



AMR and One Health: Is there a connection?

A Veterinary Perspective

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Resistance to different antimicrobial products in human medicine
1928 - 1994

12

• Penicillin: 1928 - 1949

5

• Tetracycline: 1948 - 1953

37

• Macrolide: 1948 - 1985

8

• β -Lactam: 1985 – 1993

1

• Fluoroquinolone: 1985 – 1985

CAUSES OF ANTIBIOTIC RESISTANCE



Antibiotic resistance happens when bacteria change and become resistant to the antibiotics used to treat the infections they cause.



Over-prescribing of antibiotics



Patients not finishing their treatment



Over-use of antibiotics in livestock and fish farming



Poor infection control in hospitals and clinics



Lack of hygiene and poor sanitation



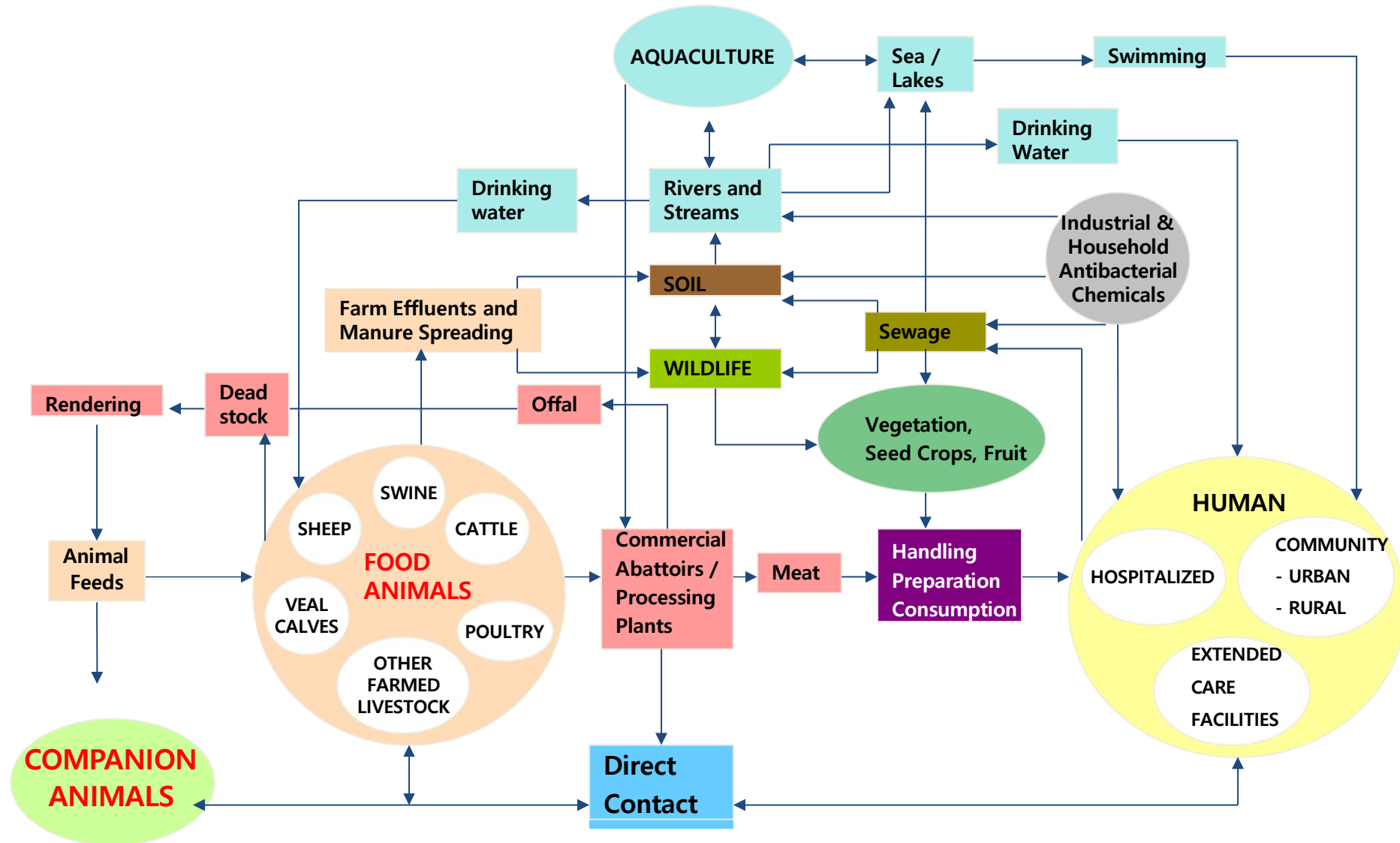
Lack of new antibiotics being developed

www.who.int/drugresistance

#AntibioticResistance



Epidemiology of antimicrobial resistance

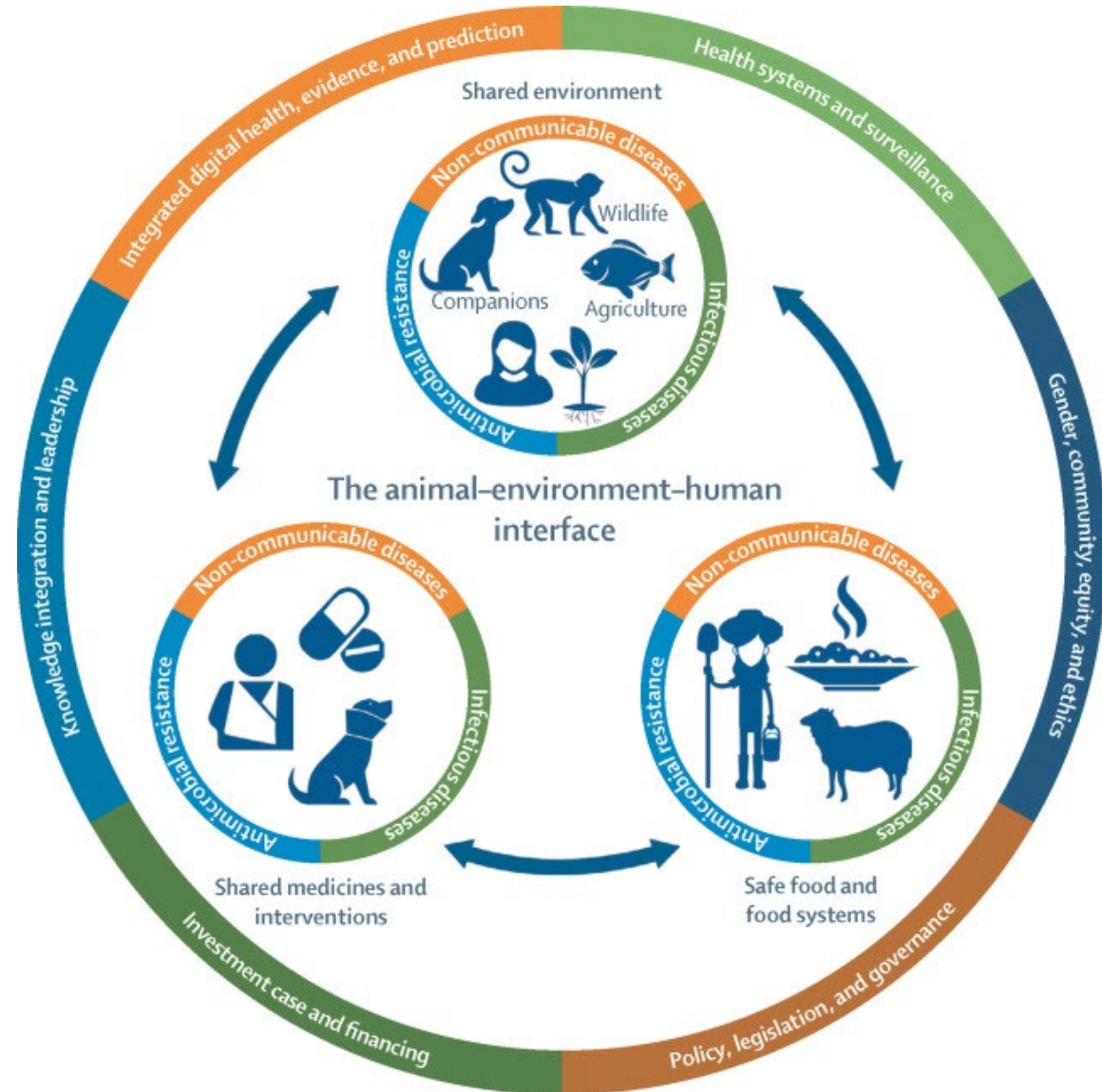


after Linton AH (1977), modified by Irwin RJ

ANTIMICROBIAL RESISTANCE (AMR)

