

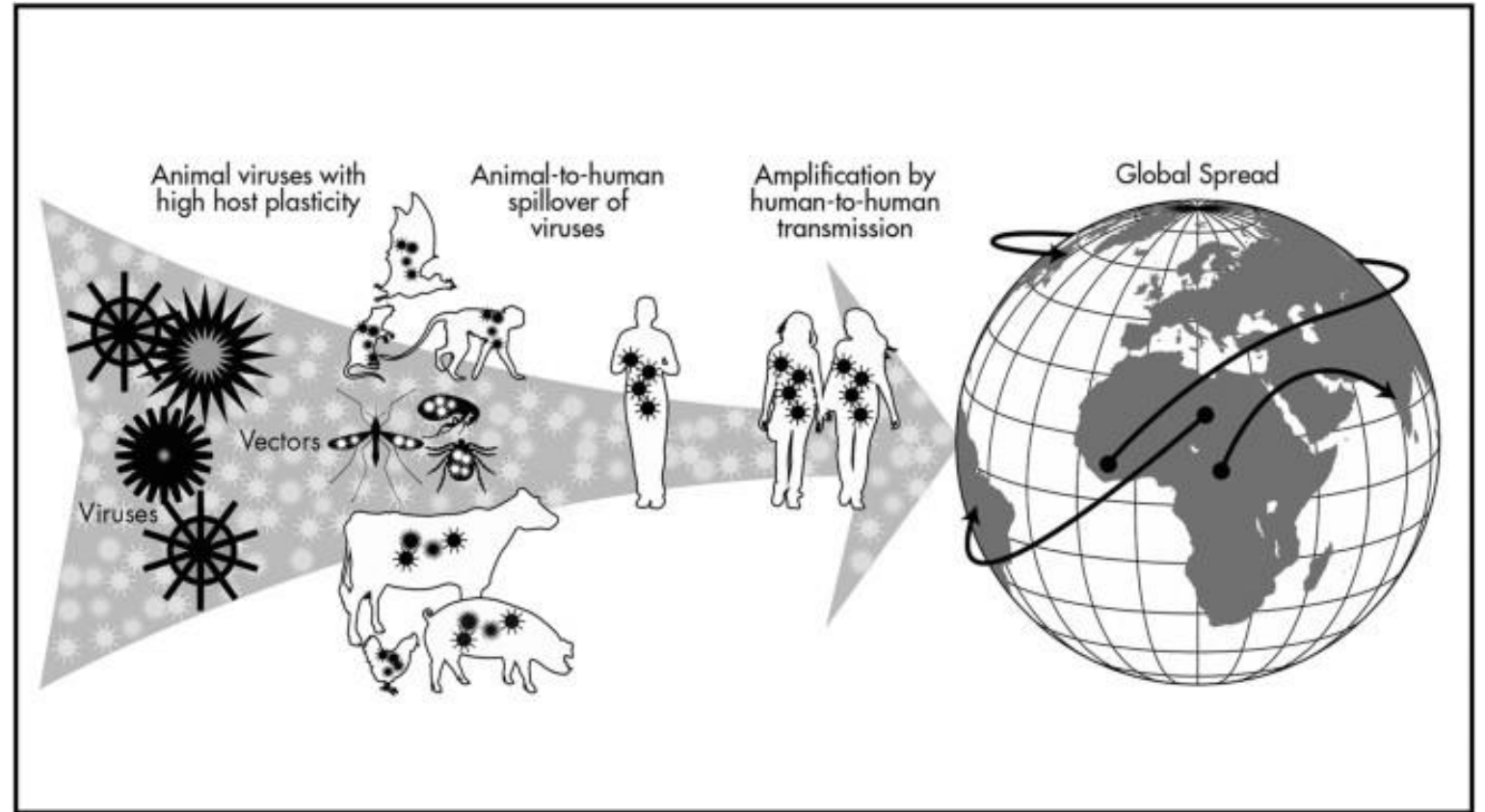


ONE HEALTH PANDEMIC PREVENTION AND MITIGATION: THE ROLE OF FDA

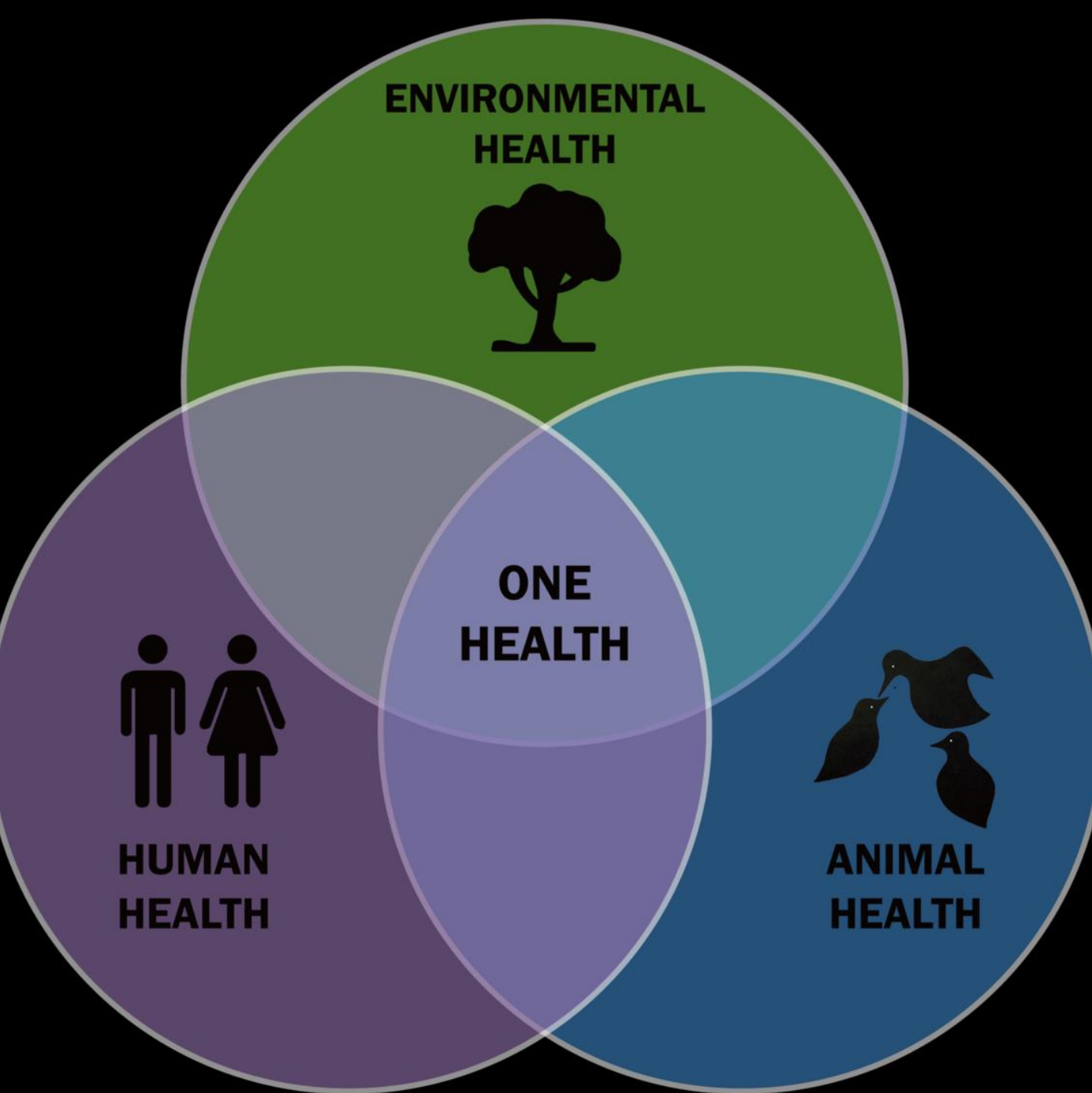
Margaret Foster Riley, J.D.

