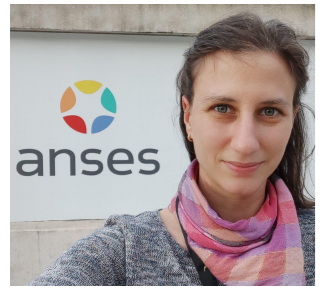


# Syndromic Surveillance for Animal Health: Current Practices and Future Directions



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## Background

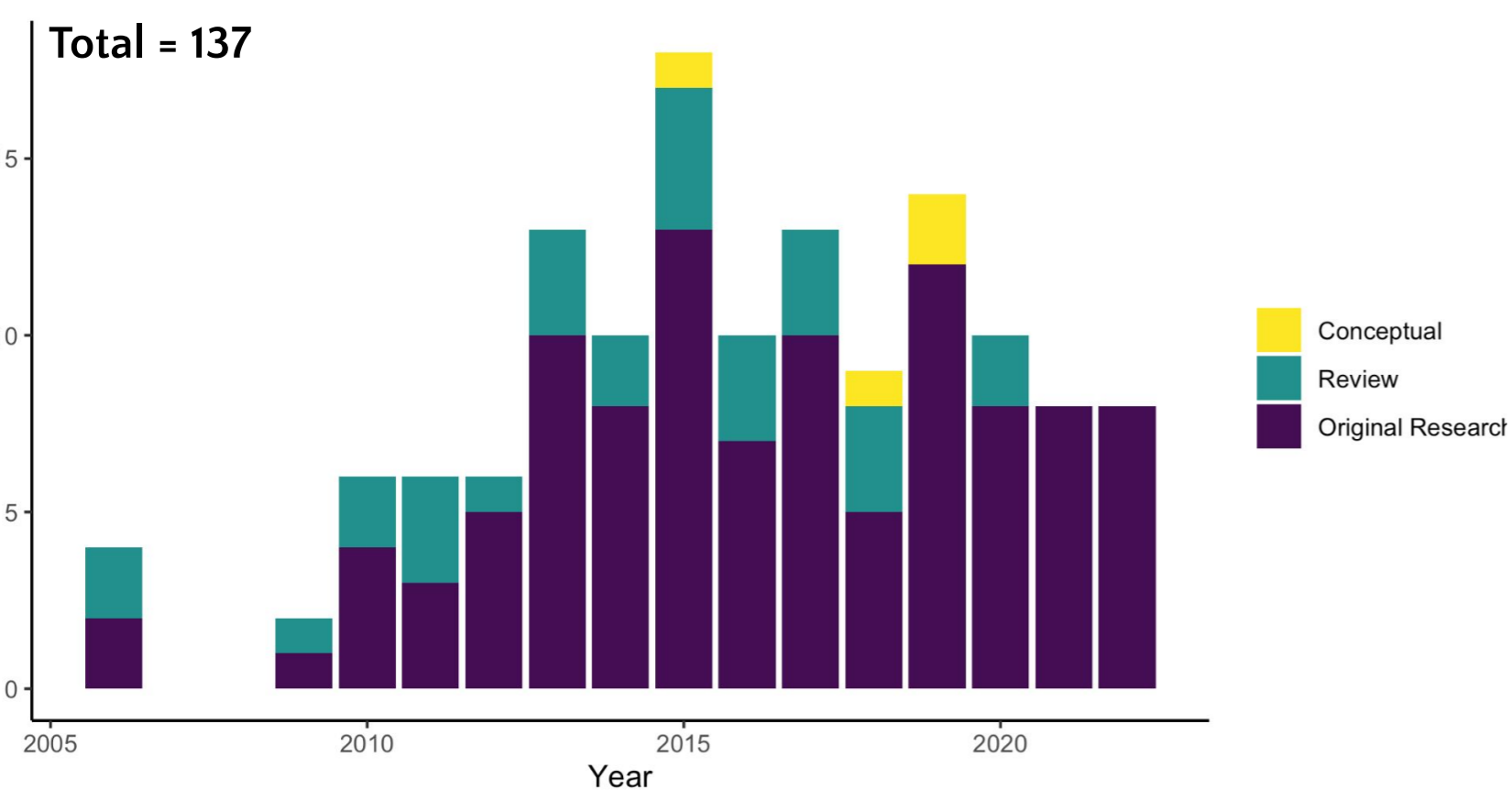
- **Syndromic Surveillance** is the use of non-specific indicators to monitor health events
- Often in real-time
- Powerful tool for the **early detection of threats**, ranging from diseases to bioterrorism
- Ideally can provide an **early warning** of unexpected health threats
- Adapted for known or unknown threats or pathogens
- Used in animal health since 2006
- Most recent systematic review: 2016 (Dórea and Vial)