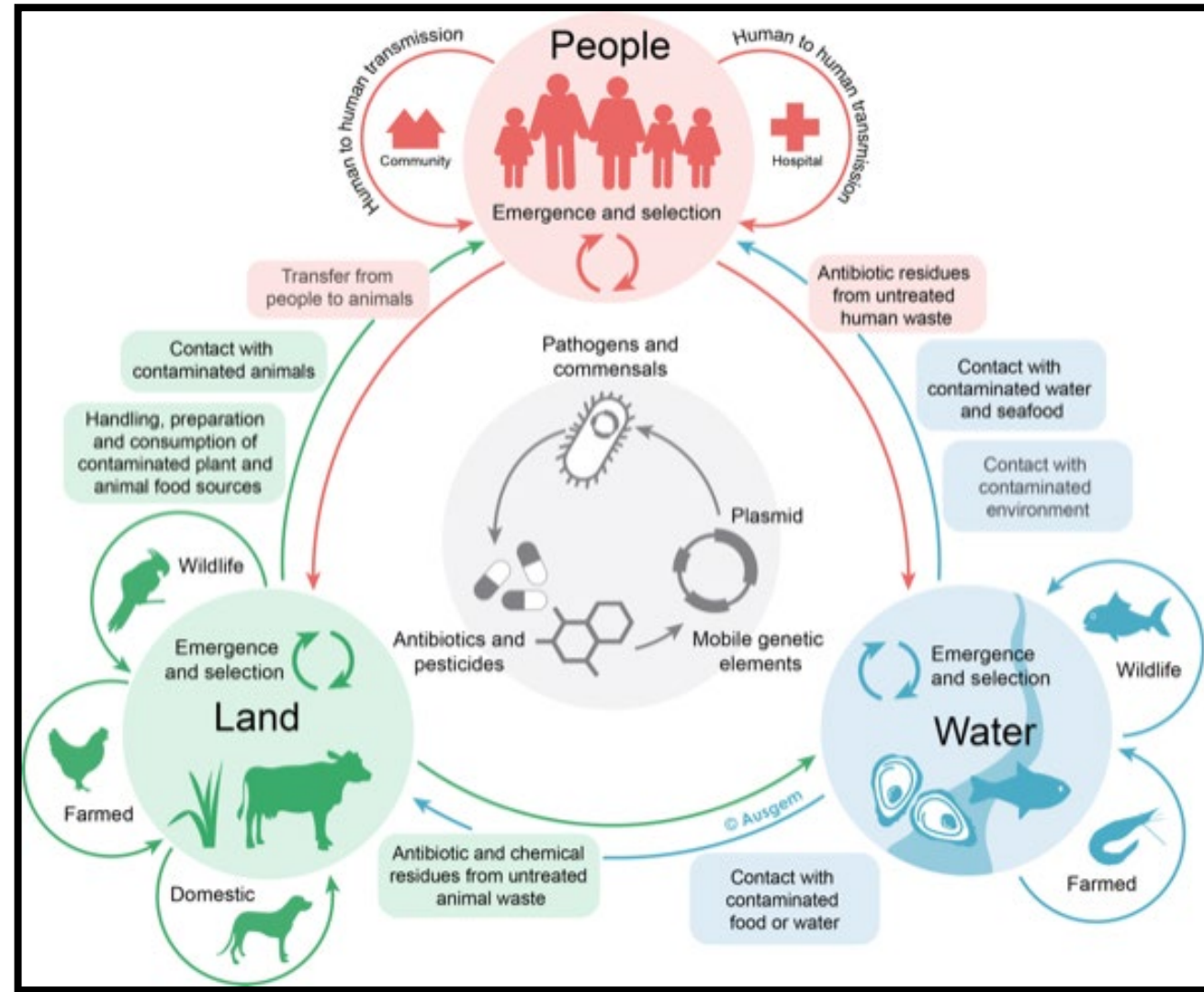
“It is universally agreed that overuse or misuse of antibiotics speeds up the development of resistance”

- One Health is an approach that recognizes the interconnectedness of the health of people, animals, and the environment.
- Antimicrobial resistance is a global One Health issue.
- Antimicrobial use in animals, people, and the environment all contribute to the emergence of resistance, and resistance spreads across species and settings.



One Health & AMR

- Among the global health problems, **AMR** is the one that most clearly illustrates the **One Health** approach.
- AMR is a **critical global problem** affecting humans, the environment, and animals.
- This is related to each of these three components due to the **irresponsible and excessive use of antimicrobials** in various sectors (agriculture, livestock, and human medicine).
- **Improper management of antimicrobials, inadequate control of infections, agricultural debris, pollutants in the environment, and migration of people and animals infected with resistant bacteria** facilitate the spread of resistance.





In summary

One Health Strategies to Address Antimicrobial Resistance according to the WHO Global Plan:

- **Improve Awareness and Understanding of Antimicrobial Resistance through Effective Communication, Education and Training**
- **Strengthen the Knowledge and Evidence Base through Surveillance and Research**
- **Reduce the Incidence of Infection through Effective Sanitation, Hygiene and Infection Prevention Measures**
- **Optimize the Use of Antimicrobial Medicines in Human and Animal Health**
- **Develop the Economic Case for Sustainable Investment that Takes Account of the Needs of All Countries, and Increase Investment in New Medicines, Diagnostic Tools, Vaccines and Other Interventions**