



## **Vaccines Production in Pakistan**



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# Vaccines Production in Pakistan (VPIP)

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## **Introduction**

Vaccines have transformed public health throughout the world particularly for children and global immunization program a powerful tools to control the burden of vaccine preventable diseases. Access to quality vaccines at affordable cost represents a challenge to health systems due to the few manufacturers, the limited capabilities of national regulatory authorities and under-funded health systems, particularly in low and middle- income countries. A limited proportion of vaccines used in routine and non-routine immunization programs is produced locally by four main institutions in EMRO i.e. VACSERA (Egypt), Razi Institute (Iran), NIH (Pakistan) and Tunis. There are 18 countries, produce 51 types of vaccines for their own consumption, however a few of the country's export and supply vaccines to other countries. It includes China, India, Brazil, Cuba and Indonesia. There is a vast scope of vaccine due to growing population of Pakistan. There are possibilities of Joint Venture in the area of vaccine production with China, Iran, Egypt and Tunis, preferable with China using the CPEC window for investment in the country.

It is estimated that nearly 85% population of world is living in developing countries and only 15% population is living in developed countries. While developed countries contribute towards 82% of global vaccine sales and developing countries contribute only 18%. The growth of global vaccine market from 2000 to

2013 is US\$ 5 billion to US\$ 24. It is estimated that this vaccine market will rise to US\$ 100 billion in 2025. In 2012 UNICEF purchased 50% of global volume of vaccine doses mainly EPI vaccines. The global vaccine leaders are GSK having 23% market share, Sanofil Pasteur 17%, Pfizer 13%, Merck 12% and Novartis 10% market share while remaining 25% is contributed by other vaccine manufacturers.

Vaccines are important tools in disease prevention and their availability in good quality at affordable cost represents a challenge for health systems. The two public health interventions, have had the greatest impact on global health, are clean water and vaccines. However, it is profoundly tragic that despite the availability of simple vaccines, almost 1.5 million children still die each year from vaccine preventable diseases. New global changes and challenges, including increased competition, difficulties in access to cutting edge technology, reduction in the number of vaccine suppliers, limited market and profit margins and decreased interest in vaccine production by the industrialized countries, are putting additional strains on self- sufficiency initiatives.

Multinational manufacturers have traditionally supplied a large proportion of the vaccines to EPI, which targets the killer diseases of childhood, are now diverting their business to more profitable products. This move has created a void for EPI vaccines, which is being filled by

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manufacturers from developing countries. Over 60% of all the BCG vaccine and over 80% of all measles vaccine produced globally are manufactured in India and Indonesia. These factors have direct and great implication for the policy makers in Pakistan. The 2005 earthquake disaster and 2010 floods in Pakistan had exposed our vulnerability to the critical availability of life saving Vaccines and Biologicals like anti tetanus serum.

### Routine EPI Vaccine & Requirements

The EPI performance chart for (2015-2020) is given in the following table:

Sr.No.	Item of Activity/Output	Unit	Scope of vaccines	Financial expenditure (PKR) million
	<b>1. Vaccines</b>	Dose		
1	i) Polio Vaccines	Dose	236733230	157,318,761
2	ii) BCG Vaccines	Dose	60,564,224	65,672,359
3	iii) Pentavalent	Dose	12,721,850	345,301,7624
4	iv) Pneumococcal Vaccine	Dose	2630,600	107,2599288
5	v) Rotavirus Vaccines	Dose	-	-
6	vi) Measles Vaccines	Dose	71,157,893	2,049,469,157
7	vii) TT Vaccines	Dose	63,107,812	439,283,368
	<b>2. Syringes</b>	No.		
8	i) AD Syringes (0.05ml)	No.	26,072,339	179,662,387
9	ii) AD Syringes (0.5ml)	No.	62,696,415	454,431,795
10	iii) Disposable Syringes (2ml)	No.	2,544,920	14,524,252
11	iv) Disposable Syringes (5ml)	No.	13,238,793	80,858,578
12	<b>3. Safety Boxes</b>	No.	1,176,811	119,082,087
	<b>4. Health Education &amp; Communication Material</b>	No.	1,017,859	151,037,055
14	i) Production of TV Spots	No.	7	4,037,210
15	ii) Airing/telecasting	Dose	214	3,203,168
16	iii) Production Radio Spots	Dose	-	-
17	iv) Advertising on Print Media	Dose	4,782	112,689,298
18	v) Advocacy meetings/Seminars	Dose	1,012,856	31,107,379
21	<b>5. ORS</b>	Pkt	4,070,000	26,990,000
22	<b>6. Establishment Charges</b>	No.	56	145,570,996
23	<b>7. Contingencies</b>	No.	Lumpsum	333,071,155
				<b>12,746,242,697</b>
24	<b>Total (Local)</b>			
25	<b>GAVI</b>			<b>1,611,666,755</b>
	<b>World Bank/JICA - PEI</b>			<b>12,583,762,539</b>
				<b>26,941,671,991</b>

Source: - EPI, PCI, Federal EPI Programme, 2015 (NHSCR&C Division), Islamabad.

Total local cost of vaccines met through the PSDP is Rs. 3.12 billion (11.6 %) of the total cost, whereas donors and development partners are providing vaccines of Rs. 14.2 billion therefore total cost of vaccines is

Rs.17.32 billion which is 64% of the total PC-1 cost. The vaccines imported and consumed by the private sector is not corrected. Population of Pakistan is growing at 2.4 % per annum and resources decreased for children & mother vaccines. The financial cost will further enhance that will consume our foreign exchange resources in future.

### Incentives for Vaccines Manufacturing Sector in Pakistan

#### a) Tax Holiday

Reduce the operating cost and keeping the final price of local vaccines in check, duties & taxes need to be lowered. e.g. Tax holding for 10-15 years may be granted. In consultation of Finance (FBR), Commerce, and Industry Divisions, the following incentives may be considered:-

- Corporate Tax on Income of the company may be exempted. Income, profits, gains made out of the project should not be taxed during tax-holiday period.
- Turnover Tax on Sales Revenue of the company to be exempted.
- Zero rating of .W.H. Tax, Sales Tax, and Excise Duty on Import of Plant, Machinery, and Equipment.

#### b) Buy Back Agreement

Government of Pakistan should offer a “Buy-Back Agreement” with the vaccine producers to ensure production at an economically viable level on consistent basis. Among other things, the buy-back agreement should:-

- Define methodology for the sale and purchase of vaccines and commercial terms including billing and payments for meeting operations and maintenance expenses, debt

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servicing, insurance changes, and expenses of fix nature.

- Fix payment obligations for the purchaser (public sector entity) and guaranteed by GOP.

## Research & Development Cost Sharing

Research & Development is an investment in future; and biotech, of all fields, perhaps needs it more today than ever before local production of vaccines should be complemented by an equally effective and intense effort in R&D. It will play a pivotal role in future success and attaining self-sufficiency-level for the new product.

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