

Drugs for Africa: Who Controls Access

Dr Bathabile Ramalapa



science & innovation

Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA



SDCfA
Science Diplomacy
Capital for Africa

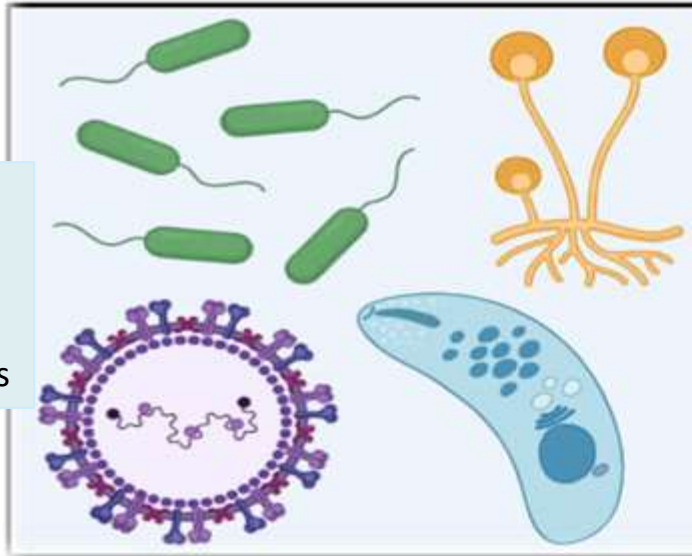


CSIR

Touching lives through innovation

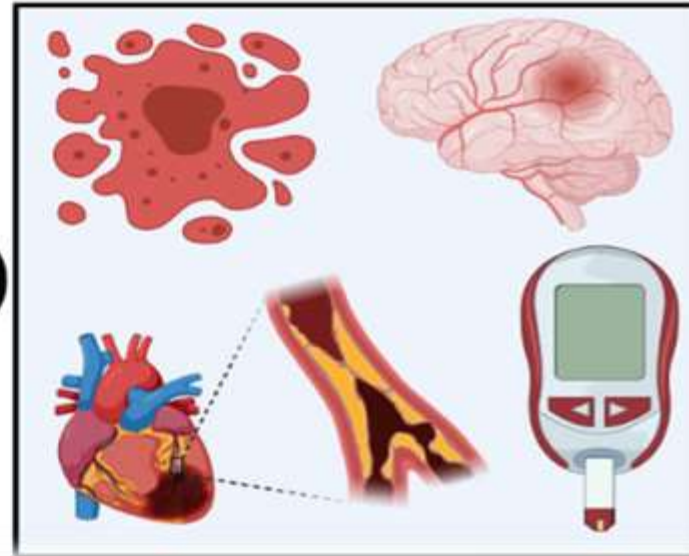
Historical Disease Challenges

Communicable and Non-Communicable Diseases



Prevalence: Africa and the East

VS

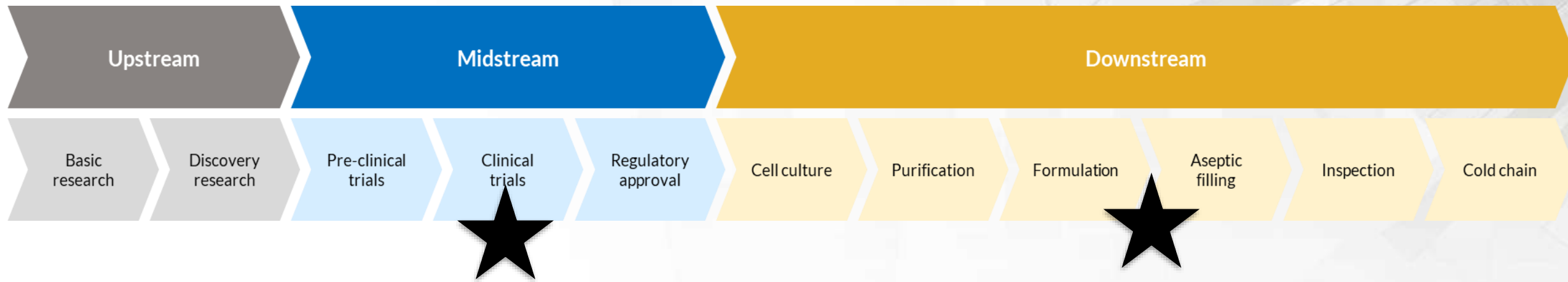


Prevalence: Europe and the North (America)

