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ACT RX PRESENTATION



**Hospital & Human Veterinary,
Mariculture -Antiviral
Development Program**



**EGG
PHARMA**



ACTRX - ANTI VIRAL & ANTI FUNGAL

Interconnected Vulnerability

Humans, Animals, Water, & Climate in a Shared Crisis



Hospital & Human Veterinary, Mariculture -Antiviral Development



THE SILENT THREATS IN OUR HOSPITALS : MERS & CANDIDA AURIS

- Zoonotic coronavirus from camels, ~35% fatality rate
- Candida auris (since 2009): multidrug-resistant hospital fungus

Why it matters for PH:

Both pathogens remind us: high-risk patients, hospitals, and global travel can turn “rare” threats into national crises if readiness lags.

Current Philippine Agricultural Losses:

Avian Influenza (H5N1): Active in 99 municipalities, ₱8.2 billion in poultry losses (2025)

African Swine Fever: 150,000 pigs culled, ₱2.3 billion economic impact

Nervous Necrosis Virus: 40% of bangus/tilapia hatcheries affected, ₱1.8 billion losses

Total Agricultural Viral Impact: ₱15.2 billion annually (DA-BFAR data)

Food Security Threat:

70% of Filipino protein comes from poultry, fish, and livestock

Viral outbreaks force mass culling, creating protein shortages

Small farmers lose entire livelihoods overnight

Import dependency increases when domestic production fails



Petri dish with drug-resistant fungus.



The Regulatory Opportunity: Veterinary drug approval pathways are faster and less complex than human pharmaceuticals, offering a strategic entry point for broad-spectrum antiviral technology.

Strategic Vision: Use veterinary success to build platform for human applications.



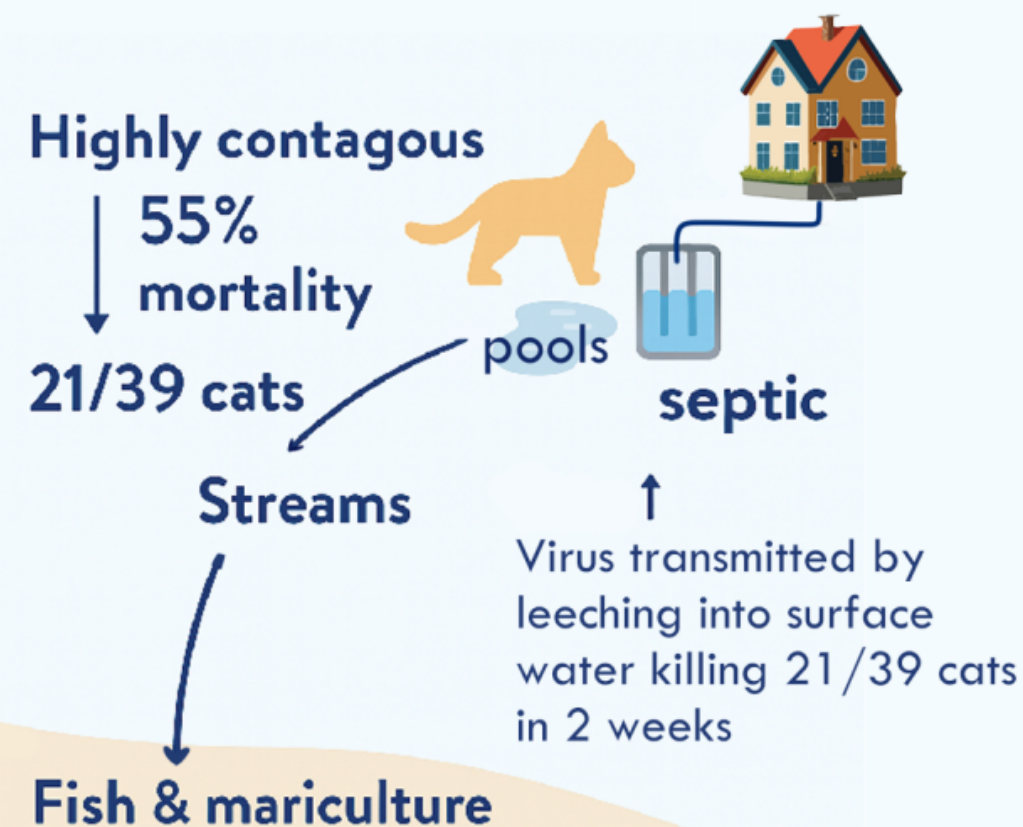
Scalable Production for Agricultural Protection

The Philippines' dependence on fish for food and livelihood means that viral diseases like NNV threaten not only the aquaculture industry but also national nutrition and economic stability.

