December 2022

ANNUAL PROGRESS REPORT 2022

RESPONSIBLE USE OF MEDICINES ALLIANCE

RUMA

COMPANION ANIMAL & EQUINE

Contents

About RUMA CA&E

Inspired by the success of the UK farm animal sector in reducing antibiotic use during the past five years, the recently formed RUMA Companion Animal and Equine Alliance (RUMA CA&E) will draw on the agriculture sector learnings to help further protect important medicines for future human and animal use.

Created from the leadership and vision of the Responsible use of Medicines in Agriculture (RUMA) Alliance, which has helped to halve the use of antibiotics to treat UK farm animals and has seen the use of Highest Priority Critically Important Antibiotics in animals reduce by 79% since 2014, the RUMA Companion Animal & Equine (RUMA CA&E) Alliance has been established to define the principles of responsible use of medicines in the companion animal and equine sectors with a view to contributing positively to the One Health agenda.

This new collaboration covers the responsible use of medicines in dogs, cats, rabbits, small mammals, exotic animals kept as pets, and equids. The aim is for the UK to lead the way in these sectors through evidence-based and measurable activities that will promote and enhance stewardship. RUMA CA&E will focus initially on the responsible use of antibiotics.

The Alliance will:

- Agree and define, through effective consultation with stakeholders, areas to establish specific targeted activities and research that will form the basis of agreed sector specific Key Performance Indicators (KPI's). These KPI's will ensure that specific goals are set, and efforts are focused in the appropriate areas to demonstrate progress:
  - Strategic KPI's for industry level reporting
  - Practical KPI's relevant to practitioners that will inform organisation or practice-wide activities
- Assist stakeholders, associations, and organisations across the sector to develop, endorse, implement, and raise awareness of guidance and protocols on the stewardship and responsible use of medicines within the companion animal and equine sectors. The protocols and guidance will be practical, drive positive behaviour change, align with KPI progression, and protect patients and practitioners alike
- Provide evidence of progress from the companion animal and equine sectors towards achieving the government 20-year vision and five-year national action plan for how the UK will contribute to containing and controlling AMR
- Provide a focal point of expertise and advice for government, regulatory and technological consultation when considering the development of strategies, legislation, regulations, codes and technologies relating to the companion animal and equine sectors

[1] RUMA Companion Animal & Equine. RUMA CA&E (rumacae.org.uk)

[2] RUMA. Home - Responsible Use of Medicines in Agriculture Alliance (ruma.org.uk)

Vision

For the UK to lead the way in the responsible use of medicines in the Companion Animal and Equine sectors, through evidence-based and measurable activities that will improve the stewardship of medicines and optimise animal health and welfare, as well as related human and environmental health.

Mission

01. To promote, enable and measure responsible use of medicines in the Companion Animal (including exotic animals kept as pets) and Equine sectors

02. To promote evidence-based activities that influence and encourage behaviours that are consistent with the responsible use of medicines

03. To engage stakeholders from across the Companion Animal and Equine sectors to promote collaborative activities that influence and encourage all parties to take ownership, responsibility and accountability for the stewardship of medicines

Gwyn Jones,

RUMA CA&E Chair

Introduction

"The formation of RUMA CA&E in 2020 was inspired by the success of UK farm animal sectors in reducing antibiotic use through the work of The Responsible use of Medicines in Agriculture (RUMA) Alliance which, through voluntary multi-sector collaboration, has helped to halve sales of antibiotics to treat UK farm animals.

In agriculture there has been a focus for a number of years on AMR and the responsible use of medicines with regard to the food chain and the environment. Until now though, there has been less focus on companion animals and equids.

RUMA CA&E will draw on the learnings from UK agriculture to help protect important medicines for future human and animal use.

This new collaboration covers the responsible use of medicines in dogs, cats, rabbits, small mammals, exotic animals kept as pets, and equids. The aim is for the UK to lead the way in these sectors through evidence-based and measurable activities that will promote and enhance antimicrobial stewardship.

