



Discussion Topics

- The evolution of R&D in the pharmaceutical industry
- Current and future roles for scientists in pharma R&D

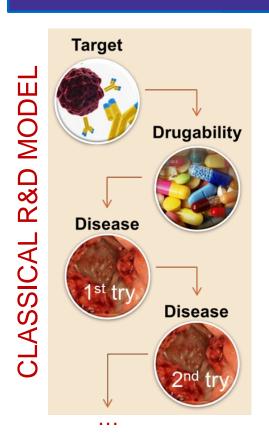




before 2011

2011-2015

2016-2020

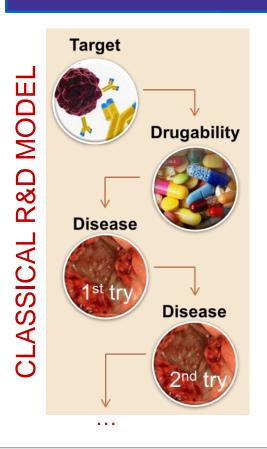


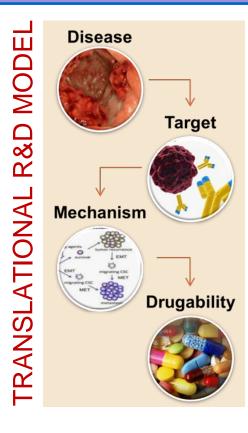


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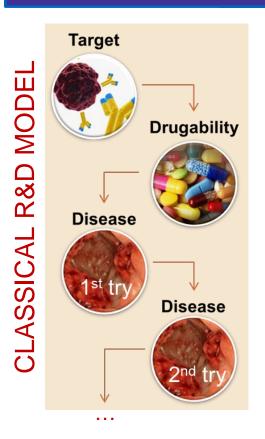


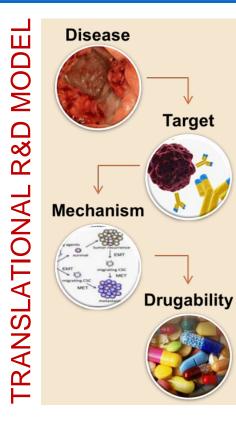


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Developmentto-Research Strategy

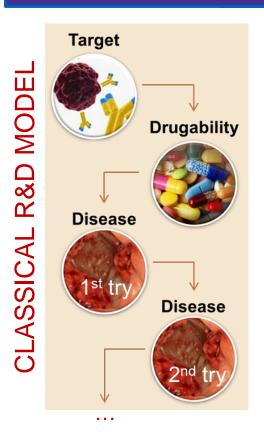
- Created a robust launch pipeline
- Relied on external heavily
- Increased flexibility
- Developed biologics

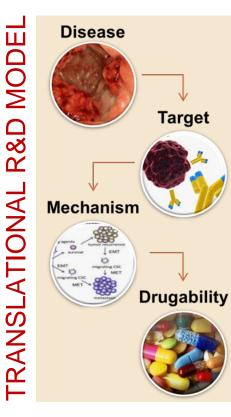


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Developmentto-Research Strategy

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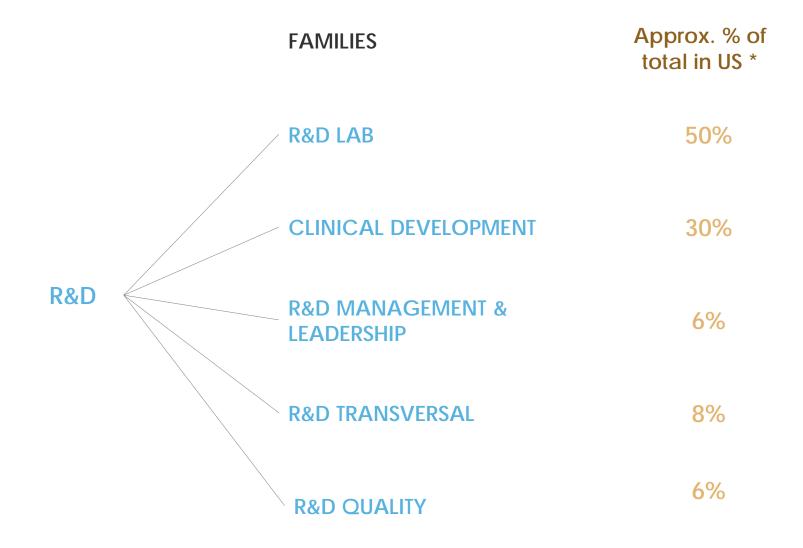
Strengthen Research Productivity

- Rebalance portfolio to at least two thirds internal
- Multi-targeting approach
- Strengthen excellence
- Leverage digital