FDLI Symposium, November 12-13 2020

Zoonotic disease: origins and vectors



Source: Kreuder Johnson, C., Hitchens, P., Smiley Evans, T. *et al.* Spillover and pandemic properties of zoonotic viruses with high host plasticity. *Sci Rep* 5, 14830 (2015). <https://doi.org/10.1038/srep14830>

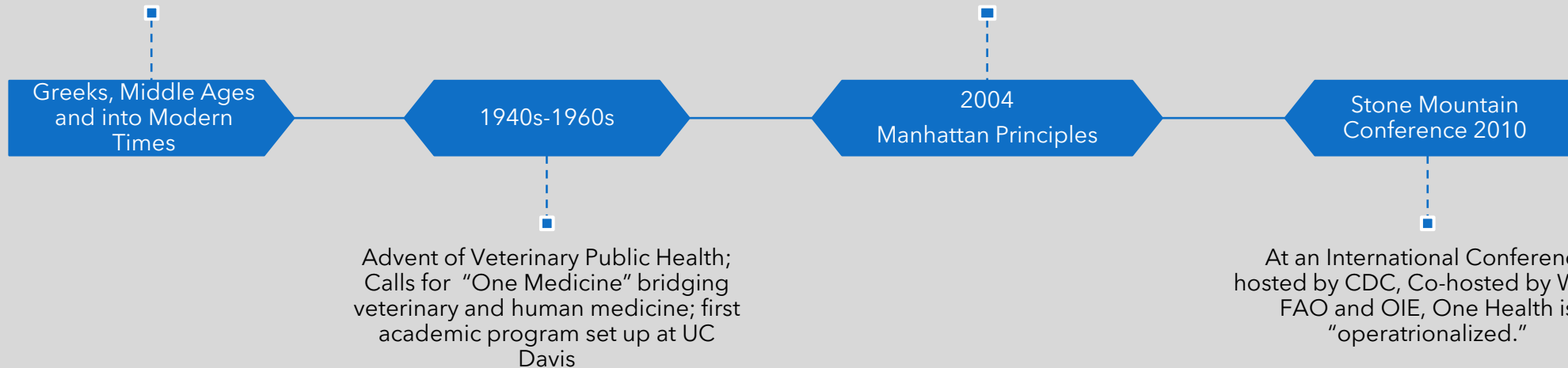


ONE
HEALTH

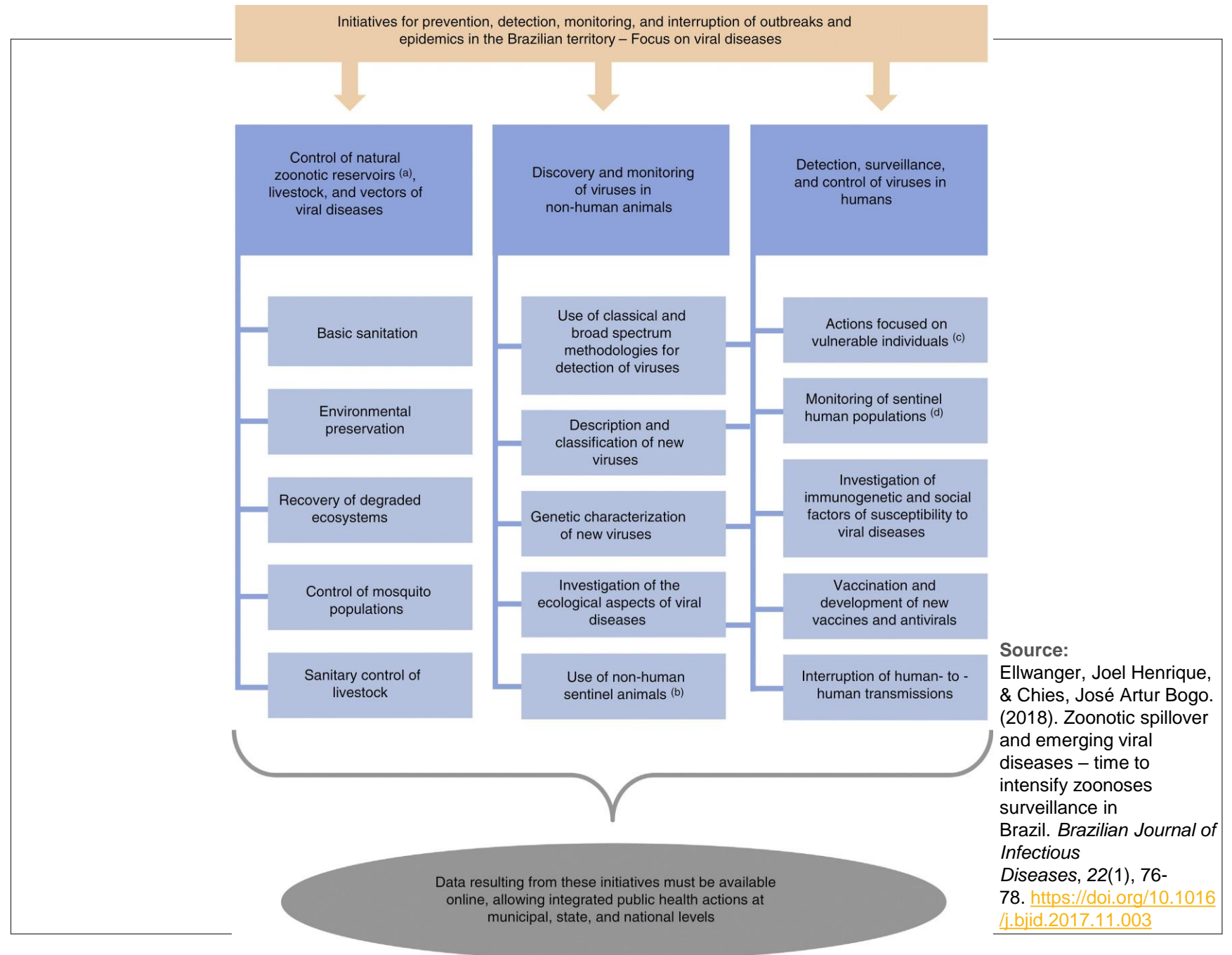
History of One Health

One Health concepts have existed since Hippocrates; but in 18th C France, veterinary science and human medical science began to separate. In the 20th C, as zoonosis was recognized as a problem, some calls for a return to One Medicine

Driven by the potential for avian and other influenzas, new focus on the interconnectedness of animal, human and environmental health; Manhattan Principles set out concept of One Health