Tuberculosis
HIV
Malaria
Hepatitis B
Bacterial and viral diseases

Cancer
Diabetes
Kidney and liver diseases
Neurological disorders
Cardiovascular diseases

Global value chain in Pharmaceuticals



- In 2022 South Africa imported 3.3 billion US\$ of pharmaceutical products (UN COMTRADE database)
- Less than 20% domestic spending
- More than 80% of the market imported from United States, India, China, France, Germany, Switzerland
- Imports not only focused on pharmaceuticals – medical devices, healthcare consumables, orthopedics, prosthetics and adaptive equipment, dental, patient aids – 95% of market imported

The pandemic shift

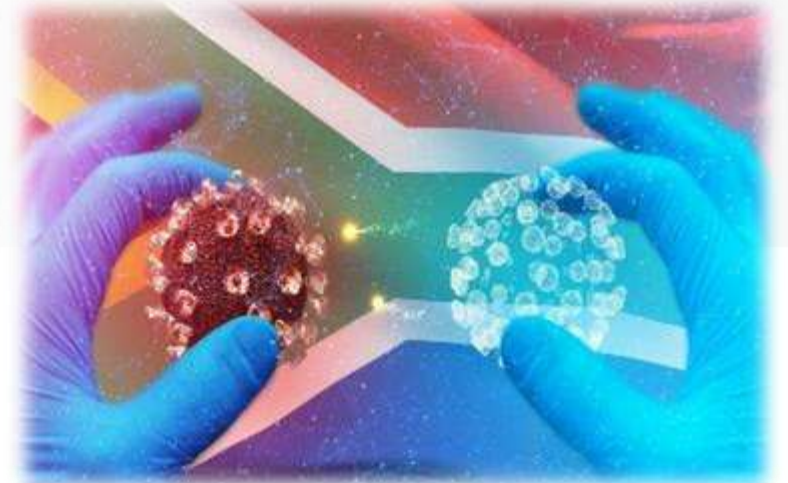
**COVID-19: The First Global
Pandemic of the Information Age**



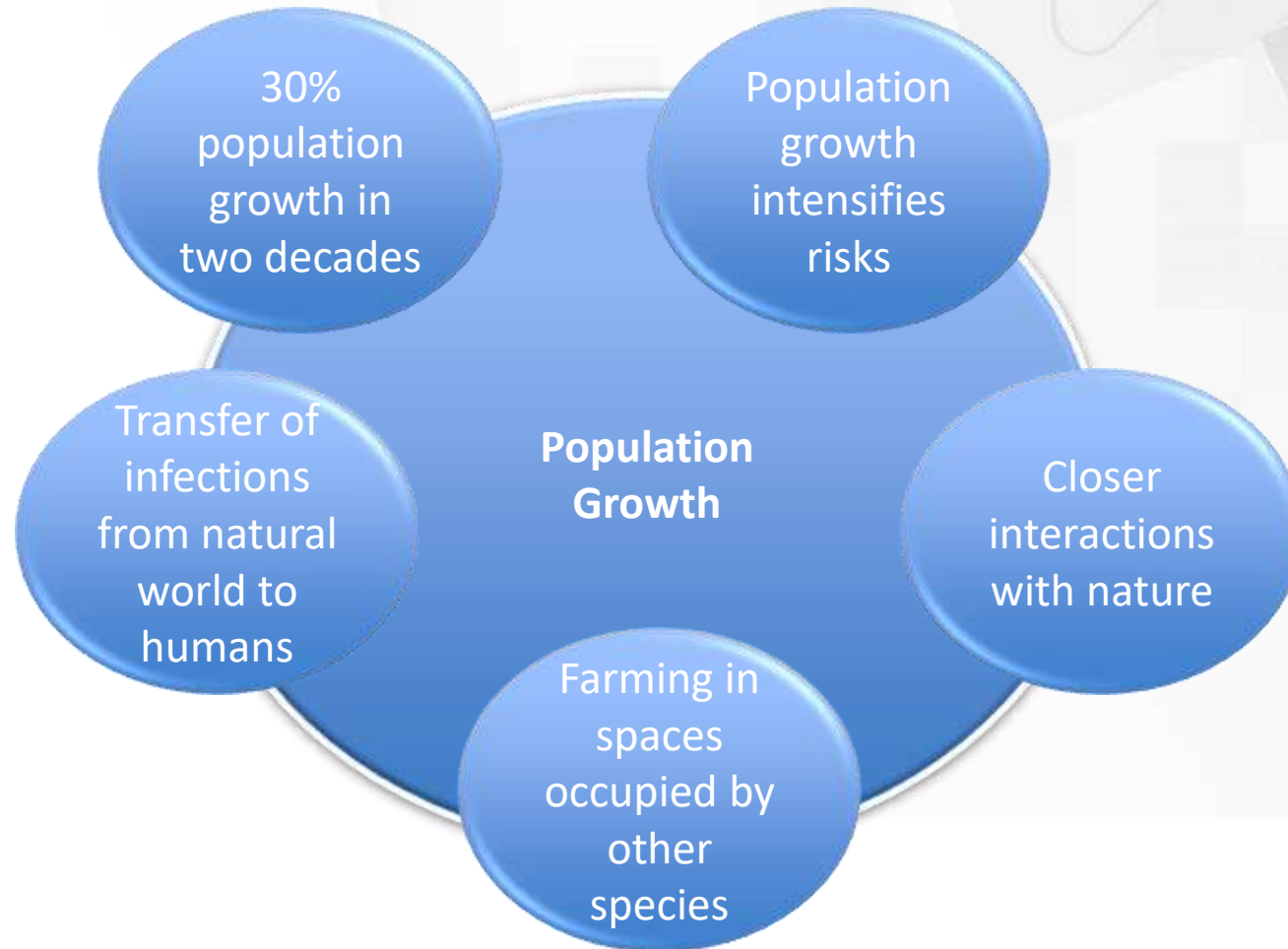
**Global effort: Best Way to Fight
COVID-19 Pandemic**



