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Road Map to Future Vaccines
Session 1
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Learning Agenda: From COVID to other vaccines

- Experience and expertise gained in fast track product development, scale up, large scale distribution,
  - Could be applied to other vaccines, based on appropriate conditions,
- Aggressive product development funding, purchase commitments, etc should be emulated for other high risk vaccines,
- If carefully determined; excess manufacturing capabilities could be repurposed and deployed for other high demand vaccines,
- Platform technologies could be deployed for other targets,
• Variance in ability of vaccine companies to develop, manufacture COVID vaccines,

• ~ > 5% of companies were able to innovate, develop or manufacture vaccines for COVID,

• Most of the companies that were able to respond to the pandemic were able to do so, based on decades of expertise in ..... 
  • R&D / Innovation capabilities,
  • Manufacturing platform technologies,
  • Product development expertise,
  • Large scale manufacturing expertise
  • Etc..
COVID Vaccines: Bharat Biotech Experience

Platform Technologies

- **Flu Vector**: Pre Clinical
- **Rabies Vector**: Pre Clinical
- **ChAd Vector**: Pre Clinical, Phase I, II, III, EUL
- **Inactivated**: Pre Clinical, Phase I, II, III, EUL, Variants
COVID Vaccines: Experience

- Globally > 15 billion doses manufactured
- > 20 EUL / EUA / Licensed vaccines

- Unprecedented
  - Risk
  - Investments
  - Product development speed
  - Fast Track regulatory approvals
  - Advance procurement commitments
  - Product development funding

- Bharat Biotech: Experience
  - Fast Track regulatory approvals
  - No development funding or advance procurement commitments
  - All initial investments from internal resources
Future Challenges for Vx manufacturers

• Maintenance and Management of expanded manufacturing base

• Losses due to Over stocks of raw materials, packing materials, consumables etc, due to expiry prior to use

• Destruction of expired vaccines, losses to vaccine manufacturers

• Delayed development of other vaccine candidates

• Sudden increase in post pandemic demand for other vaccines resulting in supply shortages

• Lack of ready availability of raw materials, packing materials, consumables etc,
Bharat Biotech: Experience

- Technology / Expertise
  - Algel + IMDG novel Adjuvant
  - Scale up expertise of inactivated vaccines, ~ 100 million doses / month

- Losses
  - Unused / Expired stocks of DS and DP,
  - Unused / Expired stock of RM, PM and consumables,

- Technology / Expertise
  - Intranasal delivery platform
  - Platform technology for other targets

- No demand / No return on investments
THANK YOU