



Biological E. Limited
Celebrating Life Every Day





Vision, Mission and Values

Vision

Be a global, market-leading provider of complex generic and specialty pharmaceutical products by 2020.

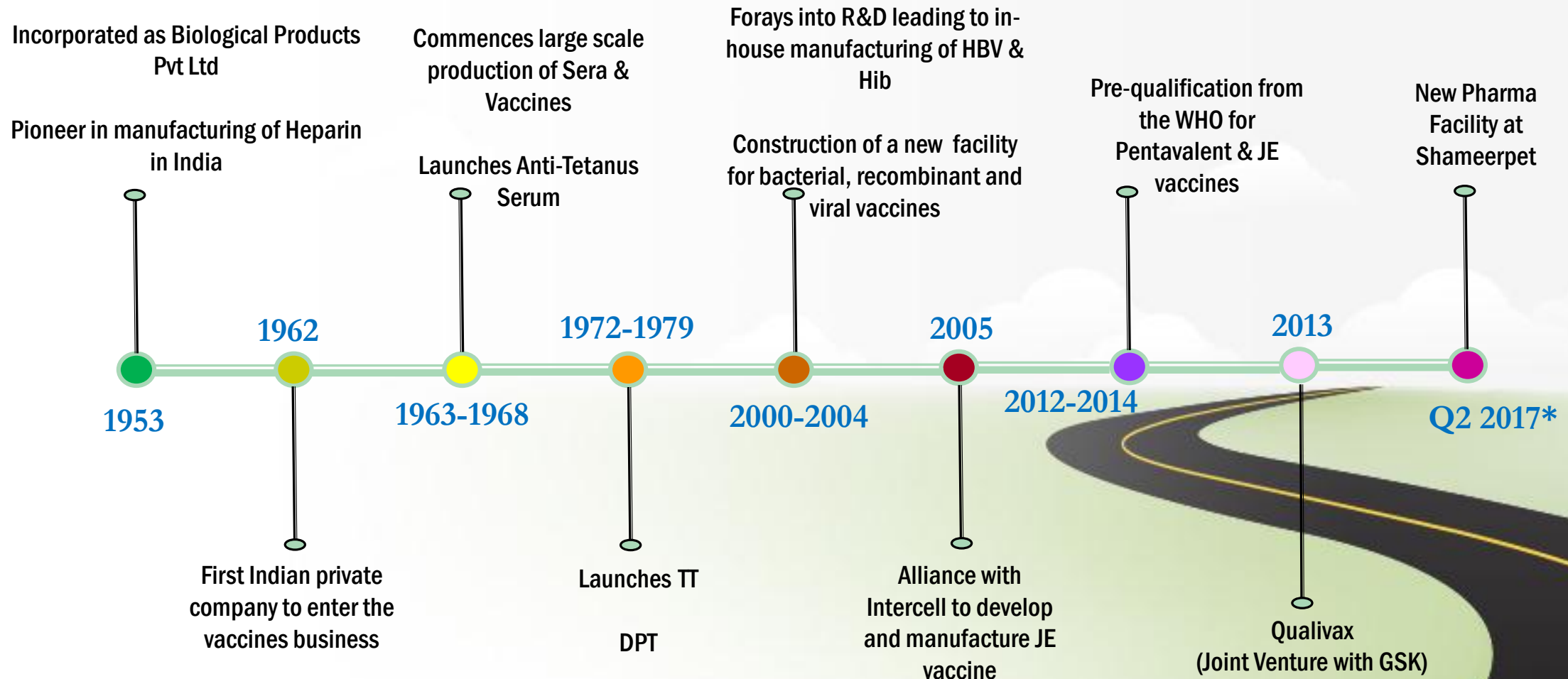
Mission

Improve health & survival of people and contribute to the societies we serve by providing equitable access to quality vaccines and therapeutics.

Values

Quality | Safety | Customer Focus | Innovation
Efficiency | Integrity | Transparency | Teamwork

Milestones



Business Divisions

- Pharmaceuticals
- Vaccines & Biologics



Pharma Division

Pharma -Manufacturing Facilities

- ❑ Azamabad
- ❑ Patancheru
- ❑ Dehradun
- ❑ Shameerpet**

** Operational in Q2 2017

Pharma - Product Portfolio

In India, the company markets products such as

- Polyvalent Snake Antivenom
- Heparin
- Cough & cold medications
- Nutraceuticals
- GI medicines