Project Act RX - BlueShield and AnimalShield offers a comprehensive, science-based plan to protect fish stocks, secure livelihoods and maintain food security. By investing in surveillance, biosecurity, research, capacity building and collaboration, the Department of Health, DA-BFAR and local governments can build resilience against NNV and other emerging diseases.

We urge policymakers and funding agencies to support this initiative. Protecting fish is protecting families; it is an investment in the health, nutrition and prosperity of the nation. With decisive action, the Philippines can shield its blue economy and ensure a future where communities thrive and fish remain a vital source of sustenance.

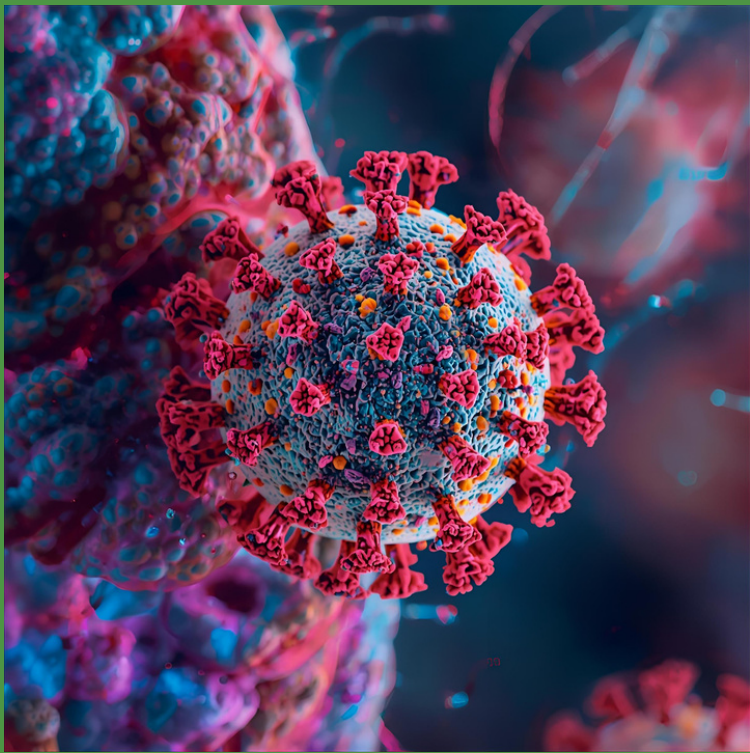
Virus & Spike Protein Shedding





THE HIDDEN PANDEMIC - VIRUSES & FUNGUS

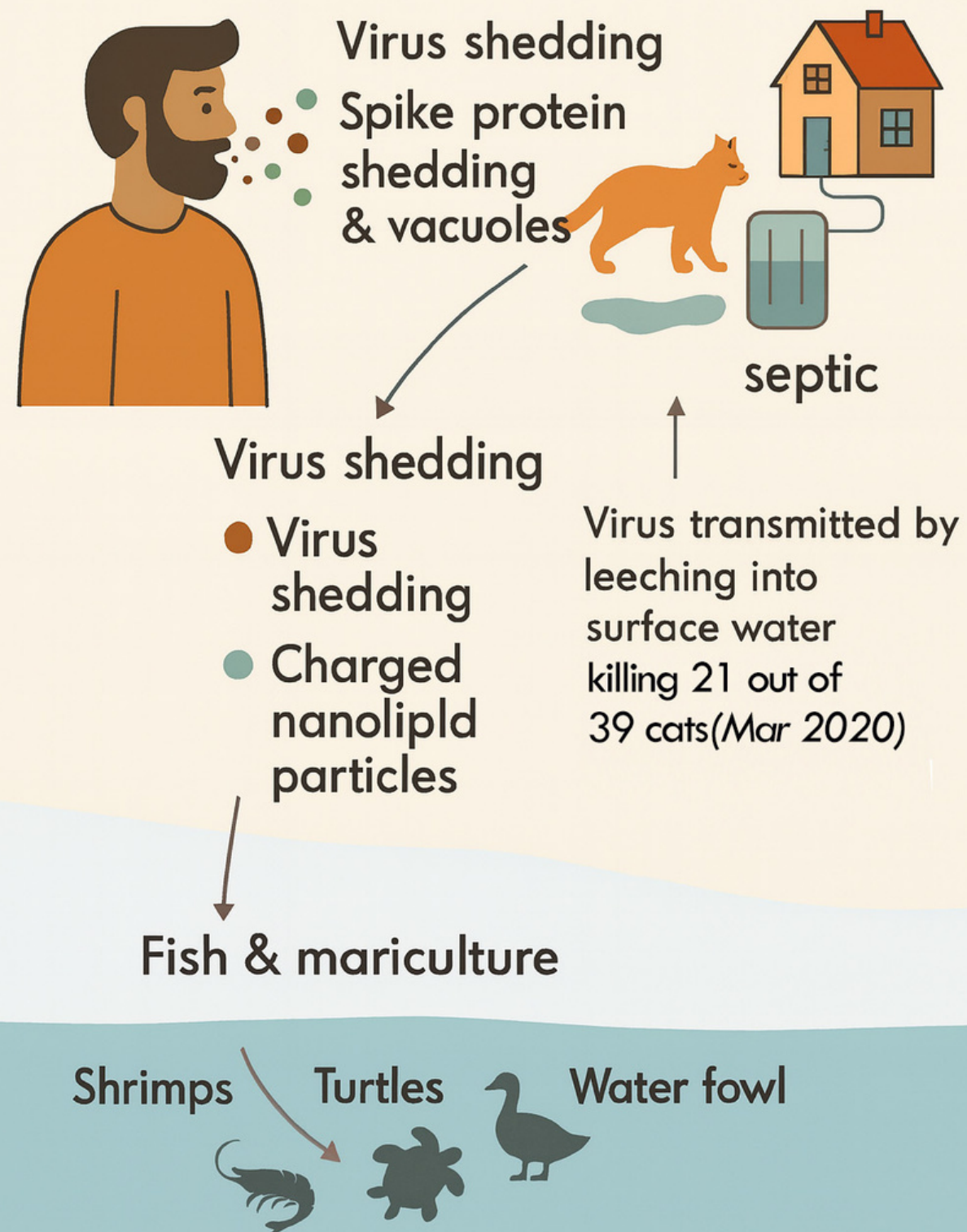
Overall estimates suggest that microbial infections, including fungi and bacteria, might be responsible for around 16% of cancers, but fungal-specific causation remains poorly established. The claim that 90% of cancers are caused by viruses and fungi is not supported by scientific evidence, as the actual contribution is closer to 10-20% for all infectious agents combined.