## Methods

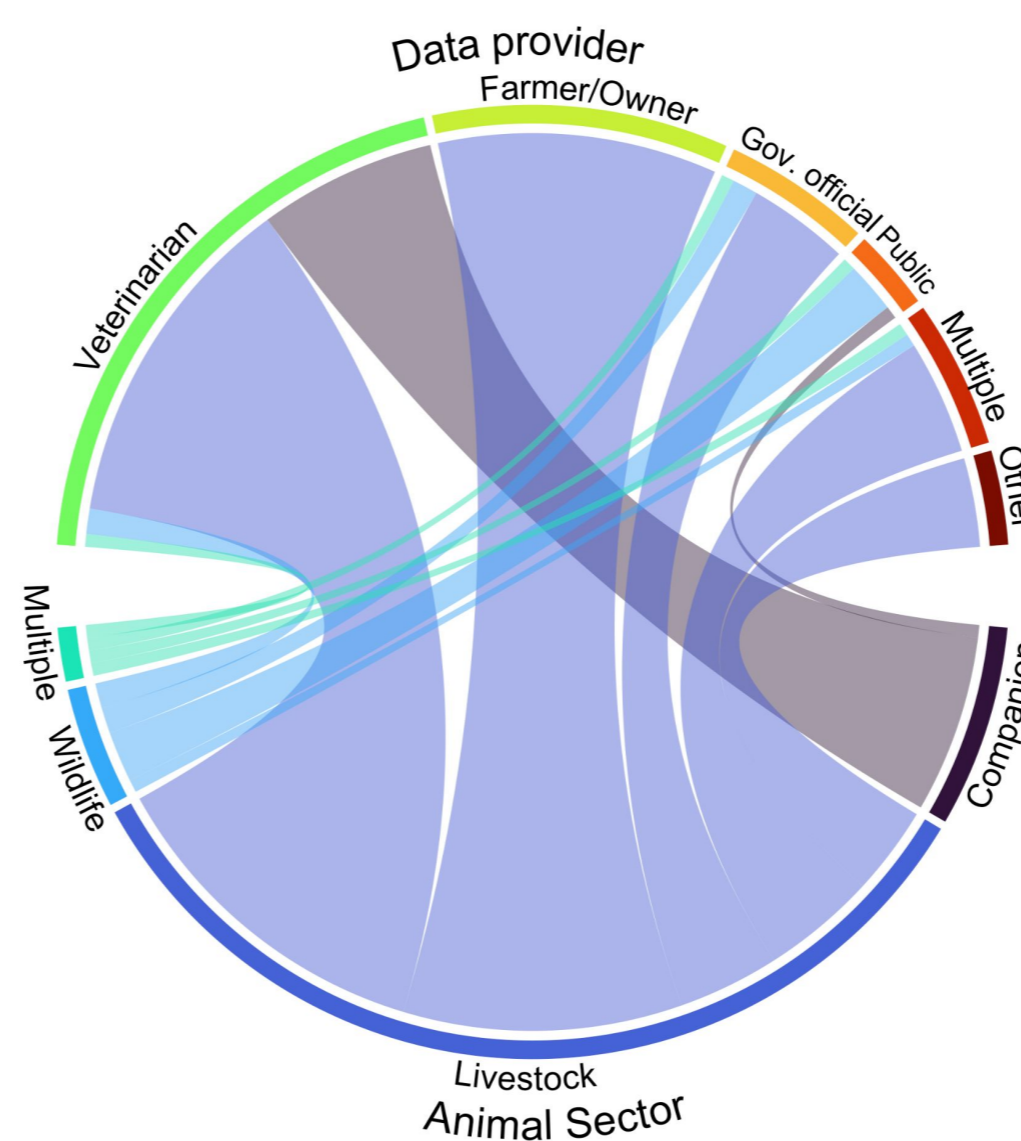
- Systematic **literature review** :
  - Terms : "syndromic surveillance" & "animal\*" OR "veterinary"
  - Titles, abstracts, keywords of peer-reviewed articles
  - Scopus and PubMed databases.
- Abstracts screened for relevance
- For original research papers: Characteristics of the syndromic surveillance system and methods used were extracted
- Here we present **preliminary results** mainly based on **original research papers**