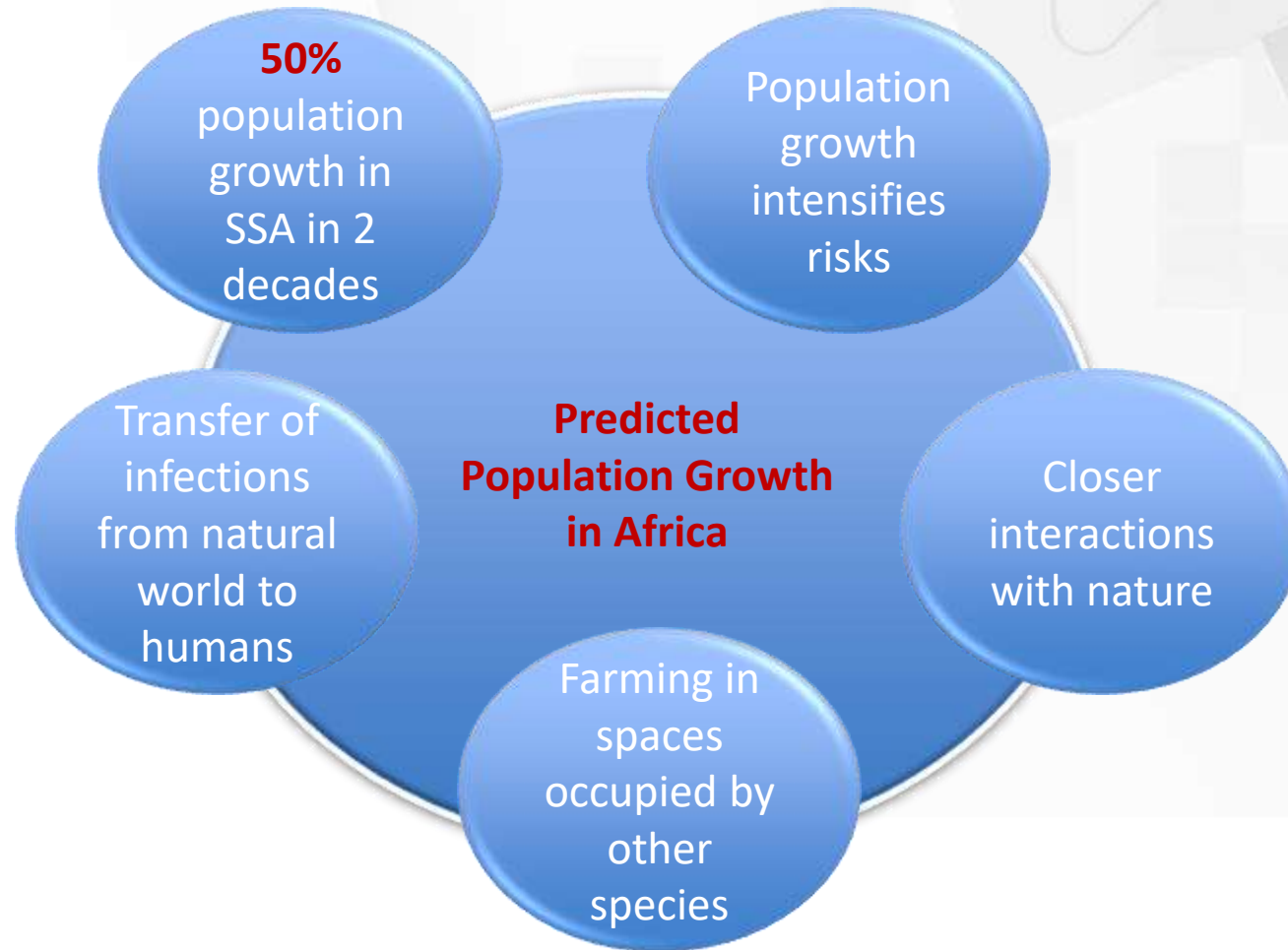
**Local Solutions to COVID-19
Pandemic: Building Capability**