Virus	Virus Type	Cancers Caused	Notes
HPV	DNA virus	Cervical, oral, anal cancers	High-risk types affect cell cycle
HBV	DNA virus	Liver cancer	Chronic infection causes damage
HCV	RNA virus	Liver cancer	Causes chronic liver inflammation
EBV	DNA virus	Lymphomas, nasopharyngeal	Infects B cells and epithelium
HTLV-1	RNA virus	Adult T-cell leukemia	Viral oncogene Tax
KSHV (HHV-8)	DNA virus	Kaposi's sarcoma	Promotes angiogenesis
Merkel cell polyomavirus	DNA virus	Merkel cell carcinoma	Viral integration leads to cancer



Virus & Spike Protein Shedding



VIRUS & SPIKE PROTEIN SHEDDING & SANITATION EXPOSURE

- Humans shed viruses and microsomes or vacuoles filled with viruses expelled with lipid cell membrane covering: Through breath, saliva, and waste, viral particles and spike proteins, and charged lipid nano particles are released.
- Cats exposed: Contaminated areas infect cats, with high illness and death rates (21/39 in 2 weeks).
- Septic leaks: Viruses enter surface water from wastewater, spreading further.
- Environmental impact: Contamination reaches fish, shrimps, turtles, and waterfowl, threatening food chains and mariculture.

Key point: *Viruses can travel from people to pets, water, and wildlife—showing how human health, animals, and ecosystems are tightly connected.*

