BVNL OVERVIEW:

mRNA Meeting
April 17-21, 2023
“Vaccines are the tugboats of preventive health” - William Foege

- Introduction of BVNL
- BVNL Overarching Strategy
- BVNL Capacity
- MRNA Vaccine Manufacturing
- Nigeria Ecosystem
- Afrigen Training...

www.biovaccinesnig.com
Introduction to Biovaccines Nigeria Limited (BVNL)
A Synergistic Partnership Between Private and Public Sector

✓ One of the oldest pharmaceutical companies in Nigeria.
✓ M&B is amongst the top pharmaceutical companies in Nigeria.

✓ Most populous country in Africa. 3rd largest youth population in the world.
✓ Nigeria's economy is the largest in Africa.
✓ Phased GAVI graduation begins in 2021.

Mandate for long term procurement of vaccines and stage-wise indigenous manufacturing of vaccines.
Established: 2005
JVC: FGN & MBN
SPV to revive LVM in Nigeria
Board Re-inauguration: Jan 19, 2018
Head Office: 445 Herbert Macaulay Way, Yaba, Lagos State
Factory: Otta, Ogun State
Support in Achieving GVAP Goals in Nigeria & the Region

1. Infrastructure for Capacity building for Local manufacturing of Essential vaccines
2. Infrastructure for Development of Novel vaccines critical for the region
3. Institution to support in enhancing awareness and Coverage of EPI vaccines in Nigeria
4. Support in setting up an NCL and strengthening the NRA to make it fully functional
5. Forum to nurture and develop local technical talent to support the capacity building initiative
A tunnel concept based, fully integrated Vial filling line which does, Washing, drying sterilization, cooling, filling, stoppering and capping.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Capacity Calculations</th>
<th>Absolute vials</th>
<th>Million vials</th>
<th>Single Dose/ vial (0.5 ml/dose) + appropriate overfill</th>
<th>5 Dose / vial (0.5 ml/dose) + appropriate overfill</th>
<th>10 dose / vial (0.5 ml/dose) + appropriate overfill</th>
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<tbody>
<tr>
<td>1</td>
<td>Machine Capacity vials/minute</td>
<td>300</td>
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<tr>
<td>2</td>
<td>Machine Capacity vials/hour</td>
<td>18,000</td>
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<td>3</td>
<td>Machine Capacity vials/day/shift (5 hours fill time)</td>
<td>90,000</td>
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<td>a</td>
<td>Annual Capacity @260 days on single shift/day</td>
<td>2,34,00,000</td>
<td>23</td>
<td>23</td>
<td>117</td>
<td>230</td>
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<td>b</td>
<td>Annual Capacity @260 days on double shifts/day</td>
<td>4,68,00,000</td>
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<td>47</td>
<td>234</td>
<td>470</td>
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<tr>
<td>c</td>
<td>Annual Capacity @260 days on three shifts/day</td>
<td>7,02,00,000</td>
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<td>70</td>
<td>351</td>
<td>700</td>
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</table>
# Intended Application of the mRNA Tech

## Dx Focus
- Expanding COVID-19, HIV
- Outbreak/ EID
  - Ebola, Chikunguya, RVF, Lassa, Dx X

## Approach
- mRNA facility Integrated into Existing Manufacturing (Option 2)
- mRNA Research Labs (Option 1)

## Partners
- NIMR
- NIPRD
- NVRI
- FMoH
- NAFDAC
Project Milestones

- **2020**: Bidding, Awards and Engineering
- **2022**: Facility Erection; Equipment Procurement
- **2023**: Installation, Commissioning & Validation
- **2024**: Manufacture Vaccine Locally
- **2028...**: Indigenous Bulk Manufacturing

**Supply**: Finished Product (CMO-Optional)

**Supply of Locally Manufactured & Formulated Vaccines**
**Nigerian Vaccine Manufacturing Ecosystem**

**History of Vaccine Manufacturing:**
- Animal (Bacterial & Viral) for over 75+ years
- Human (Small Pox, Rabies,)

**Regulatory Strengthening (NAFDAC):**
- WHO Global Benchmarking; Level 3
- ISO 9004
- Ongoing of a new NAFDAC vaccine Lab
- >45 Lot release certificates issued for Covid-19 vaccines

**Scientists: Virologist & Vaccinologists:**
- Usman Danfodio University (UDUS), Sokoto
- National Institute of Medical Research (NIMR)
- Nigeria Institute of Pharmaceutical Research & Development (NIPRD)
- Irrua Specialist Teaching Hospital (ISTH), Edo
- African Centre of Excellence for Genomics of Infectious Diseases (ACEGID), Osun

**WHO GBT Performance Maturity Levels**

**Efforts; parallel and aligned**
1. Working towards mid May 2023

Nigeria Consortium

Gratitude- Initiative & thought leadership
Conclusion

“Universal health coverage is ultimately a political choice. It is the responsibility of every country and national government to pursue it. It takes vision, courage and long-term thinking”

The above statement credited to Dr Tedros Adhanom Ghebreyesus, DG WHO, aptly applies to local vaccines manufacturing in the LMICs. It is indeed a political choice that can only be exercised by one with a deep love for his country and people.