## Results

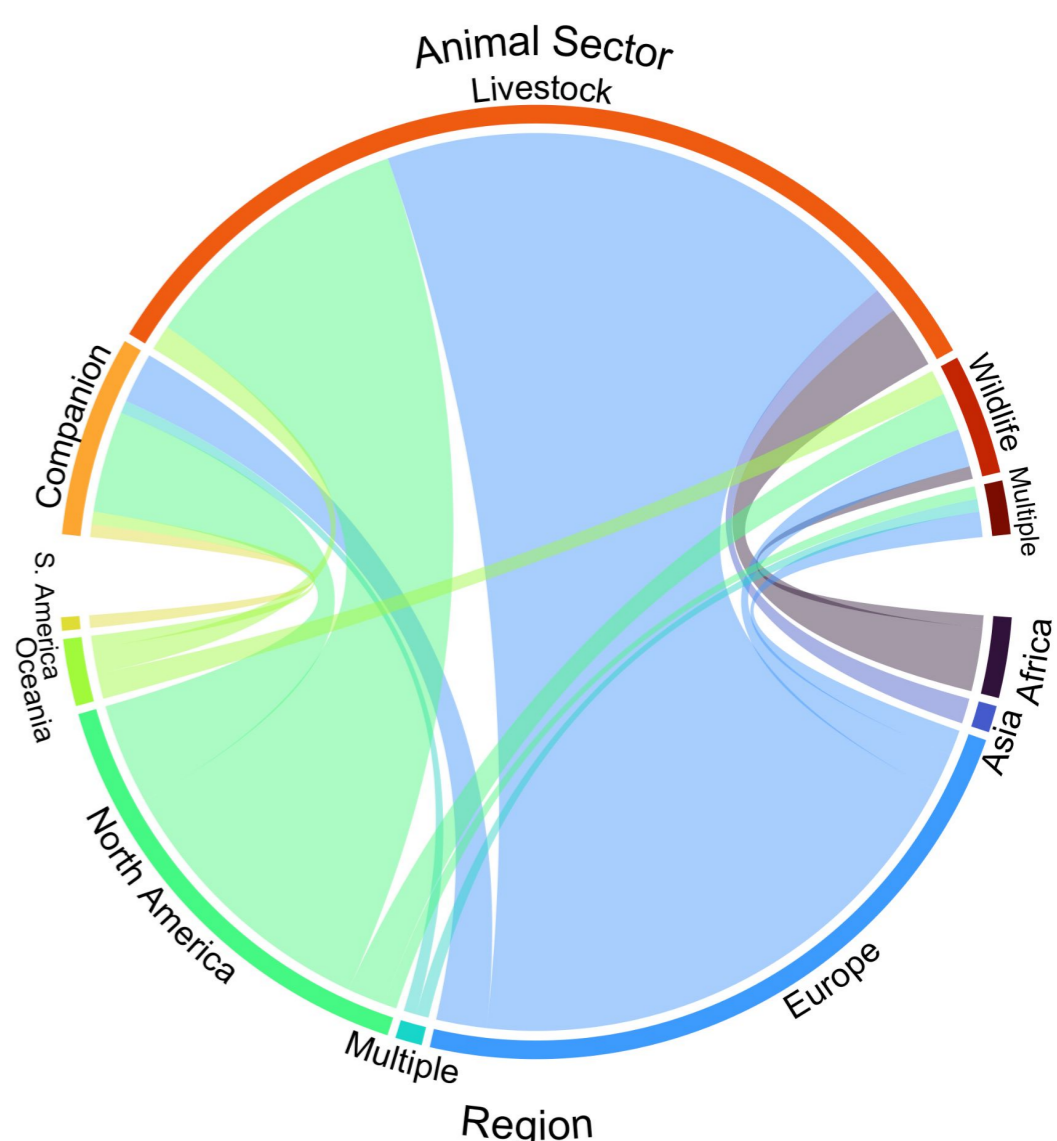
Publication history:



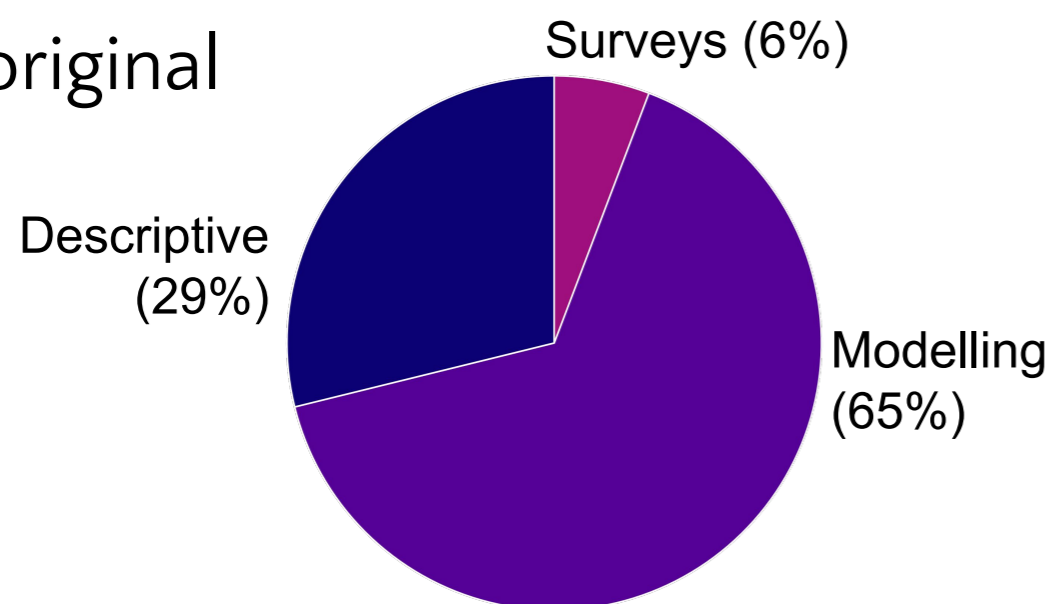
Who collects the data for each animal sector?



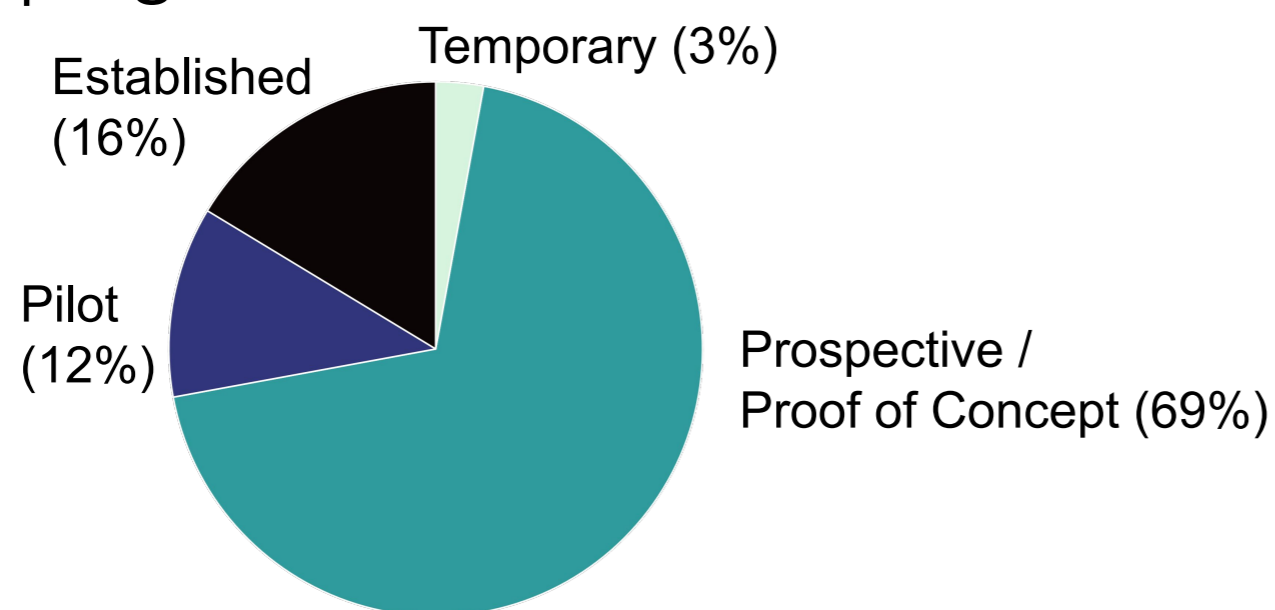
Where is each type of animal monitored?