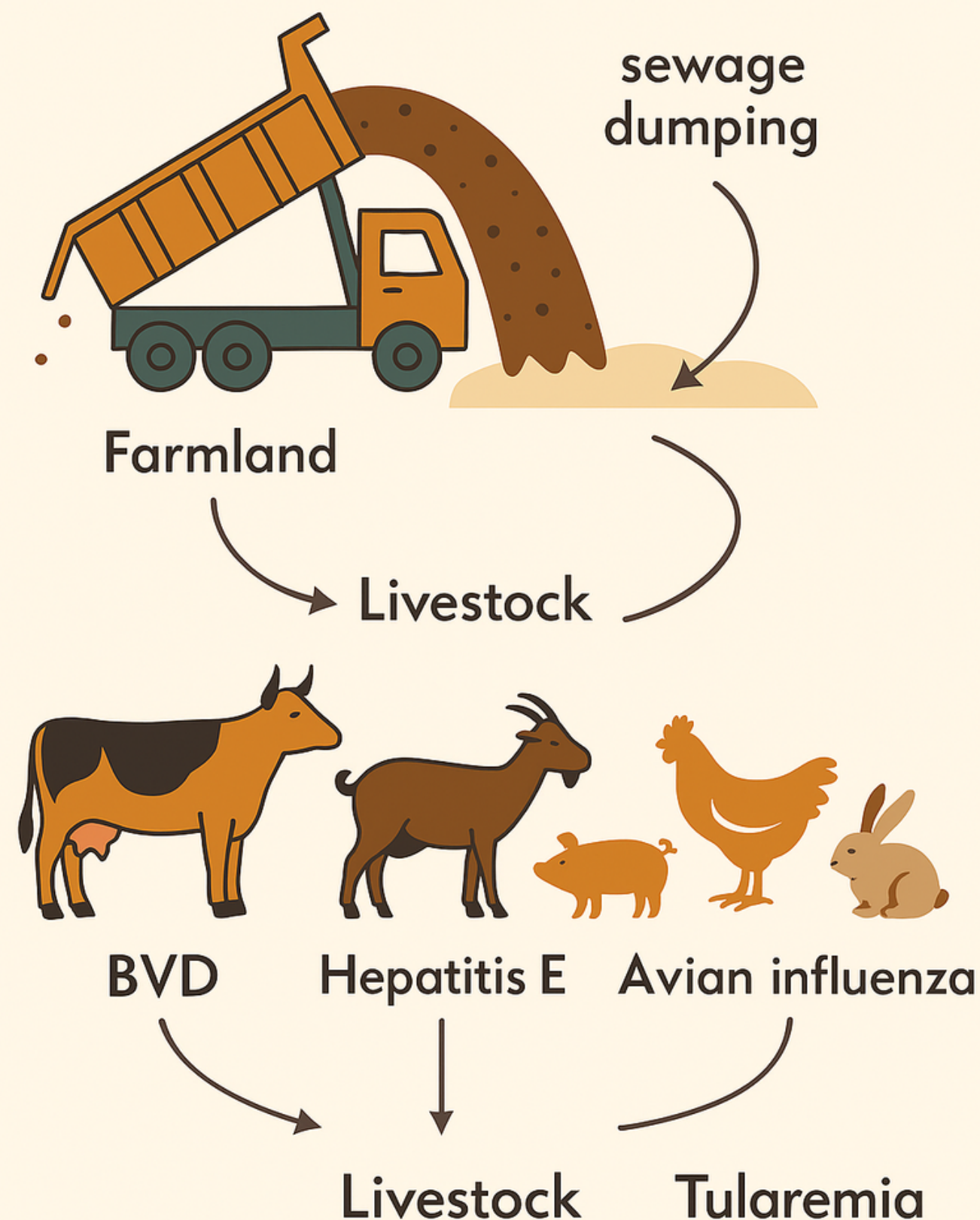


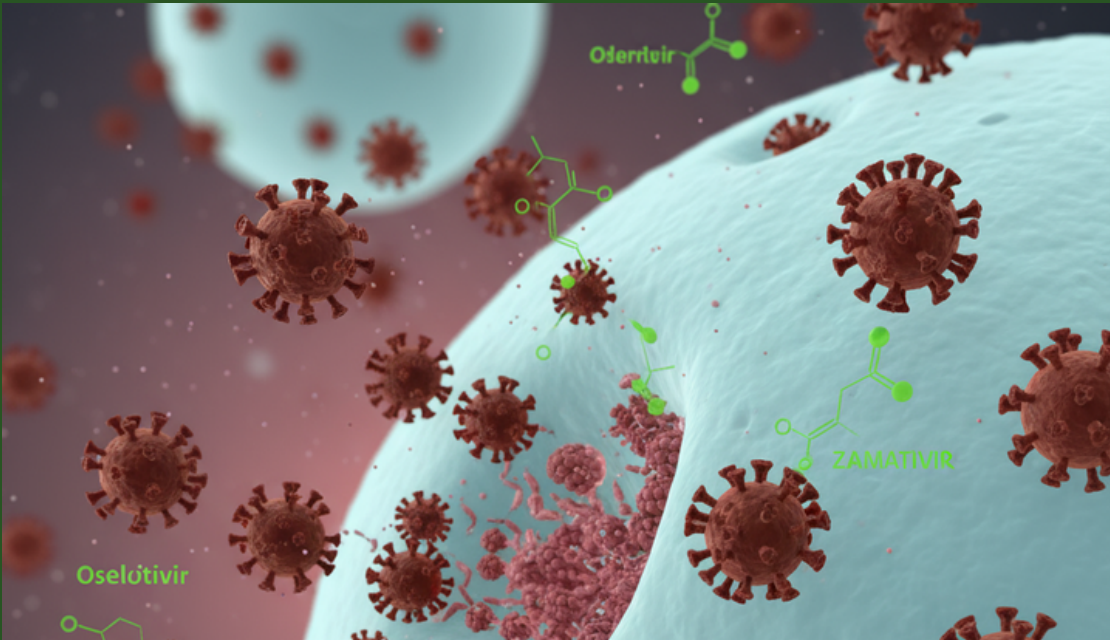
DISEASE TRANSMISSION IN AGRICULTURAL SETTINGS (PH)

- Water & Sanitation
 - Wells, rivers, and canals easily contaminated during floods.
 - Dirty irrigation → crops carry E. coli, Salmonella.
 - Overflowing septic pits spread pathogens.
- Animals & Zoonoses
 - Daily contact with chickens, pigs, ducks, carabaos, dogs.
 - Risks: avian flu, swine flu, rabies, leptospirosis.
 - Manure use can contaminate crops.
- Climate Effects
 - Rainy season: stagnant water → mosquitoes (dengue, malaria).
 - Floods mix waste into fields and ponds.
 - Dry season: scarce clean water, dusty air → diarrhea & respiratory diseases.
- Food & Agri Chain
 - Contamination spreads farm → market → consumer.
 - Sick farmers ↔ livestock exchange infections.
 - Aquaculture near farms affected by runoff.