Building capabilities for **pandemic preparedness**



Building capabilities for **pandemic preparedness**



Building capabilities for pandemic preparedness



- Foster collaboration between LMICs for production of mRNA vaccines
- Facilitate technology transfer on the know-how
- Support manufacturers in LMICs to manufacture their own vaccines

mRNA vaccine successfully developed and testing for efficacy at Afrigen

Building capabilities for pandemic preparedness



- South African government to leverage currently existing capabilities in VLP platform to produce vaccine for various targets
- Minister (SI) to convene consortium – science councils, research institutions, university
- Aim: produce 50% of currently imported vaccine locally in the next five years

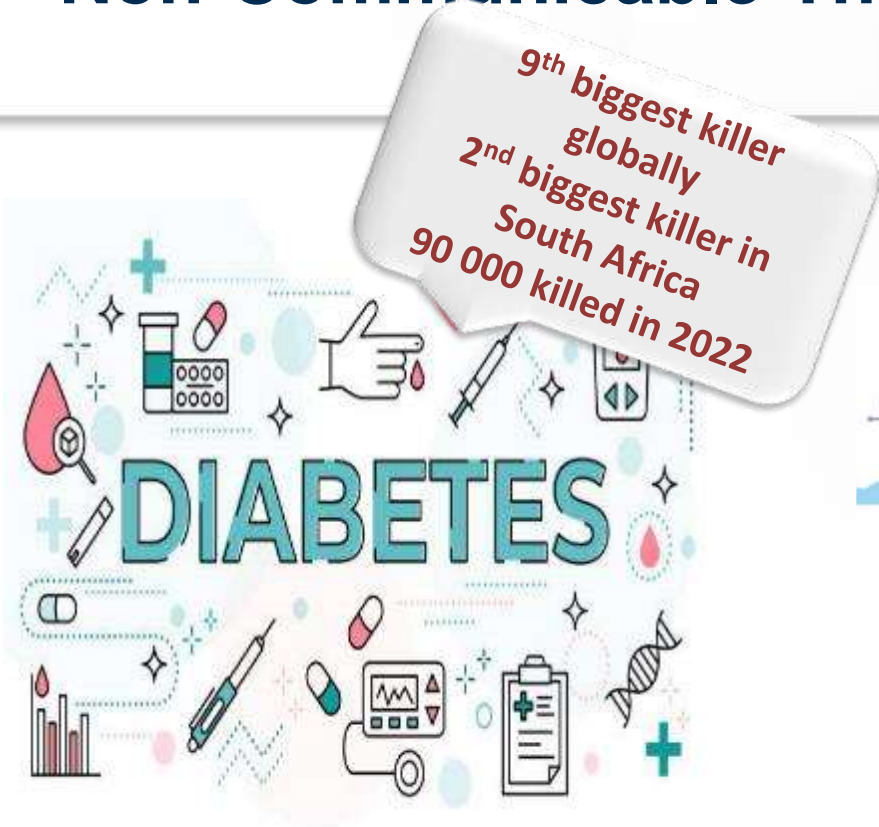
First target : Rift Valley Fever

Regulatory Environment in Africa



- Providing an enabling environment for pharmaceutical innovation
- Empowering the continent – Africa currently has 5 regulatory bodies benchmarked at ML3
- MOU signing between SAHPRA and Egyptian Authority
- Launch of Harmonization Initiative by African Medicine Authority

Non-Communicable Threats in Africa (South Africa)



9th biggest killer globally
2nd biggest killer in South Africa
90 000 killed in 2022

DIABETES

The infographic features the word "DIABETES" in large, bold, teal letters. It is surrounded by various medical icons including a blood drop, a test tube, a syringe, a pill, a DNA helix, a clipboard, a stethoscope, and a bar chart. The background is light blue with decorative elements like stars and dashed lines.