Pharma - Product Pipeline

- ❑ Complex generics
 - Low molecular weight heparins
 - Long-acting injectables

- ❑ Regular injectables
 - Liquid
 - Lyophilized

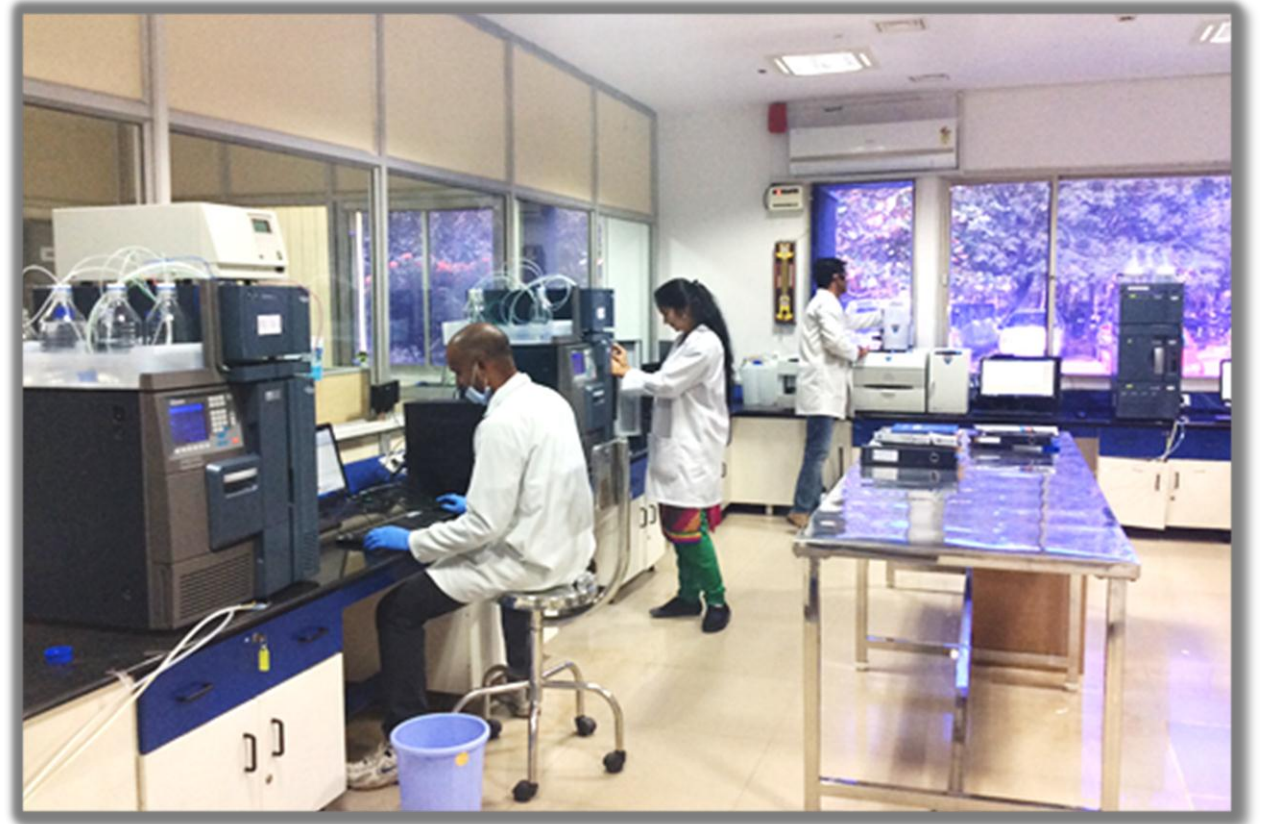


Pharma - Product Pipeline**

API's	Injectable Formulations	
Noscapine	Heparin Inj	Neostigmine Inj
Noscapine Hcl	Enoxaparin PFS	Fosaprepitant Inj
Enoxaparin	Dalteparin PFS	Sodium Nitroprusside Inj
Dalteparin	Daptomycin Inj	Risperidone Inj
	Glycopyrrolate Inj	Paliperidone Palmitate Inj

Pharma R&D

- ❑ R&D infrastructure at IKP Knowledge Park, Shameerpet
 - Chemical R&D
 - Formulations R&D
 - Analytical R&D
- ❑ About 65 people across functions



Formulations R&D Lab, IKP Shameerpet

Pharma - Chemical R&D

- ❑ Lab Space: 4,500 Sft.
- ❑ Team Size: 14 (Ph.D.'s: 5 and Master's: 9)
- ❑ Areas of Expertise:
 - Synthetic organic chemistry
 - Low molecular weight heparins
 - Polysaccharide synthesis
 - Synthesis and development of small molecules
 - Synthesis of chiral compounds including peptides
 - Isolation of natural products
- ❑ Current R&D Focus: Process development of low molecular weight heparins and Noscapine HCl



