



We  
Pioneer



We  
Collaborate



We  
Innovate  
To create value



We  
Enable  
Better Health  
Live Well  
Live Longer

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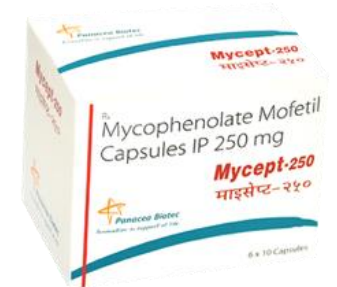
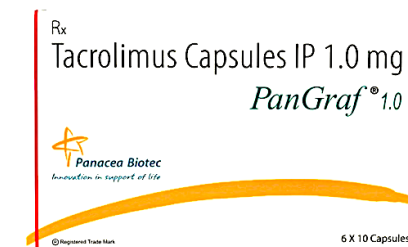
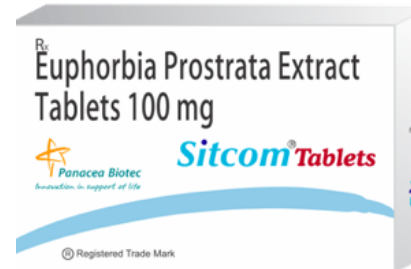
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**Ranked 1<sup>st</sup> in Top 20 pharmaceutical companies in India**  
Growth of 44% in September'19 compared to September'18 (AIOCD)



# Panacea Biotech believes in giving a chance for **Better Health to Live Well and Live Longer**

**10 billion+**

Polio immunisations in developing countries

**150 million+**

Immunisations by innovative fully-liquid vaccines

**36 million+**

Patients treated by GI franchise

**33 million+**

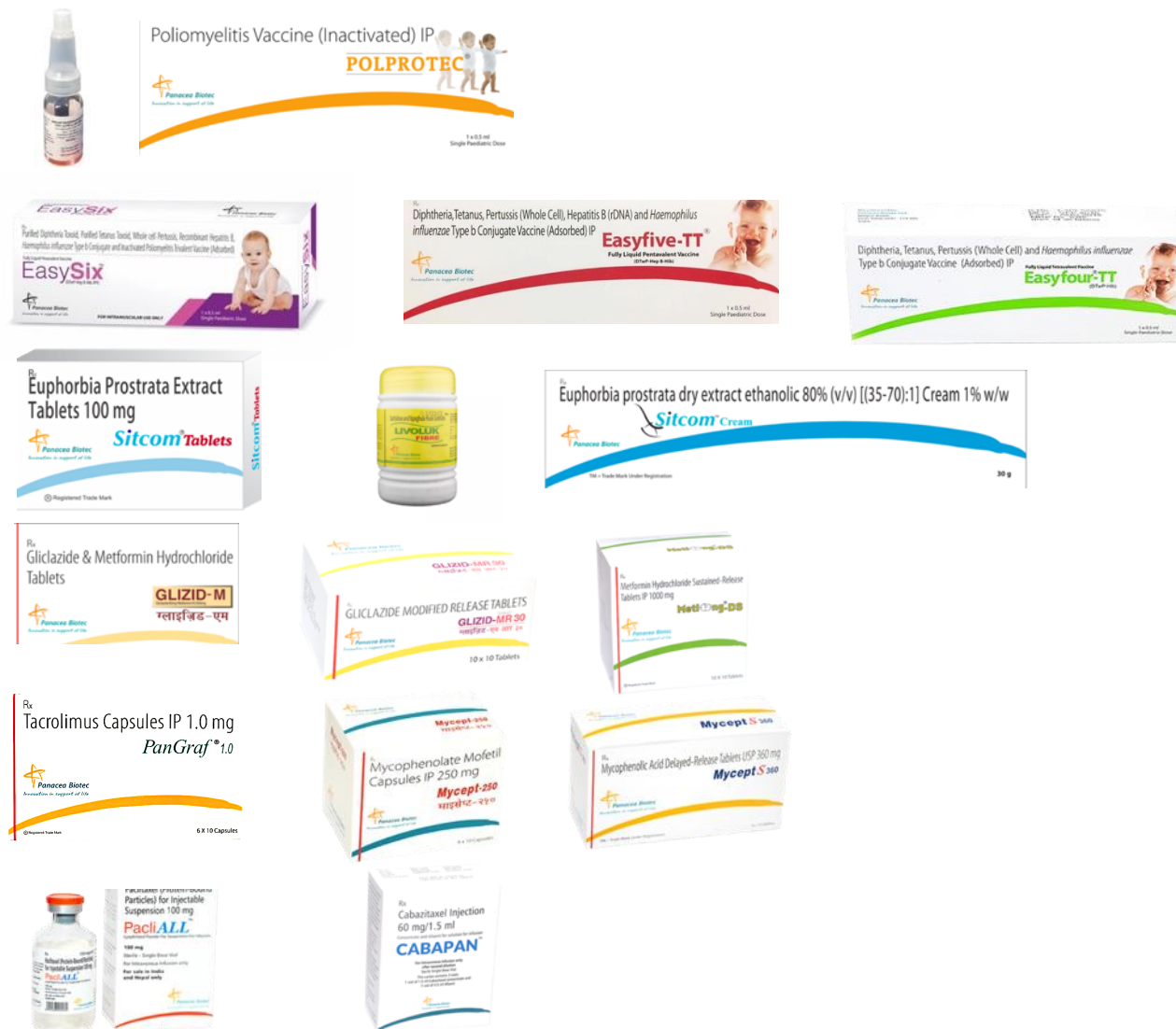
Patients being treated by Diabetes franchise

