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Eidgenössisches Departement des Innern EDI
Bundesamt für Lebensmittelsicherheit und Veterinärwesen BLV

IS ABV – collecting AMU data from veterinarians, example from Switzerland

WOAH Animuse-Workshop – Nov. 2023

Anaïs Léger, FSVO

Strategy Antimicrobial resistance

- Strategy developped with Federal Offices for Health, Animal Health, Environment and Agriculture
- Written in 2013-2015 with all actors
- Actions then included in law and ordinances

- 8 main fields of actions such as surveillance, prudent use of AB, Information and Formation… for all sectors. Including:
  - Data collection in AB sales and use in animal health

IS ABV – a webtool

IS ABV
Informationssystem Antibiotika in der Veterinärmedizin

- IS ABV = information system for antibiotics in veterinary medicine
  - Oral group treatments for livestock in October 2019
  - Mandatory for all animals in January 2020

- Electronic Submission from the veterinary practices
  - automated, through practice software
  - manual, via online form

- Data we collect: species and production type (Livestock), number of treated animals, type of prescription, animal weight (Pets), preparation and given amount of preparation, number of treatment days, dosage, treatment indication

IS ABV – Data flow

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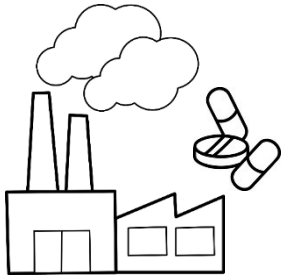

Pharmaceutical industry – licence holders

Sales data

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Datawarehouse

AMU - prescriptions

Vet practices / clinics

Health management

Benchmark

Benchmark

Farms

FSVO

- Annual report
- International comparison

Cantonal vet services

- Insight of data vets & farmers
- Introduction and monitoring of measures

Research

- Monitoring of resistance situation compared to antibiotic consumption.
- Targeted approaches: Problem areas, prevention

Annual report - 2021

- Annual report
  - 2 main chapters: pets and livestock + short insight per species
  - All AM classes vs. critical AM classes
  - Presentation and discussion with stakeholders (vet association)

- Publication in autumn
  - “cleaning” of data (> 15x median + manual checking)
  - Analyses
  - Automatised reports (online dashboard?)

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Automated Anomaly Detection Within The Antibiotic Prescription Surveillance System (IS ABV) Of The Swiss Veterinary Service

Work from Guy Schnidrig
guy.schnidrig@blv.admin.ch
guy-alain.schnidrig@unibe.ch

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Experts

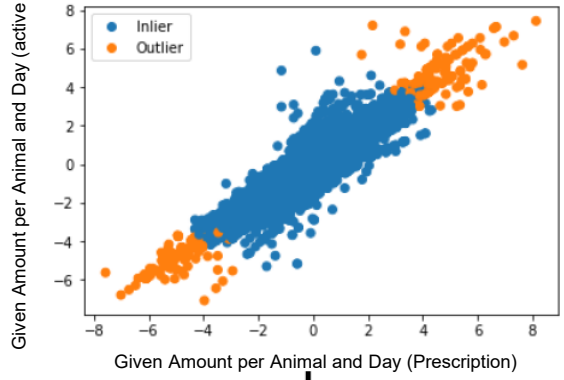
Validation

Final Model

Preparation

Voting

P_1 C_1
P_2 C_2
P_n C_n



Feedback

C_n = Classifier
P_n = Probability

Aims

- Identify and tag **implausible prescriptions**
- Develop an automated **anomaly detection process**
- Create a **curated** IS ABV **dataset** for further research projects

Report: Cantonal Veterinary Office

- Reports for the executive veterinary offices
  - Before a practice visit -> prints the reports
  - Assists in controlling vet pharmacies

- Prescription report
  - All prescriptions within their canton
  - Descriptive statistics

- Quality control report
  - Displays prescription that:
    - Show deviations from the expected content
    - Exceed certain norms
    - Contain implausible information

Report: Farms

- ABIDAT Website
  - Personal access per farm
  - Data per species and category of use (ex. dairy, piglets)

- List of all prescriptions they received
  - Ensure data quality
  - Enhance discussions with veterinarians
  - Feedback from AMU at farm level

- Benchmarking (not yet available for all species)

Report: Veterinary Practices

- Monthly PDF Report for every CH practice
- Contains a list with all prescriptions

- Tags unusual prescriptions or potential errors
  - Quantity (mg) calculated / Quantity given (mg)
  - Duplicates: identical prescriptions too close to another one
  - Implausible indication; ex. vaccination, birth defect, …
  - Dispensing on stock with critical antibiotics: rare, and only allowed with special treatment plan
  - Treatment days 50 +: unusual therapy length

- Aim: improve data quality!

Benchmarking

- At farm level
  - Per species and category of use (ex. dairy, laying hens…)
  - Online form (ABIDAT Website)
- At practice level
  - Pilot BM in 2023 for pets only

- Factor for comparison: Animal treatment index/year

$$\mathbf{ATI} = \frac{\mathbf{AT} * \mathbf{AI} * \mathbf{TD}}{\mathbf{Ø\ Animals}}$$

AT = Number of Animals Treated
AI = Number of Active Ingredients
TD = Treatment Days (incl. Active Substance Effective Time)
Ø Animals = Average number of Animals on the Farm or Average number of animals consulted per year

IS ABV
Informationssystem Antibiotika in der Veterinärmedizin

Anaïs Léger
anais.leger@blv.admin.ch

Thanks!