Key Insight: Human, animal, and water systems are interconnected. Climate makes these risks worse, demanding a “One Health” approach.

Sewage & Livestock Diseases





ANTIVIRAL TREATMENTS FOR DOCTORS

Transmission Route	Cause	Causation	Correlation
Respiratory	Airborne droplets/aerosols	Virus enters respiratory tract	High contact and crowding increase risk
Gastrointestinal	Contaminated food/water	Virus infects gut lining	Poor sanitation correlates with outbreaks
Direct Contact	Skin, sexual contact, fluids	Virus enters via mucous membranes	Intimate contact increases risk
Vector-borne	Infected mosquitoes/ticks	Virus injected into bloodstream	Geography/environment influence vector presence
Blood/Transplants	Infected donor blood/organs	Virus directly enters bloodstream	Unsafe medical practices elevate risk
Mother-to-child	Placenta, birth, breastfeeding	Virus infects fetus/newborn	Maternal infection strongly linked to transmission



ANTIVIRAL TREATMENTS FOR DOCTORS

- Nucleoside/Nucleotide Analogues: Block viral replication (e.g., acyclovir, remdesivir)
- Protease Inhibitors: Stop viral protein processing (e.g., ritonavir, nirmatrelvir)
- Reverse Transcriptase Inhibitors: Prevent viral RNA to DNA conversion (for HIV)
- Fusion/Entry Inhibitors: Block virus entry into cells (e.g., enfuvirtide)
- Neuraminidase Inhibitors: Block influenza virus spread (e.g., oseltamivir)
- Immunomodulators/Monoclonal Antibodies: Boost immune response or target viruses

These drugs inhibit virus growth, aiding the immune system to clear infections.

Treatment Type	Approximate Cost Per Patient (USD)	Notes
Remdesivir (RDV)	\$1,800 - \$3,000	IV infusion, COVID-19 treatment
Nirmatrelvir/Ritonavir (Paxlovid)	\$1,300 - \$1,500	Oral COVID-19 antiviral
Hepatitis B Antivirals (Tenofovir, Entecavir)	\$300 - \$1,000 (generic varies by country)	Long-term treatment for chronic infection
Hepatitis C Antivirals (Sofosbuvir-based)	\$20,000 - \$50,000 (brand name, varies)	Curative courses, high cost in some areas
Acyclovir (Herpes)	\$50 - \$200	Generic oral or topical, low cost
Oseltamivir (Flu)	\$75 - \$150	Oral, moderate cost



Treatment Type	Drug Examples	Target Virus/Fungus	Diseases Treated	Estimated Cost Per Patient (USD)
Antiviral	Acyclovir, Valacyclovir	Herpes Simplex Virus (HSV)	Cold sores, genital herpes	\$50 - \$200
	Oseltamivir (Tamiflu)	Influenza Virus	Flu	\$75 - \$150
	Remdesivir	SARS-CoV-2	COVID-19	\$1,800 - \$3,000
	Nirmatrelvir/Ritonavir	SARS-CoV-2	COVID-19	\$1,300 - \$1,500
	Tenofovir, Entecavir	Hepatitis B Virus	Chronic Hepatitis B	\$300 - \$1,000
	Sofosbuvir, Ledipasvir	Hepatitis C Virus	Chronic Hepatitis C	\$20,000 - \$50,000
	Zidovudine, Efavirenz	HIV	HIV/AIDS	Varies widely
	Ganciclovir, Foscarnet	Cytomegalovirus (CMV)	CMV infections	Several thousand dollars
Antifungal	Fluconazole, Itraconazole	Candida species	Candidiasis	\$50 - \$200
	Amphotericin B	Aspergillus, Cryptococcus	Invasive fungal infections	\$1,000 - \$5,000+ (hospital-based)
	Voriconazole	Aspergillosis	Pulmonary aspergillosis	\$500 - \$2,000
	Terbinafine	Dermatophytes	Ringworm, athlete's foot	\$50 - \$200