**6.4 million+**

Patients treated by Organ transplantation franchise

**400,000+**

Patients treated by Oncology franchise



Source: Data on file. Updated: 2019

December 20, 2019

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A leading player in all segments with an aspiration to push boundaries

4<sup>th</sup>

Vaccine company

11<sup>th</sup>

Pharmaceutical company<sup>1</sup>

15<sup>th</sup>

Biotechnology company

Top 50

Innovators in India

.....& Growing

Source: 1. In Represented Market. AIOCD Secondary Sales. Updated: April 2019. 2. Thomson Reuters.

# A proven name in vaccines and pharmaceuticals with a track-record to bring first-to-market innovations across the developing world

## Market-leading first-to-market products

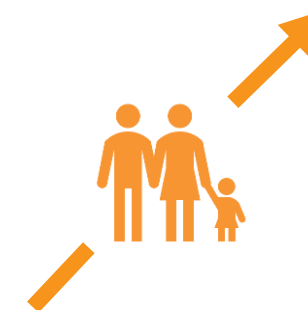
Products	Rank
EasySix <i>Vaccines</i>	1
Pangraf <i>Transplantation</i>	1
Glizid-M <i>Diabetes</i>	1
Sitcom <i>Haemorrhoids/Piles</i>	1
PacliAll <i>Oncology</i>	1

## Focused Sales and Marketing teams covering over 150,000 clinicians in India

Specialised focus on Paediatricians, Nephrologists, Endocrinologists, Diabetologists, Cardiologists, Oncologists, Surgeons, Orthopaedic, Gastroenterologists, General Physicians, etc.

## Expanded distribution reach and market access across Key Markets

Over 2,000 distributors for access to 200,000 pharmacies across India  
Exports to over 50+ countries



- Senior Management experience in running business in a focused manner
- Strong track record of commercial execution
- Experience building and maintaining industry-leading franchises
- Support programs for patients and caregivers

**From India to the World**, our people work in a **flexible structure** to deliver effective operations, to meet the **affordability war-cry**, to provide **innovative solutions for challenges** while maintaining **ever-evolving quality standards**