RUMA CA&E is focusing initially on the responsible use of antibiotics in dogs and cats, but work is also starting in the equine sector. As well as looking at practice and individual level insights on prescribing habits, RUMA CA&E will also look at guidance, audits and evidence-based protocols.

There are lessons we can learn from the farm animal sectors, but we need to recognise that the companion animal, exotic and equine sectors are very different. Pets are often seen and treated as family members and there is a very different dynamic at play compared to agriculture. Looking at dogs specifically, over the years they have moved from the kennel into the house and even into the bedroom in many households. Sharing the same home and space means usually sharing of the same bugs.

Antibiotic use in the pet and equine sectors is very different to agriculture. One notable difference is the close proximity which exists between pet and owner which increases the potential for micro-organisms and bacteria to transfer from pets to humans (and vice, versa). This means that even low use of antimicrobials in these sectors could lead to resistance to key medicines, through the transfer between owners and pets or horses. In the interests of One Health, this is why the CA&E sectors are a very important consideration when we are thinking about antimicrobial stewardship and AMR.

There has been a lot of work done over the past year to define the targets and measures for dogs and cats which resulted in a very successful roundtable event in the summer, helping to consolidate the thinking and approach needed to defining realistic metrics. In tandem, it has been important to make sure RUMA CA&E has an infrastructure in place that is fit for purpose which has involved strengthening our financial sustainability, enhancing our membership base and establishing our communications channels and platforms which has seen the creation and launch of our website and social platforms. We also had the opportunity to participate in the RUMA Agriculture conference (Nov 2021) and have enjoyed visibility in key sector media to help drive more support and awareness for our work.

The important building blocks we are putting in place will provide benchmarks and baselines and, in time, evidence of progress towards achieving the Government's 20-year vision and five-year national plan for how the UK will contribute to containing and controlling AMR.

Whilst we acknowledge there are many complex challenges to take into account across the companion animal and equine sectors, what is recognised is the opportunity that exists to make a positive impact on AMR and protect the role of antibiotics in both human and animal health for the future.

I would like to thank the RUMA CA&E Alliance, Board and Targets and Measures Group for their ongoing commitment and efforts. I would also like to thank the Veterinary Medicines Directorate (VMD) and the CVO for their support in helping to establish this important new Alliance and to NOAH and the BVA for their sponsorship and support of our roundtable event earlier this year."

Daniella Dos Santos,

Small animal and exotic pet vet, past President of the BVA, and Chair of the RUMA CA&E Targets and Measures Subgroup

"Work has been underway over the past 12 months to define national measures and we now have a defined set of foundation metrics from which to work from. This is an ongoing journey of refinement however, and once all measures become embedded, realistic benchmarks or targets can be set which will acknowledge that this is a complex area with many different factors at play including social demographics, economic demographics, licensed products availability, and species considerations.

Unlike the agriculture sectors farm, herd, and flock level decisions on antimicrobial usage can have a big impact on many animals, on whether to use antibiotics in the first place, and which ones to use. In the CA&E sectors, there has to be consideration at every interaction between vets and clients, and their pets, as to which antibiotic to use, if appropriate, duration and what dose, and this has to happen in consulting rooms and stable yards every single day, for every single interaction that takes place.

This means that the concept of antimicrobial stewardship and antibiotic resistance has to be at the forefront of the mind for every decision made in every consultation. We are therefore looking to promote a culture where that approach is the default in consulting rooms, stable yards and operating theatres and we are working closely with key stakeholders to drive this forward.

RUMA CA&E also recognises that there will be a lot of work to do to understand and manage client expectations about when and why it is appropriate to use or not use antibiotics, so client education and support will form a key part of RUMA CA&E activity in the future.