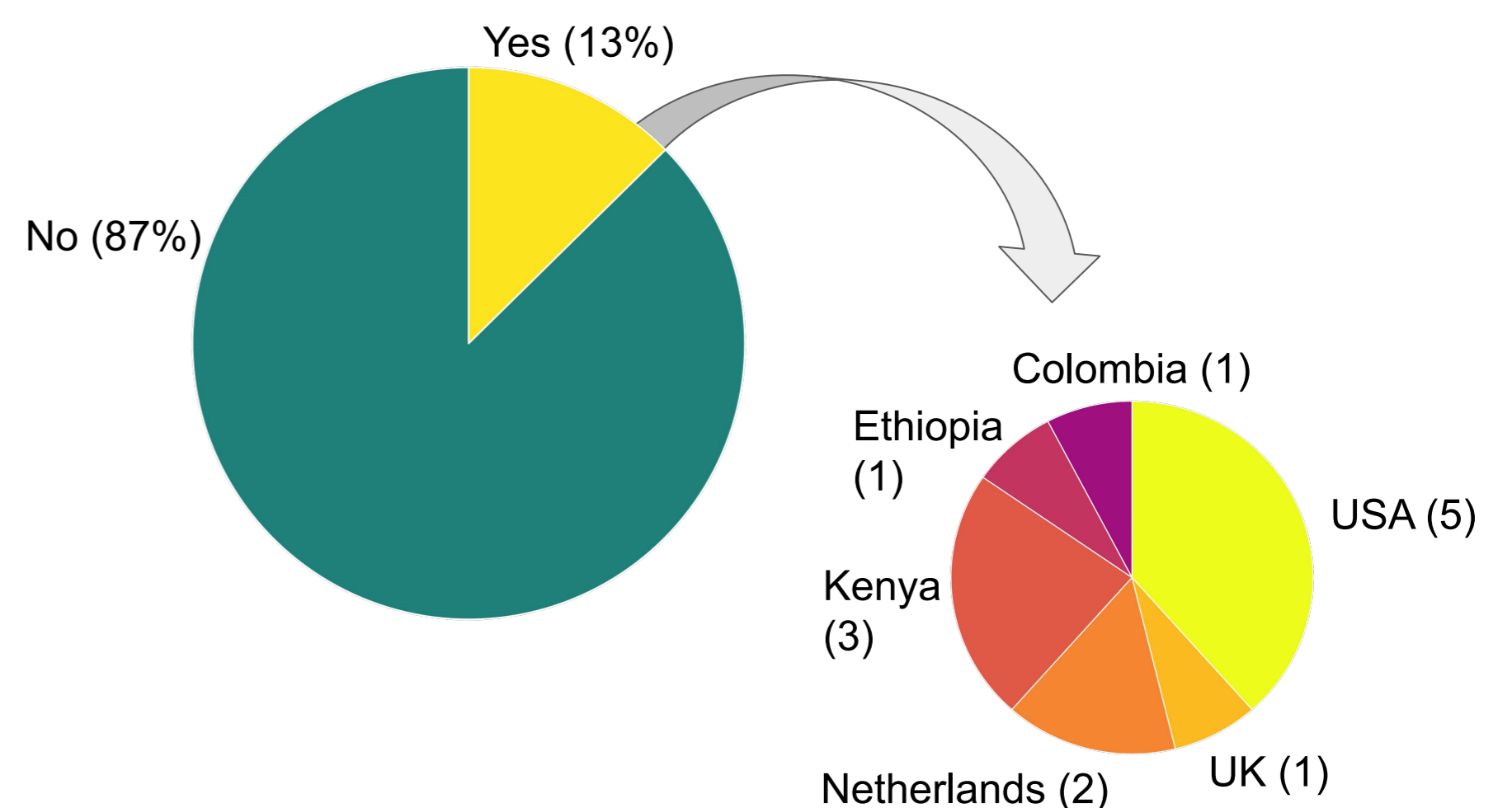
Types of original research:



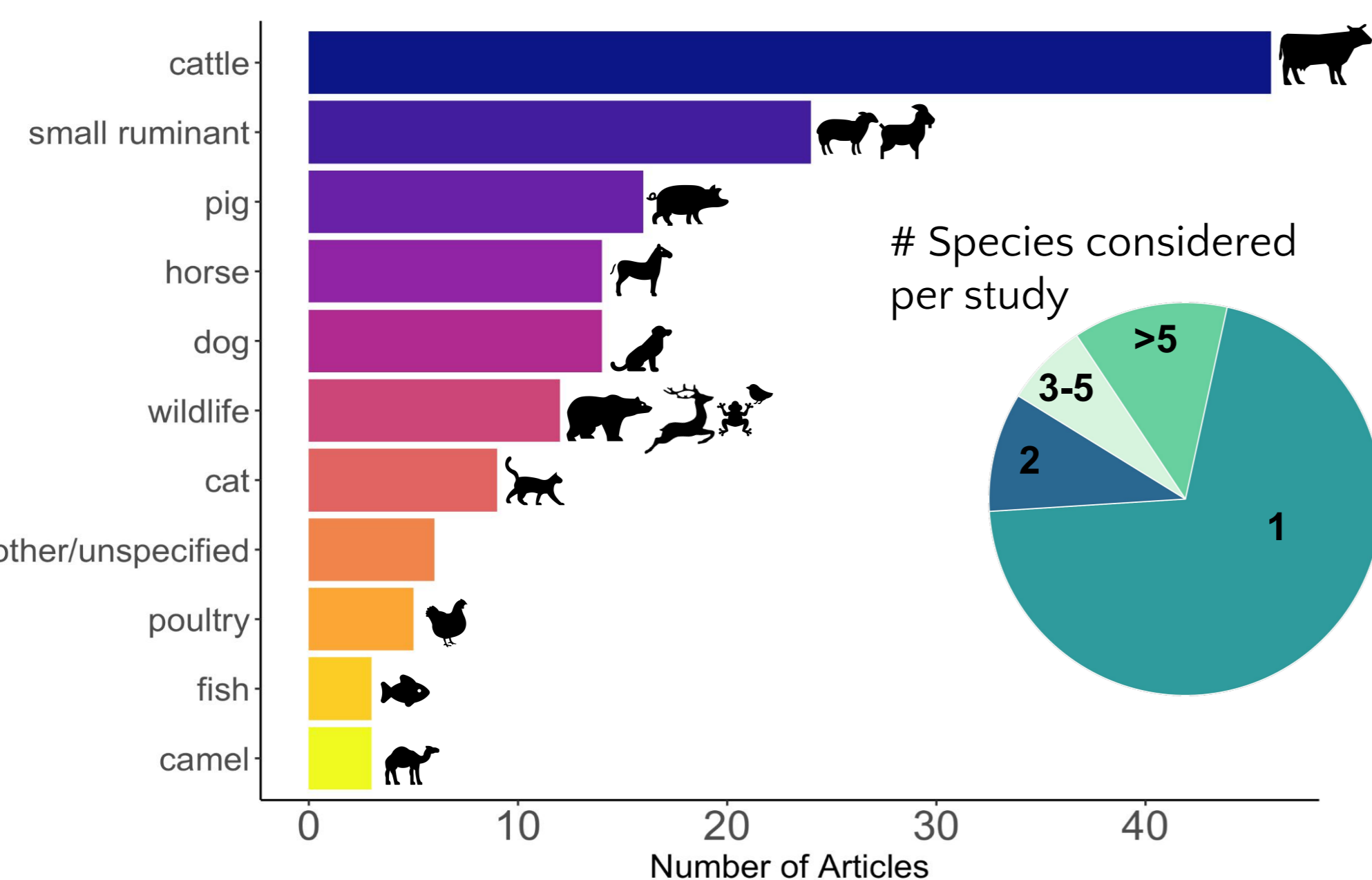
What kind of programs?



Are veterinary syndromic surveillance systems integrated with human health monitoring?



Animal Species Monitored



## Discussion / Conclusions

- Research in syndromic surveillance includes 27 countries but most were in **western Europe** and **North America**
- In addition to **animal health**, some syndromic surveillance systems are also implemented for **food safety** or **wildlife conservation**
- Few studies integrate multiple animal sectors or species
- Systems integrated with **human health** are disproportionately based in the **USA** due to historical focus on early warnings of (bio)terrorism
- Our results are limited to syndromic surveillance systems mentioned in peer reviewed articles, others certainly exist
- **Next steps**: quantifying relationships, integration of data from review articles, comparing methods, organization and operation, identifying common challenges, areas of improvement, and recent developments