Effective structure and operational performance

- Integrated Research and Development
- More ideas per ft<sup>2</sup>



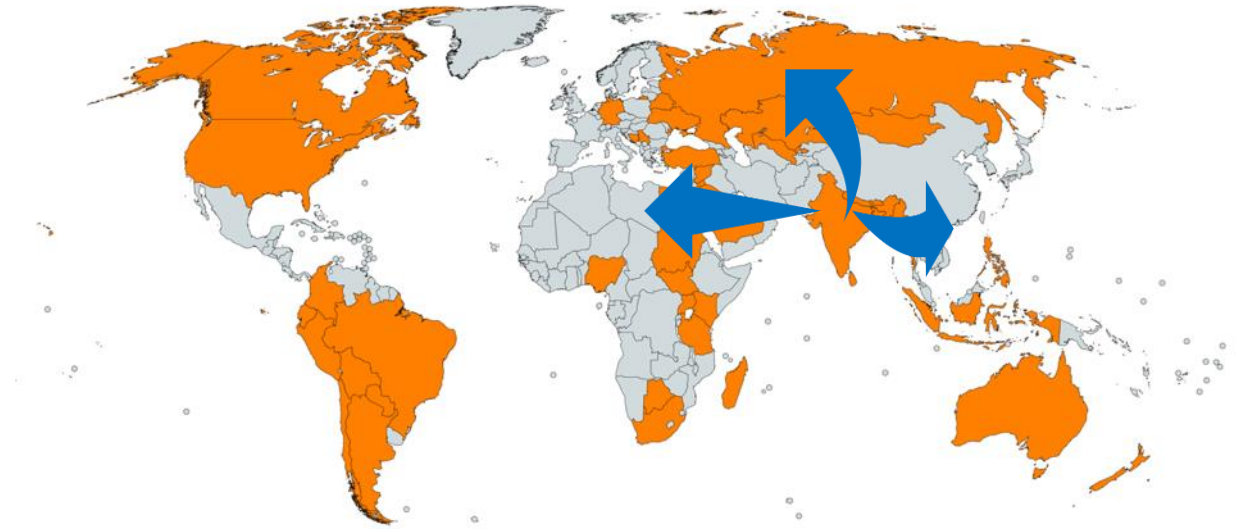
Product basket based on evolving medical needs

- Niche, difficult-to-develop products
- Putting Patient Interest First for sustainable brand building
- Diversified into private and public markets



Growing global presence

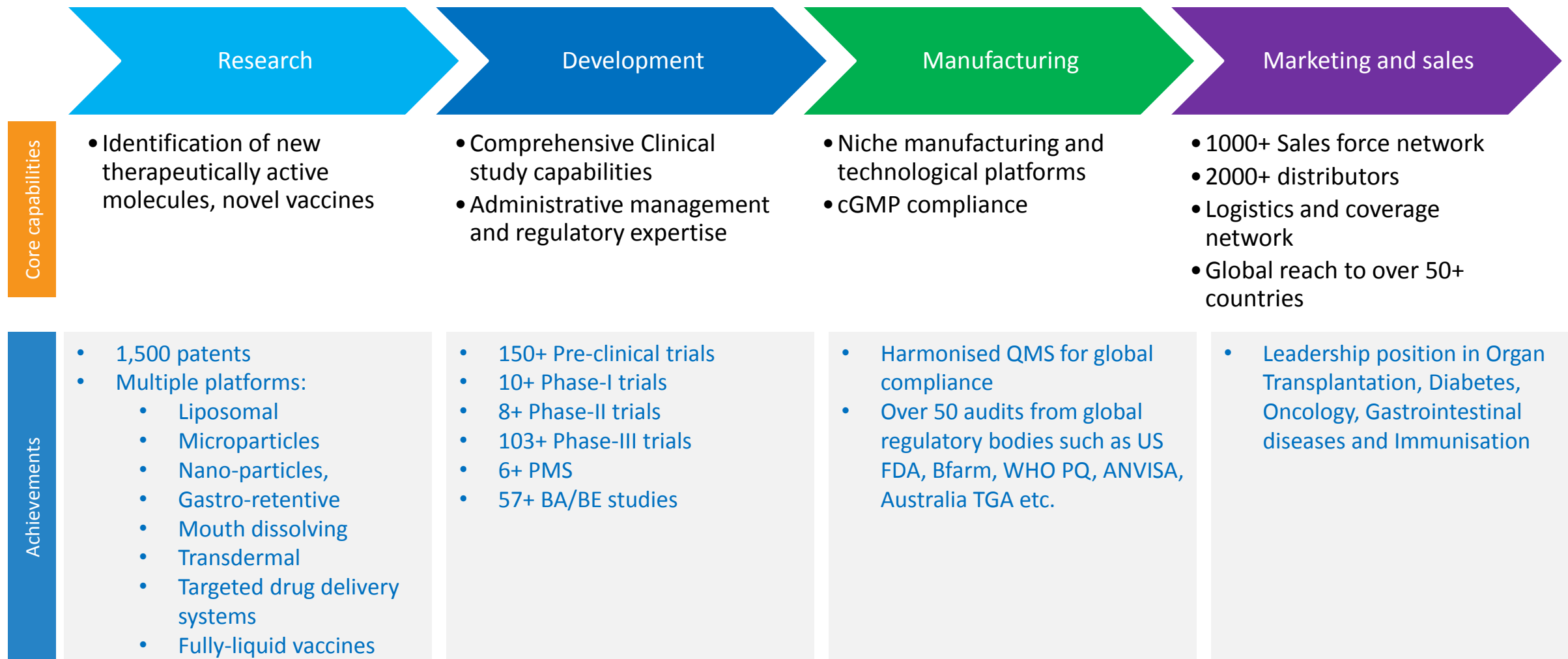
- Collaborations and partnerships to drive commercialisation of products efficiently