A One Health Approach to Zoonotic Disease



One Health



Singapore City's skyline. May_Lana/Shutterstock



One Health and FDA



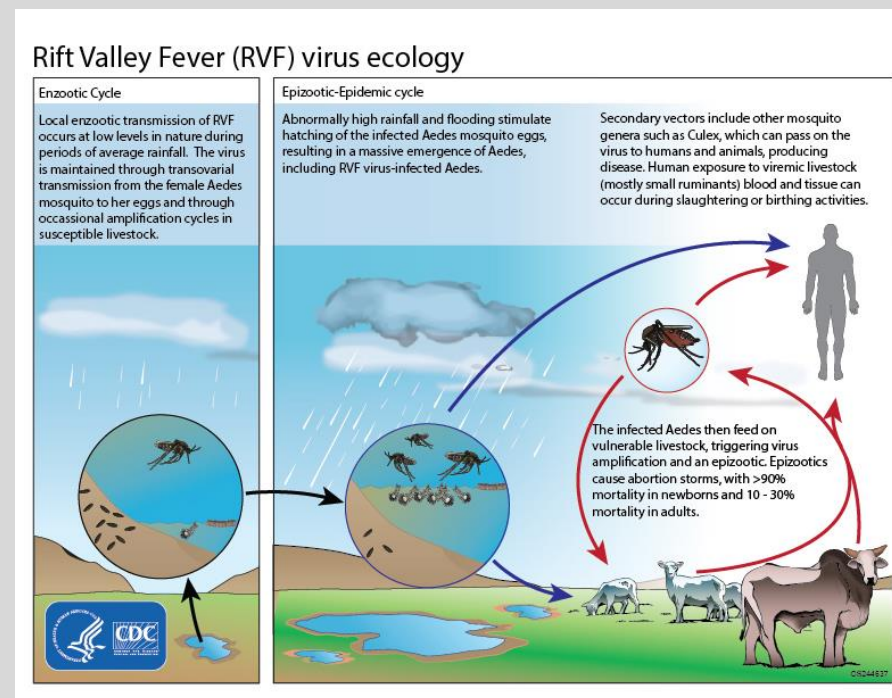
- Zoonotic disease
- Translational medicine
- Links between foodborne illness, antimicrobial resistance, and nutrition
- Human-animal bond



COVID, ONE HEALTH, AND FDA

One Health Generated Platforms: Pro-Active Vaccine, Treatment and Diagnostic Development

- Simultaneous/Parallel livestock and wildlife vaccinations, treatments and diagnostics
- Platform technologies (vaccination and treatment) for specific types of viruses: e.g. coronaviruses
- Moderna head-start with MERS