Other considerations in the companion animal and equine sectors include:

Affordability: A vet may have made a decision about the right treatment, but they may have to adapt their approach depending on whether an owner can afford certain treatments or not

Owner compliance: The success of treatments is often dependent on owners being able to successfully administer medication in the right way for the right amount of time back at home or in the stable yard

Market influences: The marketplace can be affected at times by product availability issues which can result in limited availability or in some cases, products may be withdrawn. There are also price differentials to consider which can impact client affordability

I am delighted with the progress that has been made so far in defining, through effective consultation with stakeholders, the areas to establish specific measures, activities and research, which will form the basis of agreed sector targets in the near future. These targets will ensure specific goals are set and efforts focused in the appropriate areas to demonstrate success.

We want RUMA CA&E to become a hub for antimicrobial stewardship - the place where all the research and guidance exists in one place."

The Journey so far

Formation of RUMA CA&E

RESPONSIBLE USE OF MEDICINES ALLIANCE
RUMA
COMPANION ANIMAL & EQUINE

Dogs & Cats
Targets and Measures

About the RUMA CA&E Targets and Measures Working Group (T&MWG)

The Targets and Measures group is a small working group of companion animal experts who came together to formulate a set of realistic and achievable targets. The group quickly concluded that multiple metrics are needed to communicate the whole story of antimicrobial use in the companion animal and equine sectors.

An issue the working group identified early on was the concern around unintended consequences of setting targets, that could drive behaviours that whilst on paper look like an improvement in responsible use of antimicrobials, in reality could have animal welfare impacts or be counter-productive to the aims of antimicrobial stewardship.

The ethos of the group is:

- Led by the sector for the sector
- Set up achievable sector specific targets
- To promote work already being done

The group recognised early on the difficulties they would face which include:

- Difficulty in collecting data
- Differences and inconsistencies in data recording
- Off licence and specials use
- The varying client demographics across the country: charity vs private first opinion vs referral for example
- The even greater complexities in the exotic and equine sectors

The T&MWG identified three focus areas:

1. Reducing the inappropriate use of antibiotics in the companion animal sector
   - National and practice level targets
2. Data collection and protocols at practice level
   - Determining standardised methodology for benchmarking
3. Promoting best practice and knowledge exchange
   - Training and potential gaps. Monitoring of uptake and impact of training

There are two core purposes for monitoring antibiotic use:

National monitoring – this is a core focus for RUMA CA&E. The T&MWG group has explored the challenges in collecting veterinary practice prescribing data for national monitoring. For example, practice management systems and how they are used vary between practices, notes are recorded differently, medicines are described differently and tracking off licence use is difficult. We will be working to promote more standardisation and working with the organisations who collect practice data (SAVSNET/ VetCompass) to interpret the data collected. In the meantime, we will use antibiotic sales data as an estimate of antibiotic use in dogs and cats. This is collected by the Veterinary Medicines Directorate (VMD) and represents what is sold by the Marketing Authorisation Holders (MAH's).

Benchmarking use at practice level - this is not the remit of RUMA CA&E but it is our role to help improve standardisation of medicine recording and amplify tools available to help practices with this.

The National Metrics identified

mg/kg	**total systemic sales**	separated out by dogs and cats
mg/kg	**topical use**	separated out by dogs and cats
mg/kg	**topical use HP-CIA**	separated out by dogs and cats
Av. Number of days treated/animal :	**systemic use**	separated out by dogs and cats o Total use and Highest Priority Critically Important Antibiotics (HP-CIA's) o N.B. This will look at trends and not individual prescribing behaviours

Metrics explained

Mg:

- Relates to the weight of antibiotic active ingredient
- Calculated by multiplying the volume sold (e.g. tablets, mls) with the active ingredient per unit (e.g. mg/tablet, mg/ml)

Kg:

- Relates to the weight of the animal population
- Calculated by multiplying the number of dogs and cats (using PDSA data) with the average weight of dog and cat (currently estimated using SAVSNET data)

Average number of days treated/ animal (DDDVet - Defined Daily Dose for animals, the assumed average dose per kg animal per species per day):

This is calculated (for each active ingredient and route of administration and for both dogs and cats) by using an assumed average dose per animal per day. See appendices for more information on methodology.