Panacea Biotec's global presence powered through its hub in India

Created with mapchart.net ©

# A biotechnology company that prides on developing affordable innovation





# Constant commitment to Innovation

*Our research and development capabilities*



Innovation at heart



Collaborative projects



Global experience

Core capabilities

Cellular and molecular biology  
Medicinal chemistry  
Pharmacology  
Pharmaceutical development  
Pre-clinical development  
Clinical development  
Regulatory affairs  
Pharmacovigilance & Drug safety monitoring  
Co-development as part of Alliance with Global partners



Nanoparticle systems



Microemulsion systems



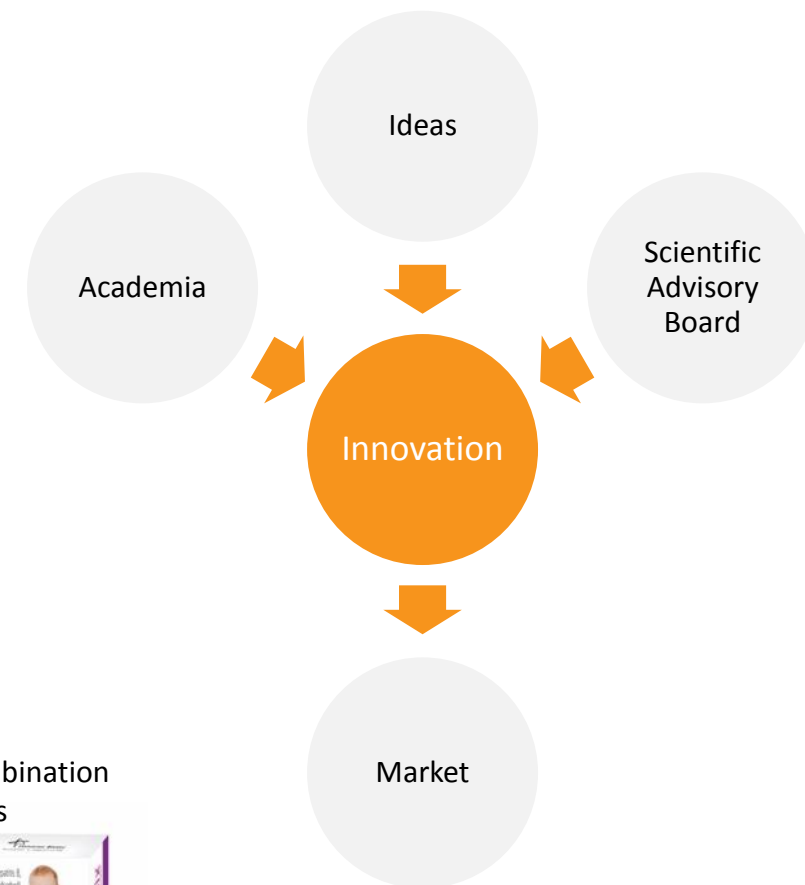
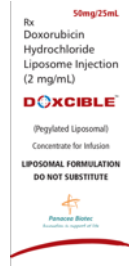
Liposomal systems



