

# New Innovation in Veterinary Care

*Carel du Marchie Sarvaas*  
*HealthforAnimals*





## Poverty

“Without intensified action, global poverty goals will not be met by 2030” – World Bank



## Health

690 million people currently suffer from hunger  
1 in 5 children under 5 suffer from stunting



## Climate

Extreme weather is on the rise  
Farmers are “highly exposed” to climate change – UN



## Production

Global population will rise another 1 billion in the next decade. Increasing the size of current systems to meet future needs is *unsustainable*. Efficiency must rise, waste must fall.

Last year, the United Nations called global progress towards achieving the Sustainable Development goals – “uneven and insufficient.”<sup>1</sup>

*Reversing this trend will require changing practices and embracing new innovation*

<sup>1</sup>UN report finds COVID-19 is reversing decades of progress on poverty, healthcare and education

# Major Innovation Areas

## Dramatically changing veterinary care



### **New Vaccines**

mRNA Vaccines, precision delivery, autogenous, and more



### **Diagnostics**

Artificial intelligence, microfluidics, and more.



### **Alternatives to Antibiotics**

Bacteriophages, Nanotech, immunotherapies and more



### **Parasite Control**

'Green' parasiticides, oral delivery, mRNA and more



### **Digital Technologies**

Sensors, artificial intelligence, prediction tech and more



### **Nutrition**

Novel feeds, probiotics, phytogenics and more.

## Rapid Change with Huge Potential

- **Most Potent Tool Available**

Vaccines remain the *most* potent tool available

- **Advancements in Product and Application**

mRNA Vaccines: As seen in Covid... Vaccines can be produced faster, at lower cost and with fewer risks.

Precision Delivery: Conveyer belts, needleless, oral vaccines and more. Greater simplicity means higher use rates and improved access.

- **Global Rates of Vaccination**

Vaccines remain underutilized in many regions, especially emerging markets

- **Bottom Line**

Advancements in vaccines must be coupled with greater global support for prevention



## A Long-Term Possibility

- **What is an alternative?**

Products that that can target bacteria and cure an infection; Anything else ‘reduces the need.’

- **Examples of ‘true alternatives’**

Bacteriophages: Virus that invades and destroys bacteria; ‘Narrow-spectrum’

Immunotherapies: Direct and harness an animal’s natural defenses to attack an infection.

- **Timeline**

These techniques have been researched for decades, yet products are still many years away

- **Bottom Line**

‘Reducing the need’ for antibiotics still remains our most potent weapon for responsible use and AMR



## Prediction, Monitoring and Diagnostics

- **Data and analytics revolution**

4-5 years of rapid change that is only accelerating

- **Three Key Areas**

Monitoring Tech: Sensors, ear tags, smart collars and more. Provides precision data for informed decisions.

Predictive Tech: A.I.-driven software that compiles data across countless animals and identifies new, early indicators of health changes

Digital Diagnostics: Compiling diagnoses at scale is unlocking the 'preventative power' of this technology.

- **Bottom Line**

One of the fastest growing areas for the Animal Health that allows for not only disease prevention but prediction.



## Rapid Change across Livestock and Pets

- **Underrecognized**

Public policy typically focuses on prevention and treatment, diagnosis is sometimes forgotten.

- **Advancements**

'Pen-side': Rapid diagnostics are becoming more widely available. This means faster, more accurate treatment.

'Prevention Power': Digital tech means diagnoses and health characteristics can be compiled across countless animals and used to identify new risk factors for illness.

Artificial Intelligence: Previous 'manual' analysis by vets (e.g. fecal samples) can now be done by A.I.-driven tools

- **Bottom Line**

Diagnostics is often the 'missing link' between prevention and treatment. Huge potential for greater investment.



## ..And how to address them

- **Infrastructure**

Veterinary access, cold-chain, reliable internet and more.

- **Regulations**

New innovation means systems are not well-adapted

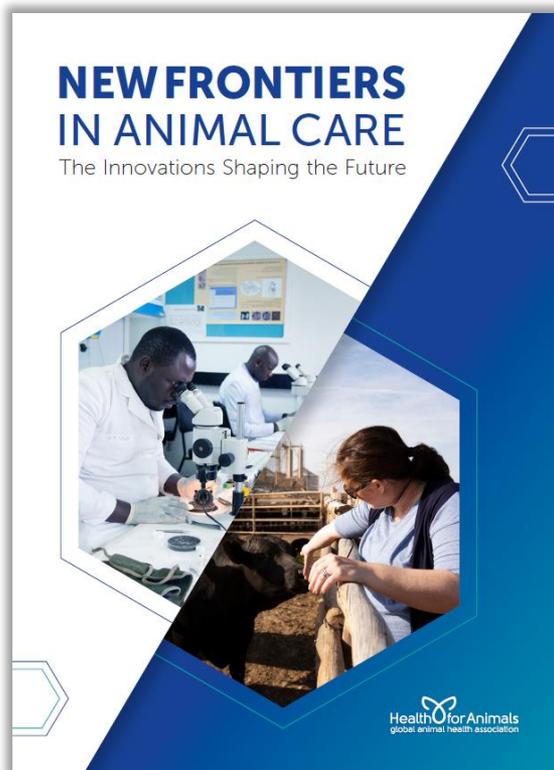
- **Acceptance**

Still challenging to encourage investment in prevention for some markets

- **What Needs to be Done**

Global campaign across governments and IGOs to 'democratize prevention' – promoting increased uptake and robust market access for these products.

## Technologies, Barriers, Contributions, etc.



- *Overview of technologies on the horizon across vaccines, nutrition, digital, etc.*
- *Innovation trends in major markets*
- *Contributions to sustainable development goals*
- *Potential barriers that may limit access*
- *Opportunities to improve pathways to market*

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