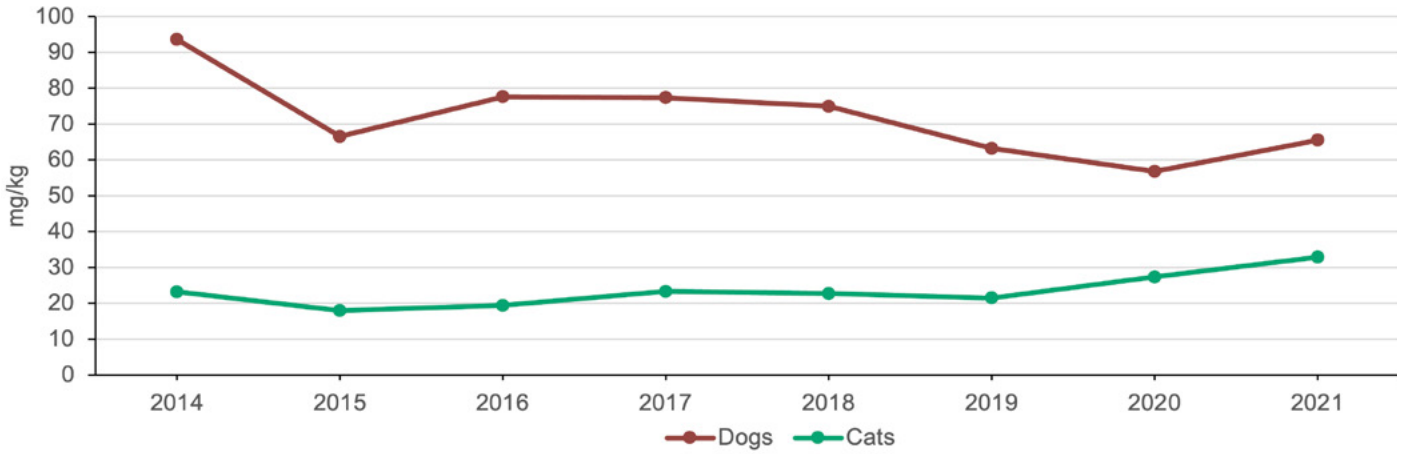
When it comes to separating data for cats and dogs, only products licensed for use in small animal practice will be used and this will be separated into dogs and cats using estimates of relative volumes of use provided to the VMD by the pharmaceutical companies.

Conclusions of the T&MWG

The group recognised that there is a need to start somewhere and that there will be benefits and disadvantages to the chosen metrics, as summarised below. The group is committed to continually reviewing the targets and measures; those presented in this report are a starting point on the journey for the sectors and they are likely to evolve over time.

Systemic mg/kg:	
Benefits:	**Disadvantages:**
• Commonly used by other sectors (provides some consistency) • Not relying on any assumptions	• Long-acting products (e.g. cefovecin) relatively under-represented • Low dose rate products (e.g. fluoroquinolones) relatively under-represented • High dose rate products (e.g. metronidazole) relatively over-represented

Active ingredient (mg/kg) of antibiotics sold for use in dogs and cats, 2014 to 2021