Biggest killer globally
3rd biggest killer in South Africa

HYPERTENSION

The infographic shows a large blue heart with a yellow exclamation mark in the center. A person in a white lab coat is standing on a ladder, looking at the heart. To the right is a blood pressure gauge with a needle pointing to the red zone. Below the heart is a blue first aid kit. The background is light blue with a heart rate line and a checklist icon.



Leading cause of cancer mortality in women
5yr survival rate in SA 42%, in the West, 90%

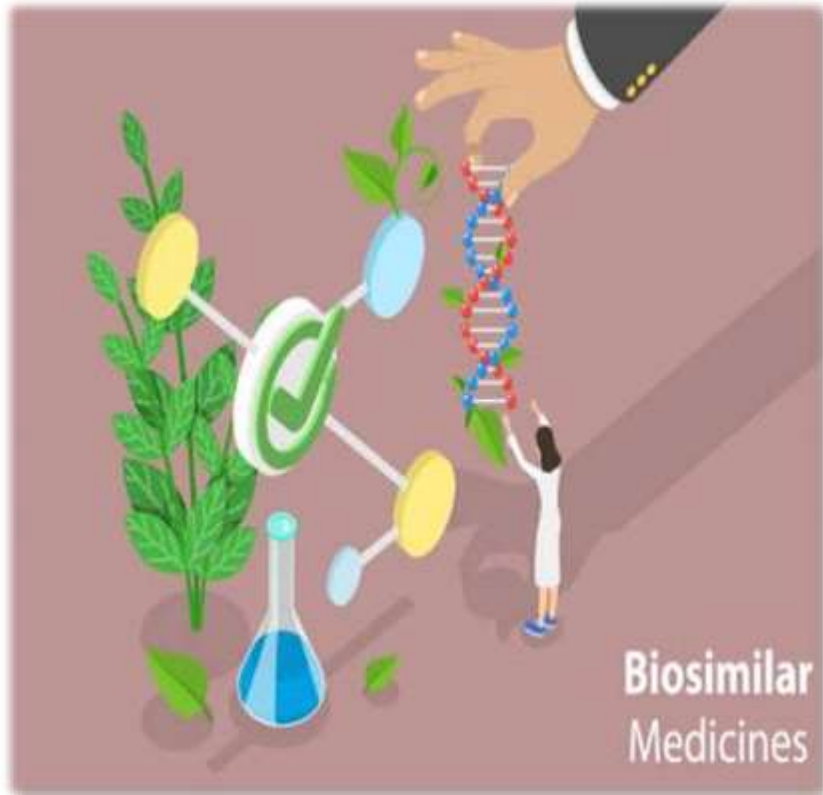
The infographic depicts a large smartphone screen showing a 3D model of a brain tumor and a cross-section of a human torso with internal organs. Two female doctors in white lab coats are standing on either side of the phone. One is holding a laptop, and the other is holding a magnifying glass over the torso image. A clipboard with a checklist and a person icon is also visible on the phone screen.

Challenges in Treatment Management



600k/regimen p.a

Providing Solutions to African problems



Development of biosimilars and generics for off-patent drugs

Use of cost effective and efficient technologies to produce drug treatments

- Plant-based biotherapeutics

More homogenous products, less post-translational modification

Ease of use, higher yields – cost-effective

- Innovative chemical processes – Microtechnology Flow Chemistry

Flow/Continuous drug manufacturing process

Automated system saving 20-30% of manufacturing costs

- Emergent technologies – Drug delivery

Tailor-making of drugs to suit the African environment

Example: Thermostable biotherapeutics

Final Thoughts...

- By 2050 one in every four people in the world will be African
- **Africa needs to be self-sufficient**
- Involve the young population in finding solutions
- Diplomatic relations to guarantee supply chains
- Eventuality: **Increase access to essential medicines** – achieve equity in healthcare

The background is a dark blue gradient with abstract geometric patterns. On the left side, there are several overlapping circles and lines, some in a lighter blue shade, creating a complex, layered effect. The right side is a solid, slightly darker blue.

Thank you