probability that there will eventually be a variant, against which the vaccines will be less effective.” Even when the herd immunity threshold is attained, there will still be smaller outbreaks. “That's because vaccine coverage is always uneven [14].

When population collective immunity reaches a point where the disease is no longer to spread, it reaches the herd immunity threshold. At the start of the pandemic, figures like 60-70% were given as estimates of how much of the population would need immunity from the Covid 19 in order to reach herd immunity but as we are moving towards the different stages of the pandemic with mutated variants which are more infectious and could potentially impact the effectiveness of the vaccines, now Covid 19 needs roughly 70 to 80% of the population to be vaccinated to reach the herd immunity threshold, although this will likely be a moving target. In contrast to Covid 19, flu which needs between 33% and 44% vaccinated population to reach the herd immunity threshold [15].

As of July 2021, 20 vaccines are authorized by at least one national regulatory authority for public use [16]. India initially approved Covishield and Covaxin and later Sputnik V and Moderna vaccines [17]. In Himachal Pradesh Covishield is mainly being used in all 460 Government and 4 private session sites. Against Covid 19, two doses of vaccines are being given, earlier the gap between doses were 28 days later on extended to 6 weeks and then again delayed to 12 weeks because in research it was found that a long delay may be beneficial, resulting in more antibodies to SARS-CoV-2 and an enhanced cellular immune response [18].

This global COVID-19 vaccination faces several challenges which may impact its success. One major obstacle in the success of COVID-19 vaccinations is a negative public opinion towards vaccine. This challenge can be overthrown by educating the public about the importance of COVID-19 vaccination and being transparent about the development of the vaccine along with its potential adverse events. Educating people helps to build trust in the decision to offer vaccinations and the world will be able to escape out of the pandemic and return to 'normal' life. [19].

CONCLUSION

Only 32 % population of Himachal Pradesh has been fully vaccinated (2 doses) and 17% population in India. To acquire herd immunity at least 60-70% population must be vaccinated which is a big challenge and if vaccination will continue in same pace it will take many years to vaccinate every individual with two doses of Covid 19 vaccine.

Safe and effective vaccines are important tool but in near future we must continue Covid appropriate behaviour as cleaning our hands, wearing masks, physically distancing, avoiding crowds and ensuring good indoor ventilation. Being vaccinated does not mean that we can throw caution to the wind and put others including ourselves at risk, as research is still ongoing on how much vaccines protect against disease and its transmission.

Funding: No funding sources.

Conflict of interest: None declared.

Ethical approval: Not required

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