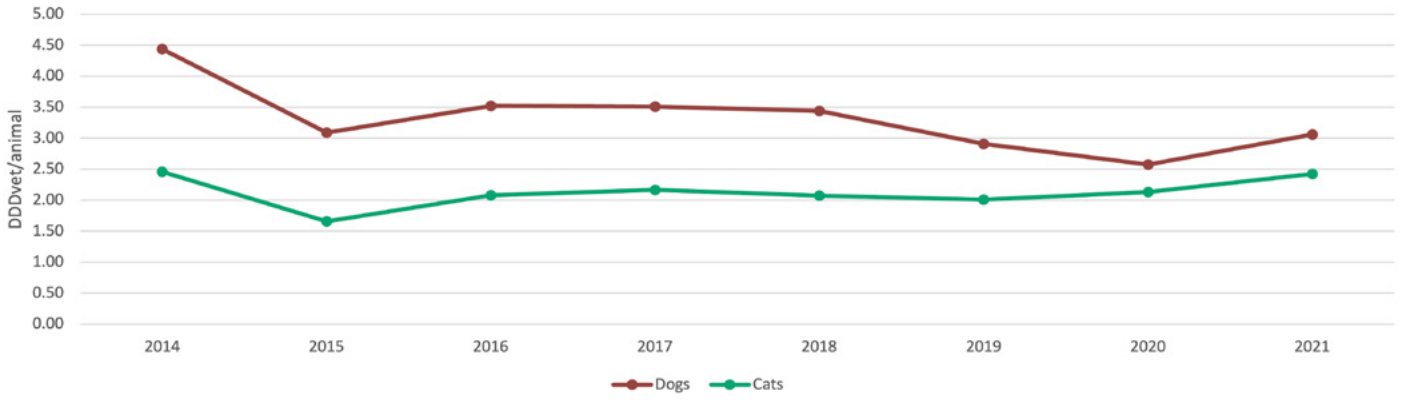
	Total mg/kg							
Species	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Dogs	93.6	66.5	77.6	77.3	74.9	63.2	56.7	65.5
Cats	23.2	17.9	19.4	23.3	22.7	21.5	27.3	32.9

In dogs, antibiotic use had decreased every year since 2016, but showed an increase between 2020 and 2021. In cats, antibiotic use also increased for the second year running, having previously shown consistent usage levels between 2014 and 2019. Whilst this metric is consistent with that used in other sectors, there are a number of disadvantages to using it in the companion animal sector. We intend to keep reporting on this metric but our focus areas will be led more by the DDDVet results.

Average number of systemic daily doses per animal:

Benefits:	Disadvantages:
• Long-acting products (e.g. cefovecin) more realistically represented • Low and high dose products more realistically represented	• Relies on standardised daily dose rates, which provides an average view of usage at those dose rates. This does not take into account variations in dose rate which may be used clinically in individual patients

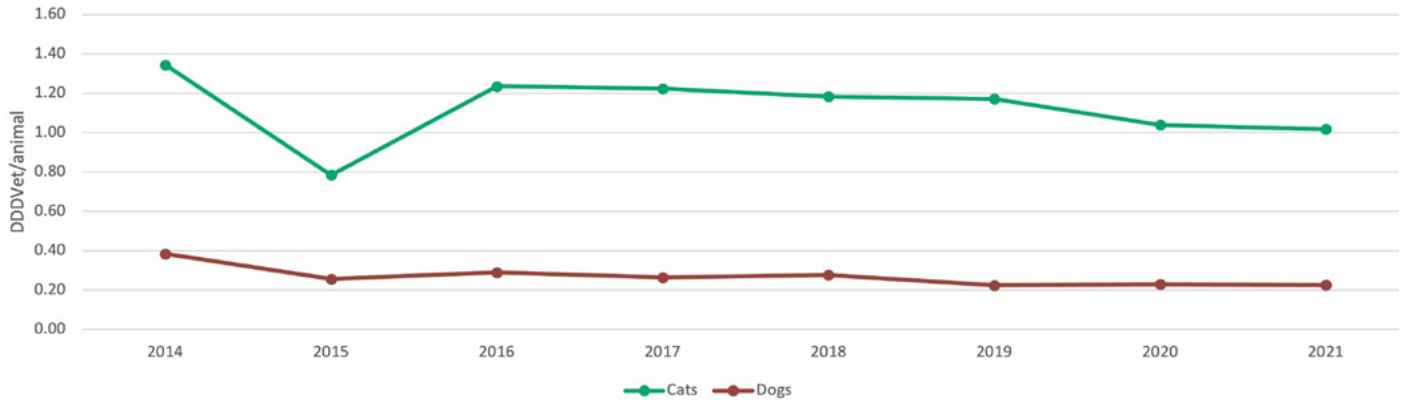
Active ingredient (DDDvet/kg) of antibiotics sold for use in dogs and cats, 2014 to 2021