Dimension	Current Antivirals/Antifungals	ActRx Approach	
Cost	Expensive (e.g., Remdesivir \$1,800–\$3,000; Hepatitis C drugs \$20k–\$50k)	Designed to be affordable, leveraging phytomedicine and repurposed compounds	
Resistance	Rising resistance (<i>Candida auris</i> vs fluconazole; multidrug-resistant strains)	Integrative approach lowers selective pressure, supports resilience	
Accessibility	Often hospital-based, limited in community settings	Adaptable for both hospital and community-level deployment	
Scope of Action	Narrow, drug-specific (HIV, HCV, CMV, etc.)	Multi-target strategy combining Ayurvedic principles + modern agents (berberine, artemisinins)	
Integration with PH system	FDA approval processes costly and lengthy; PITAHC integration minimal	Aligned with PITAHC + FDA frameworks for regulated complementary use	
Future-readiness	Vulnerable to pipeline delays and high R&D costs	Flexible, locally adaptable, cost-effective innovation platform	

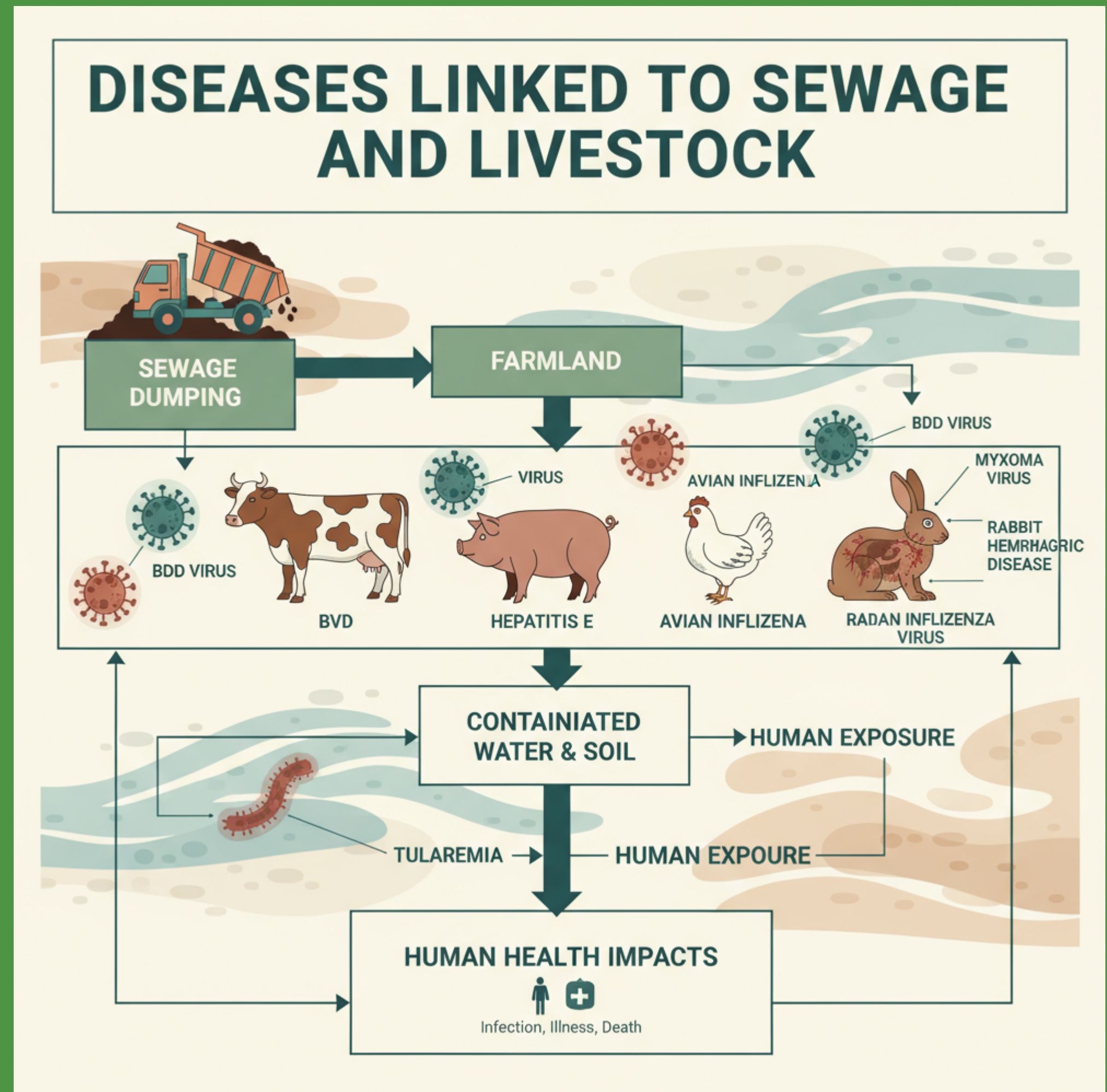
Aspect	Current Drugs ⚠	ActRx ✅
Cost	High (\$1.8k–\$50k)	Affordable, accessible
Resistance	Rising, limited options	Integrative, lowers pressure
Access	Mostly hospital-only	Hospital + community use
Scope	Narrow, virus-specific	Multi-target, broader shield
PH Alignment	Slow, costly FDA path	PITAHC + FDA integrative route
Future-Ready	Vulnerable, high R&D	Flexible, locally adaptable