Transdermal Drug Delivery






Fully-liquid combination vaccines






# Pharmaceutical portfolio catering to growing medical needs

*Streamlined and prioritised to generate maximum value across the entire spectrum*

	1-2 years			2-3 years	4-5 years
Focus	Niche generics			Novel Drug Delivery Systems	New Chemical Entities
Features	 <p>Difficult to develop Niche</p> <p>High barriers to entry Low competition</p>			 <p>Higher efficacy Lower side-effects Economical</p>	 <p>Breakthrough therapies</p>
Pipeline	<p>US</p> <ul style="list-style-type: none"> <li>• 3 under-review</li> <li>• 23 under development;</li> <li>• 8 are 505(b2) NDAs</li> </ul>	<p>Europe</p> <ul style="list-style-type: none"> <li>• 7</li> </ul>	<p>Emerging Markets</p> <ul style="list-style-type: none"> <li>• 37 dossiers under-review</li> <li>• 25 under development</li> </ul>	<p>Global Markets</p> <ul style="list-style-type: none"> <li>• 8</li> </ul>	<p>Global Markets</p> <ul style="list-style-type: none"> <li>• Best in Class NCE</li> <li>• 1 in Metabolic Disorder</li> </ul>
Presence	<ul style="list-style-type: none"> <li>• 4</li> </ul>	<ul style="list-style-type: none"> <li>• 2</li> </ul>	<ul style="list-style-type: none"> <li>• 25</li> </ul>	<ul style="list-style-type: none"> <li>• 2 platforms</li> </ul>	<ul style="list-style-type: none"> <li>• 1</li> </ul>

## Key vaccines update

Products	Current Stage of Development					Commentary
	Pre-clinical trials	Phase I	Phase II	Phase III	Marketing	
<b>EasySix™</b> Hexavalent Vaccine (DTwP-Hib-HepB-IPV)						<ul style="list-style-type: none"> <li>Launched in India in March 2017</li> <li>Sales of INR 630 million in FY19</li> <li>AIOCD reported growth of 64% YTD November 2019</li> <li><b>Registration in several developing countries has been initiated as part of international penetration</b></li> <li><b>Targeting WHO PQ by early 2022</b></li> </ul>
<b>DengiAll™</b> Dengue Vaccine (Tetravalent Recombinant Chimeric)						<ul style="list-style-type: none"> <li>Technology in-licensed from National Institutes of Health, USA</li> <li>Funding of INR 290mn sanctioned by Technology Development Board</li> <li>Phase I/II studies on-going in Adult and pediatric segment</li> </ul>
<b>NuCoVac™</b> Pneumococcal Conjugate Vaccine						<ul style="list-style-type: none"> <li>Phase I/II studies completed on 10-valent vaccine in Adult and pediatric segment.</li> <li>Phase I/II studies on-going for 11-valent vaccine in pediatric segment.</li> </ul>

# EasySix (DTwP-HepB-Hib-IPV) Hexavalent vaccine in PFS; 1-dose, 4-dose liquid vial

Projected to be a \$1 billion global market<sup>1</sup>

## About EasySix

- World's first fully-liquid wP-IPV based Hexavalent vaccine
- Collaboration strategy for rapid scale-up to increase access to ~80 million babies across the developing world
  - Exploring collaboration with DCVMN members to increase supply security**
- Global demand (Gavi and non-Gavi) expected between 20 to 250 million doses from CY2022<sup>2</sup>


Launched in India  
March 2017




EasySix immunises children against 6 preventable diseases: Diphtheria, Tetanus, Pertussis, Hepatitis B, H. Influenzae Type b, Inactivated Polio Virus.

EasySix has comparable immunogenicity versus DTwP-HepB-Hib and IPV in infant clinical trial.<sup>3</sup>


## Advantages of EasySix adoption



EasySix is 6-in-1 wP-IPV based Hexavalent vaccine for broad and long-term protection.



EasySix exhibited less pain and tenderness, less local and systemic adverse events, hence well tolerated.