	2014	2015	2016	2017	2018	2019	2020	2021
Dogs	4.44	3.09	3.52	3.51	3.44	2.91	2.58	3.06
Cats	2.46	1.66	2.08	2.17	2.07	2.01	2.13	2.42

The DDDVet data shows the same trends as described for mg/kg.

Active ingredient (DDDVet/animal) of HP-CIAs, sold for use in dogs and cats, 2014 to 2021



	2014	2015	2016	2017	2018	2019	2020	2021
Dogs	0.38	0.26	0.29	0.26	0.28	0.22	0.23	0.23
Cats	1.34	0.78	1.24	1.22	1.18	1.17	1.04	1.02

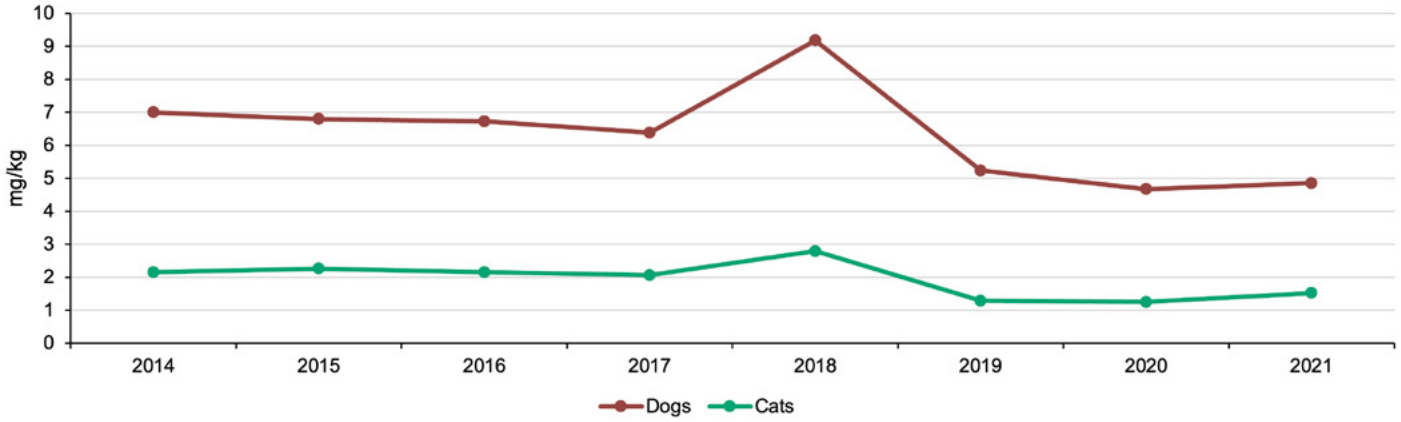
It is encouraging to see that use of HP-CIA products is reducing in both dogs and cats. However, use of HP-CIA's in cats remains high.

