Novel Manufacturing Substrates

- **Product target requires novel manufacturing strategy**
  - Complementing cell line, e.g. replication defective viral vaccine
  - Human glycosylation (yeast)

- **Improved product quality, logistics/process, and supply; reduced COGS**
  - Tissue based vaccines → cell culture or recombinant
  - Challenges: capital costs, regulatory path, marketing advantage

- **Special considerations**
  - Emerging disease/pandemic readiness
  - Global access
  - Low cost vaccines for industrializing countries