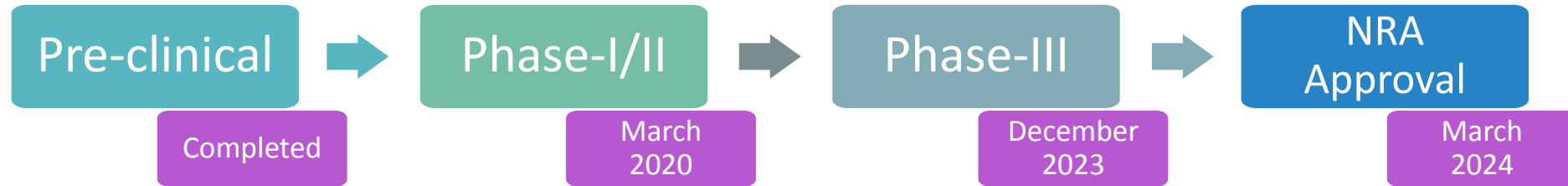


Multiple programmatic benefits for National immunisation programs

1. Data on file. 2. In November 2018, GAVI Board approved the in-principle use of wP-IPV based Hexavalent vaccine for adoption in Gavi-supported countries. Hexavalent forecast as per UNICEF Industry Consultation in September and November 2019. 3. [PUBLICATION LINK](#).

# Candidate recombinant Dengue vaccine; live attenuated in 1-dose and 4-dose lyophilized vial

Dengue vaccine market is expected to be a \$1.5 billion market by 2024



## About the vaccine

- Candidate Dengue vaccine is being developed in collaboration with National Institute of Health (NIH), USA
- **It is expected to be single-dose vaccine with protection for 2-60 year age-group; formulation is stable up to 36 months**
- Safe, Balanced and Robust immune response (against all 4 serotypes) has been established by NIH in their clinical studies.
- Targeting 80% of the global population at risk of Dengue.

## Clinical update

- **NIH trials have shown the Vaccine to be safe with balanced and robust immune response against 4 serotypes (~ 90% sero-protection across all serotypes).**

**DengiAll**  
Live Well, Live Longer



\*Brand names and trademarks are for the Indian market and may vary market to market.

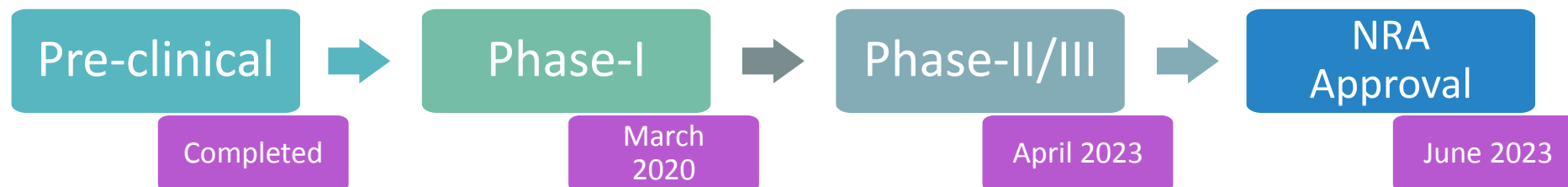
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# Pneumococcal conjugate vaccine, 11-valent in PFS; 1-dose, 4-dose liquid vial

*Projected to be a \$495 million market from 2018 in Gavi-supported developing countries<sup>1</sup>*



## About the vaccine

- A vaccine that provides protection against 11 serotypes. It is a conjugate vaccine with CRM197 as protein carrier.
- NuCoVac-11 covers >72% of “Invasive pneumococcal disease” causing serotypes in India.

## Clinical update

- Phase-I Clinical trial in Toddlers:
  - Immunization completed
  - Immunogenicity analysis to be completed by March 2020

**NuCoVac-11**  
Live Well, Live Longer

\*Brand names and trademarks are for the Indian market and may vary market to market. 1. UNICEF Supply Division PCV Supply and Demand Update December 2018.

## Key alliances to co-develop and co-market high-quality products



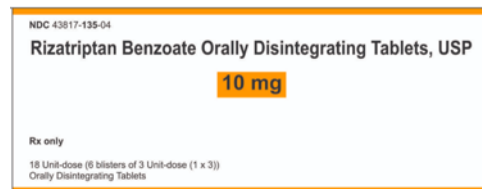
Research, development, license and supply of drug delivery-based generic products in the US, Canada, Australia and New Zealand. Products include: Nab-Paclitaxel, Prasugrel.