Topical mg/kg:

Benefits:

- Important to monitor as commonly administered in small animal practice

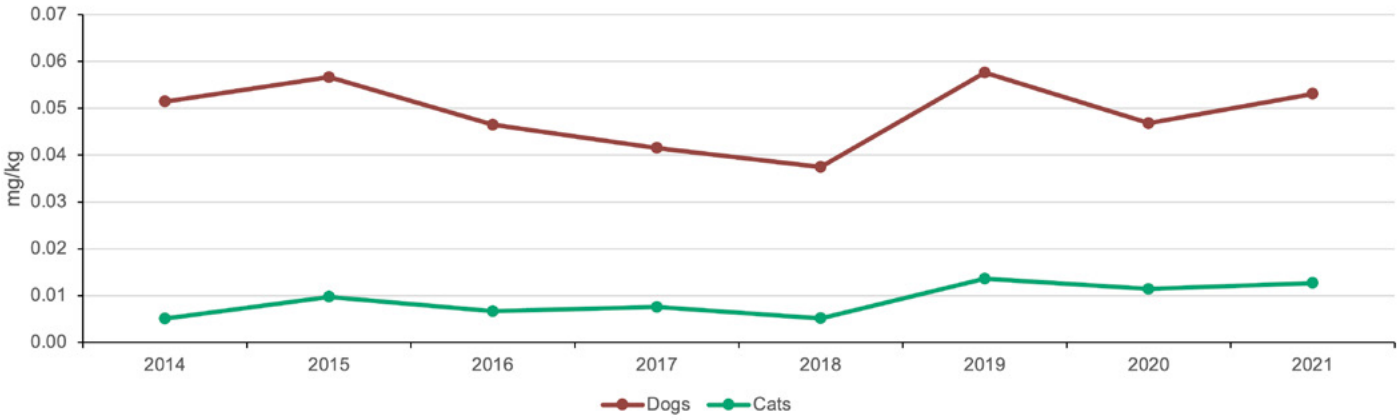
Active ingredient (mg/kg) of topical products sold for use in dogs and cats, 2014 to 2021



Total mg/kg								
Species	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Dogs	7.0	6.8	6.7	6.4	9.2	5.2	4.7	4.9
Cats	2.1	2.3	2.2	2.1	2.8	1.3	1.2	1.5

The companion animal sector utilises topical antimicrobial therapy more frequently than the other animal sectors, particularly in the management of ear and skin conditions. Whilst the application is far more targeted to the infected area, there remains exposure of pathogens to antibiotics, challenges in compliance and the possibility that active ingredients may be absorbed systemically. The T&MWG felt it was important that these trends were monitored in this sector.

Active ingredient (mg/kg) of topical HP-CIA products sold for use in dogs and cats, 2014 to 2021



Total mg/kg								
Species	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Dogs	0.051	0.057	0.046	0.042	0.037	0.058	0.047	0.053
Cats	0.005	0.010	0.007	0.008	0.005	0.014	0.011	0.013

There are a number of topical products containing HP-CIAs in use in the Companion Animal sector which provide valuable options to clinicians in the face of some conditions which can be difficult to treat. It is encouraging to see that the rate of use is far lower than the overall topical use, although their use appears to have increased over the past few years. The responsible deployment of these treatment options through good antimicrobial stewardship is important so that they remain efficacious for the future and don't contribute to the development of wider resistance.

Data sources:

For sales – VMD VARSS

For weight (kg) – SAVSNET data, using median data from dogs and cats aged over 18 months old

For population data - PDSA PAW Report for population data

Scope for change: clinical scenarios

The T&MWG feel it is part of RUMA CA&E's remit to play a role in the reduction of HP-CIA use, and to establish in which conditions HP-CIAs are most commonly prescribed.

Through input from RUMA CA&E stakeholders including the T&MWG and attendees at the roundtable meeting, the following clinical scenarios have also been identified as those to prioritise, based on where it is considered there is the greatest scope to improve antibiotic stewardship, particularly stewardship of HP-CIA use:

- Cat bite abscess
- Kennel Cough
- Acute diarrhoea
- Cat Flu

Next steps

The work of the T&MWG and the input from attendees at the roundtable and Alliance and Board members has created a valid set of metrics for dogs and cats which will now be used to form the foundation of ongoing work.

