



A full review of online education resources available on antimicrobial stewardship for pet owners

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Background: Antimicrobial resistance (AMR) poses a significant threat to both human and animal health. Educational resources aimed at pet owners raise awareness of AMR and promote antimicrobial stewardship (AMS).

Objectives: To review available AMS educational resources for pet owners conveying key messages and fostering responsible antibiotic use.

Methods: A review was conducted on various educational materials targeted at pet owners. Key features assessed included content type, target audience, accessibility, engagement level and clarity of key AMS messages.

Results: A total of 16 resources targeting pet owners were identified. While many resources effectively communicated the risks of AMR and the importance of responsible antibiotic use, gaps in measurement of long-term behavioural change were noted. Resources often catered to engaged pet owners, potentially neglecting marginalized populations who may benefit from AMS education. Practical guidance on actions like proper disposal of unused medications was limited, although initiatives like the Antibiotic Amnesty campaign showed promise in promoting responsible practices.

Conclusions: Educational resources for pet owners on AMS show promise in enhancing awareness and promoting responsible antibiotic use. However, improvements in clarity, engagement strategies and addressing specific concerns of pet owners are necessary for greater impact. Further research is needed to assess long-term behavioural changes amongst pet owners in antibiotic use following exposure to these resources.

Introduction

Antimicrobial stewardship (AMS) has gained prominence at the highest levels of policy discourse due to the alarming rise of antimicrobial resistance (AMR). Highlighted specifically as a threat is bacterial AMR, with 1.14 million attributable and 4.71 million associated bacterial AMR deaths estimated globally in 2021. Without significant intervention, this is set to increase to 1.91 million and 8.22 million deaths respectively by 2050.¹

AMR threatens to compromise the effectiveness of critical medical treatments and poses a severe risk to both human and animal health globally. The World Health Organization (WHO), in collaboration with the Food and Agriculture Organization (FAO) and the World Organisation for Animal Health (WOAH), highlights education and awareness as key components of the Global Action Plan on AMR.² A central objective of this plan aimed

to ‘improve awareness and understanding of antimicrobial resistance through effective communication, education, and training’. A study by Jones *et al.*³ by vets reported that owner pressure and their expectations for a rapidly active treatment favour unjustified antimicrobial prescribing. Therefore, pet owners play a critical role in the fight against AMR, making it essential that they understand the principles of AMS and the judicious use of antimicrobials in pets.

With antibiotic development lagging behind the rapid emergence of multi-drug-resistant organisms, it is increasingly critical to adopt strategies that preserve the effectiveness of existing antimicrobials. One such strategy involves interventions aimed at raising AMR awareness and promoting responsible AMS behaviours amongst the public. Fostering a One Health initiative aligns with global trends in addressing AMR by recognizing the interconnectedness of human, animal and environmental health. This

approach encourages interdisciplinary collaboration to develop comprehensive strategies for preventing AMR.

Despite the importance of public education in AMR policy, there are questions about the effectiveness of existing educational resources aimed at the public.² Research shows that while awareness campaigns may successfully increase knowledge about AMR, they often fail to generate long-term behavioural changes. For example, even when the public are informed of the dangers of antibiotic misuse, challenges such as the perception of antibiotics as ‘quick fixes’ or poor communication with veterinarians can undermine the adoption of AMS principles. Moreover, the reliance on knowledge transfer alone fails to account for other factors that influence pet owners’ decision-making, such as cultural beliefs, economic constraints and the strength of the veterinarian–client relationship. Additionally, specific interactions surrounding AMS are difficult during the time constraints of a consultation, emphasizing the need for high-quality educational resources.^{4,5}

Additionally, much of the existing literature on AMS resources tends to focus on the design and content of the resources, with less emphasis on evaluating their impact on behaviour change. Studies that do assess the effectiveness of AMS education amongst the public tend to rely on short-term metrics, such as immediate knowledge retention, rather than long-term outcomes. The limited integration of social science perspectives in these assessments exacerbates this gap, as behaviour change requires a deeper understanding of the societal, emotional and relational factors that drive owner decisions.

This review aims to describe and evaluate the current availability of AMS resources for pet owners and assess how effectively these resources convey key AMS messages. It focuses on identifying existing gaps and providing insights into the design, content and potential for future educational interventions. While this review does not directly measure behaviour change, it is anticipated that it will further contribute to the broader understanding of AMS education in veterinary contexts. To the authors’ knowledge, there has been no recent investigation into the availability and quality of AMS educational resources designed specifically for pet owners.

Material and methods

Eligible educational resources related to AMS for pet owners were reviewed. One author works in a clinical tertiary setting, and the second works in private and charity primary care. The authors’ familiarity with the resources stems from direct involvement in clinical practice, veterinary education and professional networks addressing AMR. We included freely accessible, online veterinary AMS educational resources for owners or resources that were known to the authors. The educational resources listed in Table 1 were selected for this educational resource review. While the resources were identified based on professional knowledge and experience, to mitigate potential selection bias, we cross-referenced the identified resources with publicly available databases (e.g. veterinary association websites, government publications and scientific literature) to ensure a comprehensive representation of available materials.