Collaboration to market generic Tacrolimus and Rizatriptan Benzoate Tablets in the US. Collaboration expanded for co-development, co-marketing of 7 complex generics in the US.



Collaboration for Azacitidine in US.





Our collaborative approach has increased access to Innovative, Cost Effective, and Quality vaccines for over 90% of the global population



### Serum Institute of India

Strategic collaboration for Hexavalent vaccines for introduction in national immunization programs in developing countries.



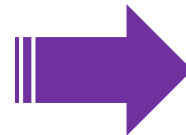
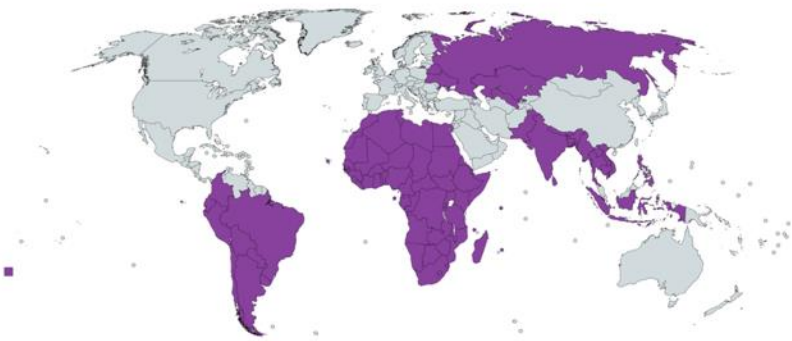
### Intravacc, The Netherlands

Technology transfer for Sabin Inactivated Polio Vaccine (sIPV).



### National Institute of Health, USA (NIH)

Panacea Biotec in-licensed the candidate tetravalent Dengue vaccine for development and commercialization in Asian and African countries.

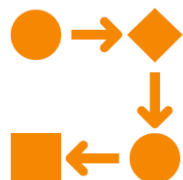


Hexavalent vaccine licensed to accelerate access to ~80 million babies<sup>1</sup> across the developing world.

1. In November 2018, GAVI Board approved the in-principle use of wP-IPV based Hexavalent vaccine for adoption in Gavi-supported countries.



# We make molecules into medicines in state-of-the-art cGMP-compliant pharmaceutical manufacturing facilities



## Diverse pharmaceutical manufacturing

- Flexible approaches to optimize speed and cost
- Integrated manufacturing and packaging lines for fast turnaround time



## Strong ability to scale and commercialise

- Formulation and process development optimization for cost and quality
- Proven technology transfer experience
- Scalability to commercial manufacturing
- Ability to quickly increase capacity



## cGMP compliances

- US FDA, MCC, Saudi FDA, ANVISA certifications for Pharmaceutical facility
- US FDA certification for Oncology facility



## Soft gelatine and hard gelatine capsules

- Softgel encapsulation technology in potent molecules and complex formulations (delayed, bi-layered)



## Sterile, cytotoxic

- Liquid filled vials
- Lyophilized vials



## Oral solids

- Controlled release, tablets in capsules, coated multi-particulate formulations



## Topical

- Gels
- Creams



## Liquids

- Solutions
- Suspensions

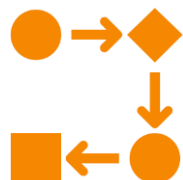


Oncology facility, Baddi, Himachal Pradesh



Pharmaceutical facility, Baddi, Himachal Pradesh

# Our cGMP Vaccine manufacturing facilities are augmented by technological prowess to commercially scale and sustain complex manufacturing processes



## Integrated vaccine manufacturing

- From drug substance to fill-and-finish
- Flexible approaches to maximize speed and optimize cost
- Backend integrated with dedicated drug substance manufacturing facilities



## Strong ability to scale-up and commercialise

- Formulation and process development optimization for quality and cost
- Proven technology transfer experience
- Scalability to commercial manufacturing; from 10L to 1000L