- The creation of an Independent Scientific Group (ISG) for RUMA CA&E (an ISG is a key part of the RUMA Agriculture infrastructure and has played a key role in the progression of UK agriculture's reductions in antibiotic use)
- Practice management systems - understanding the capabilities for standardising data and reporting
- Drug availability
- Prevalence data on conditions that need antibiotics
- Laboratory Data
  - Exploring opportunities for standardising in the future
  - Defining what makes up "clinically relevant" results
  - Culture and Sensitivity testing and establishing the levels of resistance in the CA&E sectors
- Consideration must also be given to the pet owner as a key stakeholder in this journey and understanding how best to represent their views is a key task for the future

RUMA CA&E Board and Alliance Members

RUMA CA&E Board

Gwyn Jones	Chair
Steve Howard	Secretary General
Dawn Howard	Treasurer
Ian Ramsey	Past president BSAVA, Companion Animal Rep
Sarah Smith	BEVA, Equine Rep
Daniella Dos Santos	BVA, Working Group Lead
Catherine McLaughlin	RUMA Agriculture Chair
Mary Bawn	Communications Manager

Alliance Members

BEVA

BSAVA

BVA British Veterinary Association

RVZS

NOAH supporting the future of animal health

pdsa THE VET CHARITY FOR PETS IN NEED

RCVS KNOWLEDGE

RVC Royal Veterinary College University of London

RESPONSIBLE USE OF MEDICINES IN AGRICULTURE ALLIANCE RUMA

SAVSNET

UNIVERSITY OF LIVERPOOL

VetCompass Your Knowledge Hub

Veterinary Medicines Directorate

VSC Veterinary Schools Council

Alliance Supporters

Scottish Government Riaghaltas na h-Alba gov.scot

Llywodraeth Cymru Welsh Government

Abbreviations & glossary

AMR	Antimicrobial Resistance
BEVA	British Equine Veterinary Association
BSAVA	British Small Animal Veterinary Association
BVA	British Veterinary Association
BVZS	British Veterinary Zoological Society
DDDVet	Defined Daily Dose for animals, the assumed average dose per kg animal per species per day
MAH's	Marketing Authorisation Holders
NOAH	National Office of Animal Health
PDSA	People's Dispensary for Sick Animals
RCVS Knowledge	Royal College of Veterinary Surgeons – Knowledge (The knowledge hub for veterinary professionals)
RUMA	Responsible use of Medicines in Agriculture Alliance
RUMA CA&E	Responsible use of Medicines Alliance – Companion Animals & Equine
RVC	Royal Veterinary College (University of London)
Savsnet	Small Animal Veterinary Surveillance Network (University of Liverpool)
T&MWG	Targets & Measures Working Group (RUMA CA&E)
Vet Compass	The VetCompass Search Engine indexes millions of clinical records collected from primary practices and referral centres. Researchers use these records to create an evidence-base. The evidence is used by vets to improve the health and welfare of animals.
VMD	Veterinary Medicines Directorate
VSC	Veterinary Schools Council

Appendices

Average number of days treated/ animal

This is calculated (for each active ingredient and route of administration and for both dogs and cats) using the method below:

$$\frac{\text{Total amount of active ingredient (mg)}}{\text{(DDDVet (mg/kg/day) * total animal population weight at risk (kg))}}$$

The total amount of active ingredient and total animal population weight at risk is calculated in the same way as for the mg/kg calculation. DDDVet represents the average dose per kg animal per species per day. These standard daily doses are extracted from the Summary of Product Characteristics (SPC) for each antibiotic product. If there is a dose range, then the lowest dose was chosen, and where the dose rate varies between products with the same active ingredient/ route of administration, then the median dose rate was selected. For long acting products, the DDDVet is calculated by dividing the daily dose rate with the length of activity for that product. A full list of the DDDVet figures used for each active ingredient/ route of administration can be found in Table S1.3.1 of VARSS Supplementary Material 1.

RESPONSIBLE USE OF MEDICINES ALLIANCE

RUMA

COMPANION ANIMAL & EQUINE

Published 9 December 2022