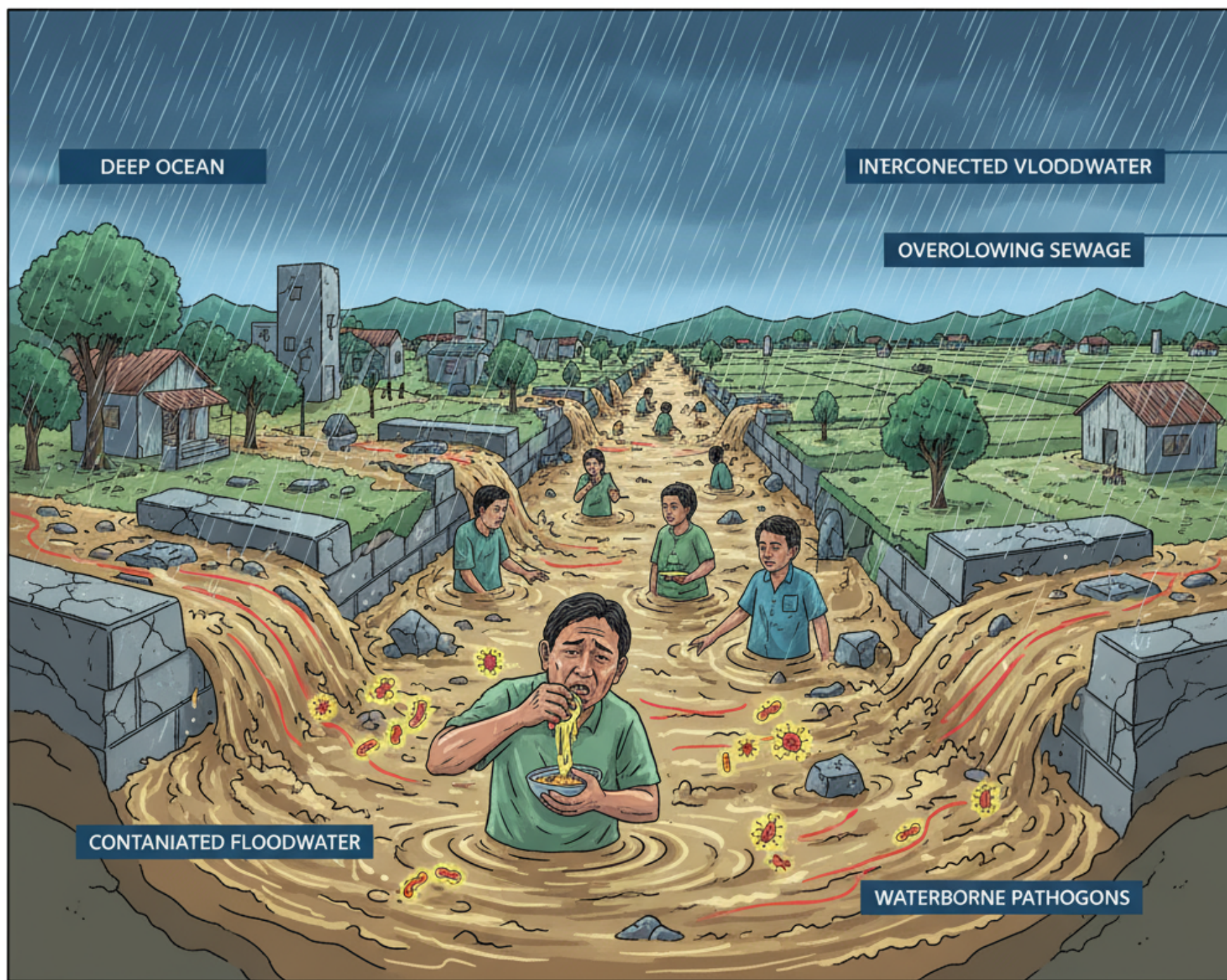


CAUSAL CONCLUSIONS

Sewage and animal feces used as farmland fertilizer and ancient sewage systems in all our cities can introduce dangerous pathogens into soil, water, and crops. Livestock raised in these conditions become vulnerable to diseases such as Bovine Viral Diarrhea in cows, Hepatitis E in pigs, Avian Influenza in chickens, and Rabbit Hemorrhagic Disease. These infections not only threaten animal health but also weaken food security and farm livelihoods.