## cGMP compliance

- WHO PQ
- Indian NRA - CDSCO



## Drug substance

- 10 to 1000L for bacterial vaccines and recombinant proteins
- 5 to 1500L for Mammalian cell-culture products including viral vaccines



## Broad range of sterile dosage forms

- Liquid filled vials
- Lyophilized vials
- Pre-filled syringes



Drug substance facility, Lalru, Punjab



Drug product facility, Baddi, Himachal Pradesh

## Global pharmaceutical pipeline targets a potential market of \$2 billion by 2024

	POC	Exhibit Batches	Clinical Studies/BE	Filing
2019	Mycophenolate Mofetil powder	Sirolimus Solution		Cyclosporine Capsules
	Valgancyclovir Liquid	Valgancyclovir Liquid		PacliALL (CRL)
	Doxorubicin Liposomal			
	Mycophenolate DR			
	Cabazitaxel Injection			
	Tacrolimus Ointment			
2020	Tacrolimus ER	Mycophenolate Mofetil powder	Mycophenolate Mofetil powder	Mycophenolate Mofetil powder
	Bortezomib Inj	Doxorubicin Liposomal	Doxorubicin Liposomal	Sirolimus Solution
	Docetaxel Liquid Inj	Mycophenolate DR	Mycophenolate DR	Mycophenolate DR
	Valganciclovir Tablet	Tacrolimus ER	Tacrolimus ER	Valgancyclovir Liquid
	Cycloserine Capsule	Cabazitaxel Injection		Cabazitaxel Injection
	Everolimus Tablet	Tacrolimus Ointment		
2021		Bortezomib Inj		Doxorubicin Liposomal
		Docetaxel Liquid Inj		Tacrolimus ER
		Valganciclovir Tablet	Valganciclovir Tablet	Bortezomib Inj
		Cycloserine Capsule	Cycloserine Capsule	Docetaxel Liquid Inj
		Everolimus Tablet	Everolimus Tablet	Valganciclovir Tablet
			Tacrolimus Ointment	Cycloserine Capsule
				Tacrolimus Ointment

## Pharmaceutical pipeline to provide thrust to our India business

	Formulation development	POC	Clinical Studies	Launch
2019		Tacrolimus ER	WillGo ointment	Vildagliptin
		Sitcom LD cream	Willgo ointment combination	Vildagliptin + Metformin
		Tofacitanib	Penicillamine suspension	Mycophenolate Mofetil powder
			Vitamin D 240K	Pantaprozole
2020			Sitcom LD cream	Tacrolimus ER
			Glizid MV	Sitcom LD cream
				Tofacitanib
				WillGo ointment
				Penicillamine suspension
				Vitamin D 240K
2021				Glizid MV

## RoW business is poised for growth with a differentiated, branded pipeline

	POC	Exhibit Batches	Clinical Studies/BE	Filing
2019	Mycophenolate Mofetil powder for Suspension	Valganciclovir powder for Solution	Everolimus Tablets	Azacitidine for Injection
	Doxorubicin Liposomal Inj.	Sirolimus Solution	Mycophenolic Acid DR	Mycophenolic Acid DR
	Vildagliptin	Vildagliptin	Vildagliptin	Oxaliplatin for Injection
	Vildagliptin & Metformin	Vildagliptin & Metformin	Vildagliptin & Metformin	
2020	Tacrolimus ER Capsules	Tacrolimus ER Capsules	Tacrolimus ER Capsules	Valganciclovir powder for Solution
		Doxorubicin Liposomal Inj	Doxorubicin Liposomal Inj	Sirolimus Solution
		Mycophenolate Mofetil powder for Suspension	Mycophenolate Mofetil powder for Suspension	Mycophenolate Mofetil powder for Suspension
				Vildagliptin Tablet
				Vildagliptin + Metformin Tablet
				Everolimus Tablets
2021				Pemetrexed for Injection
				Doxorubicin Liposomal Inj
				Tacrolimus ER

## Our goal is sustainable growth

*FY19 and H1 FY20; all figures in INR millions*

### Sales

2410 million in H1 FY20  
+13% growth over H1 FY19

### EBITDA

416 million in H1 FY20  
+245% growth over H1  
FY19







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Thank you