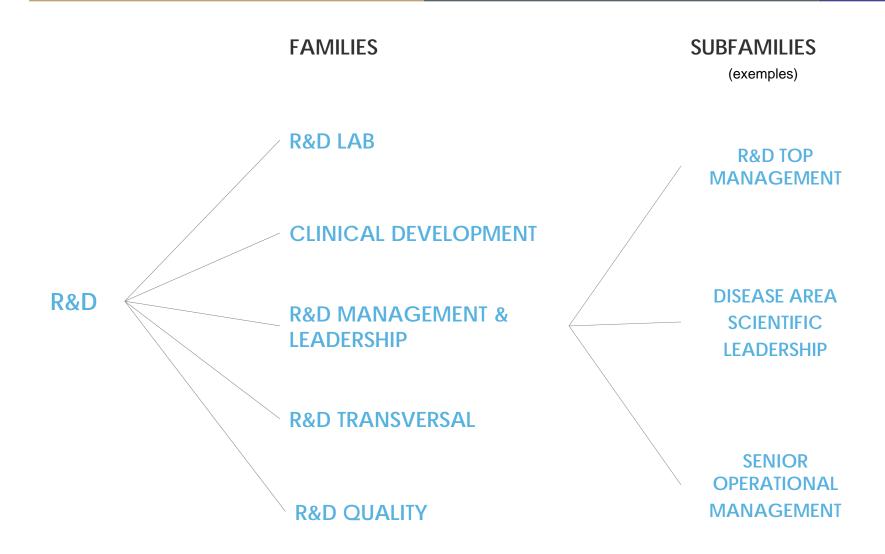




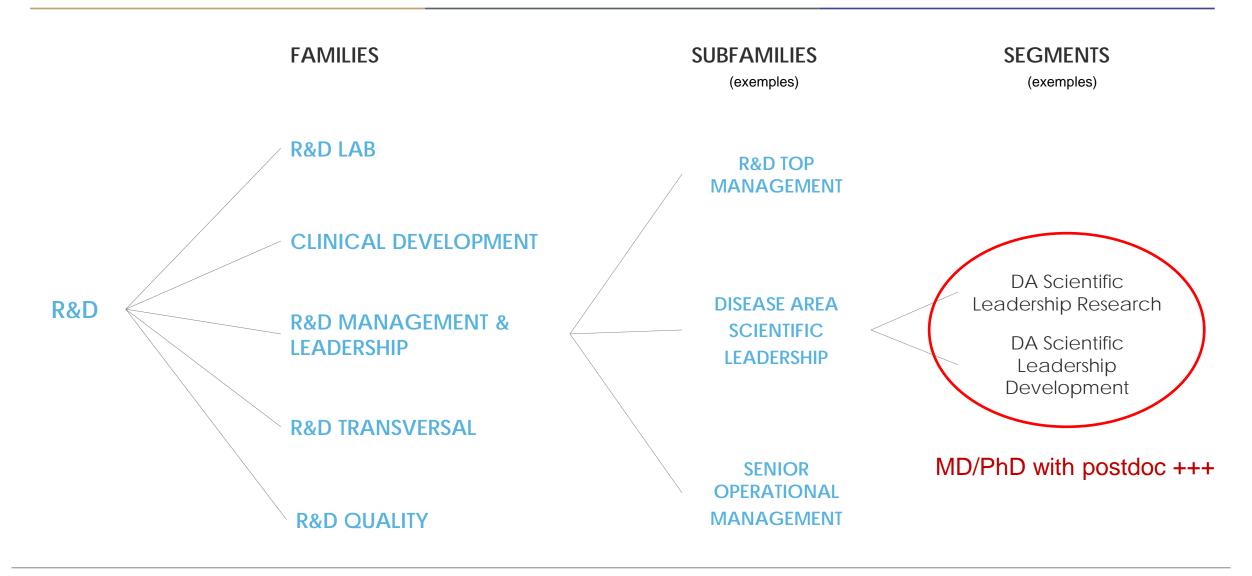














Most needed skills across R&D

	R&D Lab	Clinical Development	R&D Transversal	R&D Top Management & Scientific Leadership
Transversal Scientific & Technical Skills	Data Science, Artificial Intelligence & Machine learning Immunology Biologics experience Translational Medicine			
Transversal Soft & Behavioral Skills	Leadership Collaborative mindset Transparency, Knowledge sharing, Communication			
Family Specific Skills	In silico modeling Protein engineering Devices and delivery Analytical development Biomarkers	1	Project management	Scientific leadership Alliance management Networking
% PhD among expected new recruits (approx.)	40%	20%	10%	100%



Other considerations

- Some areas particularly rich in PhDs (>50%):
 - Translational science
 - Pharmacokinetics and drug metabolism
 - Pharmaceutical development
 - Biostatistics
- Postdoctoral training is generally considered as a plus
- Experience is key. Many Pharma have strong training programs
- Internal postdoctoral programs
- Opportunity to move from Pharma to Pharma is significant, and rewarding



