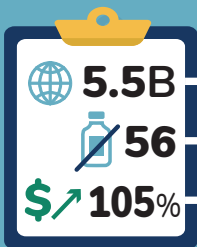
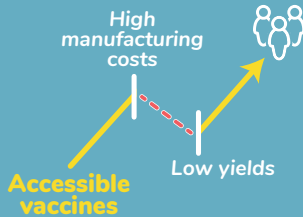


Sustainability and Savings in Vaccine Manufacturing: A Bioprocess Modelling Case Study

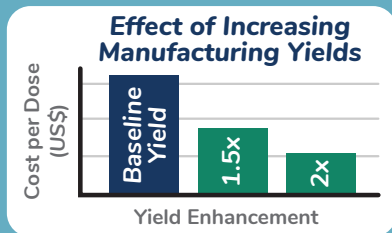
According to the 2020 WHO Vaccine Market Report:



- Global vaccine dose demand
- Countries with vaccine shortages
- 5-year increase in price of select vaccines



Virica uses **BioSolve Process 8.3** to model vaccine manufacturing processes



A 1.5-fold increase in yield decreases cost per dose by **33%**!

Case Study: Upstream Vaccine Production

- 1 Model upstream vaccine production process
- 2 Set a target demand of vaccine doses per year
- 3 Increase upstream yield by multi-fold



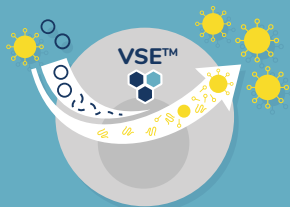
Case Study Results	Baseline process	Multi-fold enhancement		
		Case A	Case B	Case C
Upstream Cost/Dose (USD)	\$8.39	\$5.60	\$4.54	\$3.65
Annual Batch Cost Savings	0%	33%	46%	57%
Annual Plastics Waste (kg)	124	83	67	54

Optimizing your process leads to:



VSE™ Technology Reduces Upstream Vaccine Manufacturing Costs

- Virica's Viral Sensitizer technology (VSEs™) are small molecules that boost upstream viral yields by curbing antiviral defences
- VSEs™ boost manufacturing yields across a wide range of substrates and cell lines



For more information, please contact us at info@viricabiotech.com