When pathogens from sewage spread into contaminated water and soil, they reach humans through direct contact, farming, or daily use of unsafe water. The result is a chain reaction of illness, outbreaks, and even deaths, showing how poor waste management can endanger both agriculture and public health.





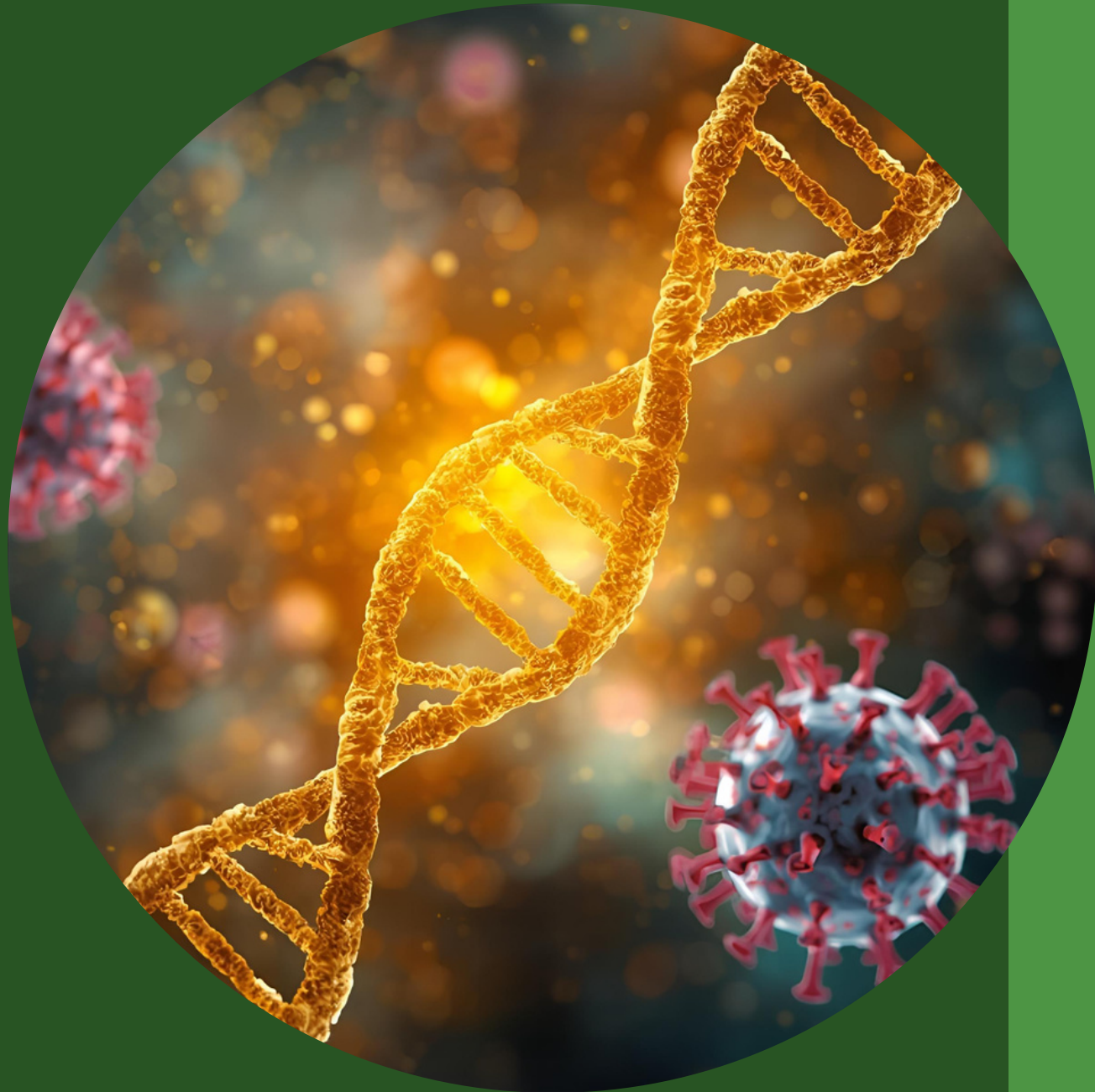
Scalable Act RX Production for Agricultural Protection, Sprayed on Animal Feed System at \$1 per Kilo

The Philippines' lifeblood flows through its waters. Fish and farms feed our families and sustain our economy—but one outbreak like NNV can threaten food, livelihoods, and stability.

Project Act RX – BlueShield & AnimalShield is our promise: science-based protection for fish stocks, stronger biosecurity, and resilience for farmers and communities.

By uniting science, and proven Act Rx that is India AYUSH-Approved Ayurvedic medicine over Millennia and people, we can safeguard not just agriculture—but our future, our nation, and the generations yet to come.

When science, Ayurvedic wisdom, and people stand united, we protect more than agriculture—we safeguard our future, our nation, and the generations yet to come.



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THANK YOU!



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