Chemical R&D Lab, IKP Shameerpet

Pharma - Formulations R&D

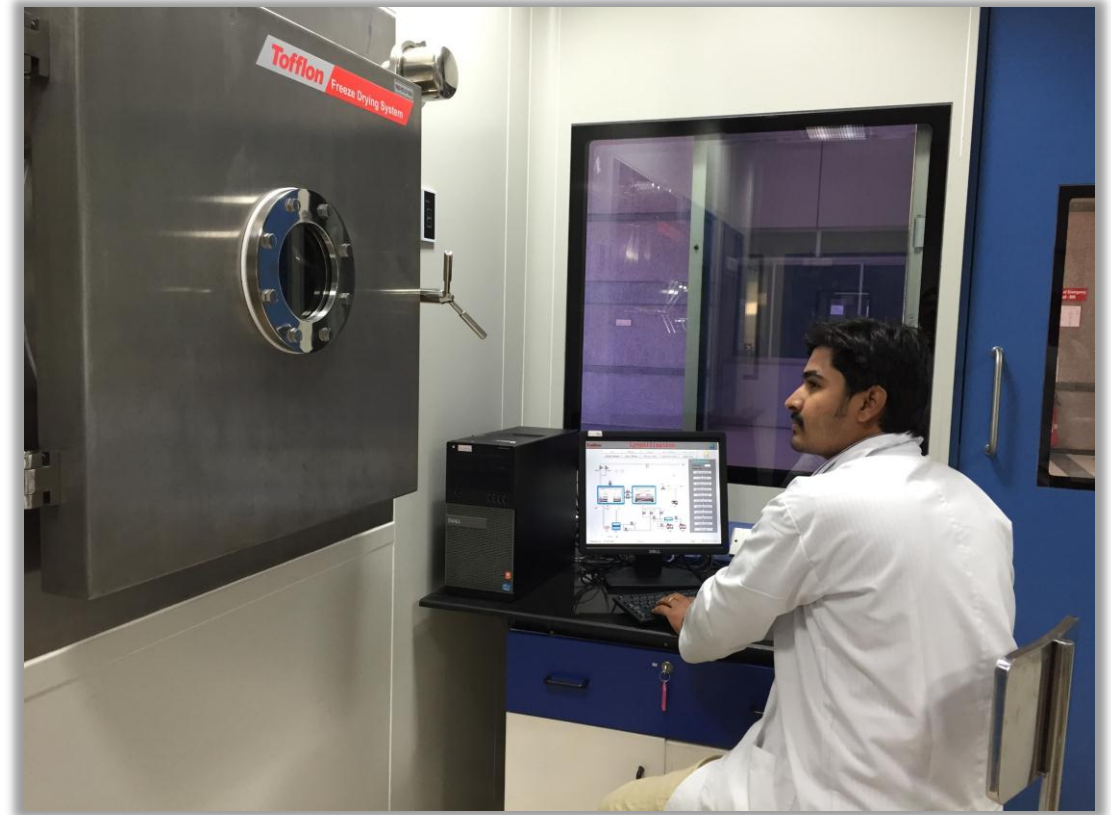
- ❑ Lab Space: 4,500 Sft.
- ❑ Team Size: 24 (MPharm: 14 and M.Sc.: 10)
- ❑ Areas of Expertise:
 - Liquid & lyophilized injectables
 - Complex generics
 - Solid orals: tablets, capsules (hard & soft gelatin)
 - Extended and delayed release formulations
 - Oral liquids & suspensions
- Analytical method development for formulation
- Reverse engineering and characterization of reference products
- Pre-formulation studies
- Stability studies as per ICH
- Method validation

Pharma - Formulations R&D

□ Current R&D Focus:

Development of

- Heparin / low molecular weight heparins
- Long-acting microspheres & nano suspension
- Lyophilized and liquid injectables



Pharma – New API Facility

- New API plant located at Shameerpet, Hyderabad, India
 - Primary market focus: regulated markets
 - About 70,000 Sft.
 - Non-Sterile
 - About 90 people when fully operational

- API's (estimated production capacity)
 - Enoxaparin Sodium (6,000 Kg)
 - Noscapine (30,000 Kg)
 - Noscapine Hydrochloride (4,000 Kg)
 - Heparin Sodium (16,500 Kg)**

**Future module

Pharma – New Formulations Facility

- New formulations plant being built in Shameerpet, Hyderabad
 - Primary market focus: regulated markets
 - About 99,000 Sft.
 - Sterile, liquid filling facility
 - About 270 people when fully operational

- Production Capacity
 - Vials
 - Steriline: 240 Vials/Minute
 - PFS
 - Steriline 140 PFS/Minute
 - Bosch 240 PFS/Minute
 - Lyophilizer
 - Truiking Lyophylizer with ALUS (20 Sq. Mtr. 440 Kg)

Key highlights for Partnering with BE

- Experienced team committed for R&D, Quality, Regulatory, Engineering and Production departments.
- Development of Formulations as per QbD approach and Specific Market requirements
- Long-term relationships with business partners
- Quality products at highly competitive edge/cost

Collaborations* (Vaccines)



Thank you..

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