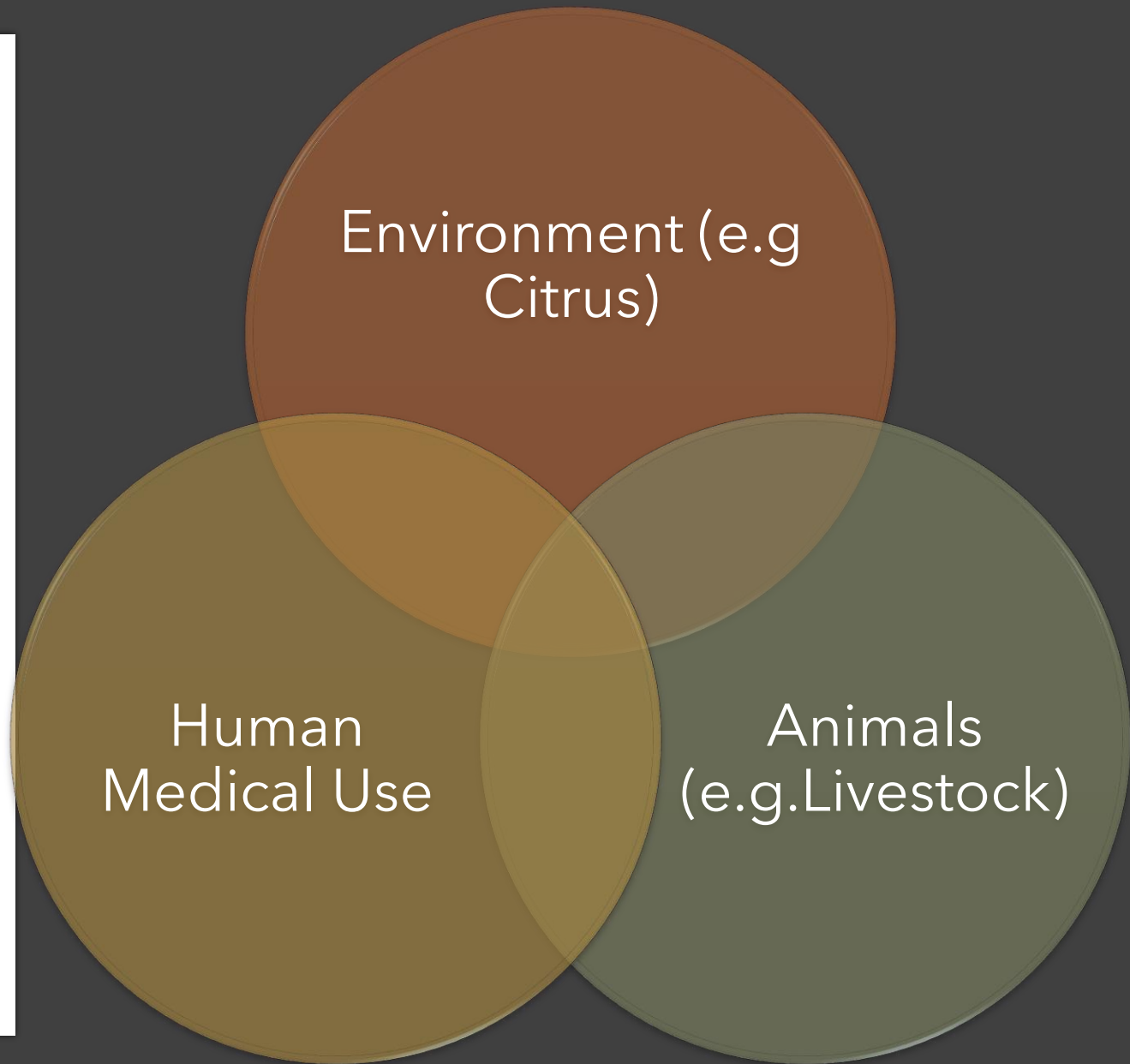


One Health Generated Platforms-- Challenges

- Insufficient Surveillance
- Insufficient Funding
 - Outside User-Fee funding
- Gaps in Authority
 - Pre-clinical oversight
- Overlapping Authority
 - FDA oversight for veterinary drugs/USDA oversight for veterinary biologics

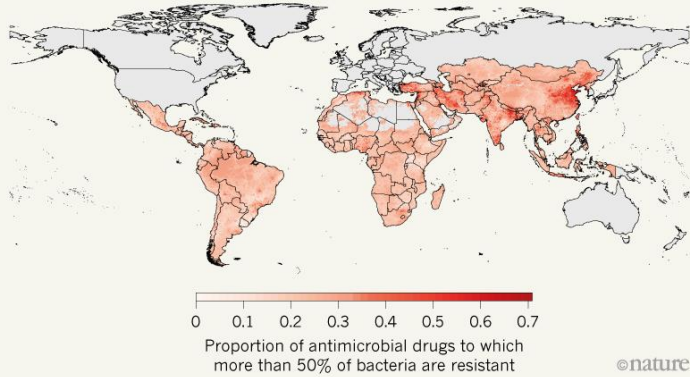
ANTIBIOTIC
RESISTANCE

ONE HEALTH
PERSPECTIVES



RESISTANCE HOTSPOTS

Farm animals harbour more drug-resistant bacteria in countries where meat production has increased rapidly.



Antibiotic Resistance- Challenges for FDA

Limited authority over physician use

Overlapping authority; failures of coordination
between EPA, FDA, USDA and CDC

Ambiguous Development of the Judicial Use
framework

Limits on authority

Questions on veterinary supervision

Gaps in Livestock Surveillance

Gene Drives

- [VOX overview of gene drives](#)



GENE DRIVES



Conclusions

- One Health provides a potentially powerful tool to prevent the next pandemic
- Challenges
 - Dominance of a reactive medical model
 - Funding
 - Coordination at the international and national levels
- Challenges for FDA
 - One Health needs to be taken seriously by all Centers to have any significant role
 - Funding
 - Limits on authority
 - Agency cooperation