Given the close physical contact and shared environment between owners and their dogs and cats, as well as the potential for

shared antimicrobial resistance, the authors chose to focus specifically on these pets. Resources for review were identified using the following search terms: ‘antimicrobial resistance’, ‘AMR’ and ‘antibiotic resistance’, each combined with the terms ‘pets’, ‘dogs’, ‘cats’ and ‘pet clients’. These terms were applied across the search engines Google, Yahoo and Microsoft Bing, as well as the Apple Podcasts mobile application to capture a diverse range of publicly accessible materials. In addition, some resources were included based on prior knowledge of the authors.

Resources were excluded if they were published in scientific journals, as these are generally not easily accessible to the public. Any resources that were derived from animal production were excluded.

Each resource was accessed and reviewed independently by both authors. There were no disagreements amongst the authors. Key qualitative descriptors of each guideline were recorded, including:

- Format of the educational resource: Resources were categorized by their format, such as posters, digital applications/tools, podcasts or written documents.
- Educational resource production source: The type of group responsible for producing the guidelines, whether it was a government body, national organization, veterinary society, university or another interested group.
- Accessibility: The availability of these resources online was assessed, along with whether the educational resources were available for free.
- Target audience: The anticipated level of base AMR knowledge (basic, intermediate and advanced), and literacy level appropriate for each education resource has been subjectively assessed, using the authors’ judgement, to offer an indication of the target audience.
- The authors assessed health literacy in terms of accessibility, clarity and the level of detail provided. This factor was evaluated by assessing whether the resources were written in language that is easily understandable for pet owners with varying levels of health literacy, whether complex medical concepts were adequately explained.

In addition to the general attributes, specific features of each guideline document were assessed, including:

- Principles of responsible AMR: whether the resources included general principles of responsible AMS, such as when antibiotics are necessary, was a key factor.
- Particular features of some resources have been highlighted to offer a more detailed insight where appropriate.

Results

The search strategy identified a total of 20 resources (Table 1). The eligible resources were available in different formats—eight were online website-based reading materials, seven were AMS clinical materials, and three were online videos/podcasts. A range of different groups were involved in development of educational resources including representatives from universities, governing bodies, veterinary societies and independent organizations. Direct involvement of a government agency was only recorded for two of 20 resources. Two resources were excluded as they related to production animals. Two resources were excluded due to an unclear target audience. This left a total of 16 resources for further review.

Table 1. The educational resources selected for this review

Education resource	Provider	Link
Antibiotic Amnesty 2024—client information	RUMA	https://rumacae.org.uk/wp-content/uploads/2024/07/Guidance-for-practices-how-to-take-part-step-by-step-guide.pdf
Antibiotic Awareness information sheet	North Downs Specialist Referrals	https://www.ndsr.co.uk/information-sheets/antibiotic-awareness/
Antibiotics—your role as a pet owner	BVA	https://www.bva.co.uk/media/2643/client_leaflet_5_-_antibiotics_-_your_role_as_a_pet_owner.pdf
Antibiotic use is changing. Talk to your veterinarian	AVMA	https://www.avma.org/resources/public-health/antibiotic-use-changing-talk-your-veterinarian
Antimicrobial (Antibiotic) Resistance in Dogs. Information for Dog Owners	AKC Canine Health Foundation	https://www.akcchf.org/assets/files/AKC-CHF-Antimicrobial-Antibiotic-Resistance-in-Dogs-Fact-Sheet.pdf
Antibiotic resistance factsheet	Davies Veterinary Specialists	https://www.vetspecialists.co.uk/fact-sheets-post/antibiotics-resistance-fact-sheet/
Antimicrobial use and resistance: FAQs for pet owners	AVMA	https://www.avma.org/resources-tools/one-health/antimicrobial-use-and-antimicrobial-resistance/antimicrobial-use-and-antimicrobial-resistance-pet-owner-faq
AMR Resources	IVC Evidensia and RUMA	https://ivcevidensia.co.uk/amr
Are you antibiotic aware?	BVA, BMA, Antibiotic Guardian, UKHSA, VMD	https://www.bva.co.uk/media/4761/bva_are_you_antibiotic_aware_poster_2019.pdf
Antibiotic Resistance ENOVAT	ENOVAT	https://www.youtube.com/watch?v=4ApEafN4dWU
Pet owner education—Awareness of Antimicrobial Resistance—Antibiotics	Ceva	https://www.ceva-gram.com/uk/Pet-owner-education
Antibiotic Research UK FAQ: Sometimes my dog has had to have antibiotics. This made me wonder whether my family could also get any antimicrobial resistance from my dog or vice versa?	Antibiotic Research UK	https://www.antibioticresearch.org.uk/ufaq/sometimes-by-dog-has-had-to-have-antibiotics-this-made-me-wonder-whether-my-family-could-also-get-any-antimicrobial-resistance-from-my-dog-or-vice-versa/
The Overuse of Antibiotics in Veterinary Applications	‘Take Control of Your Pet’s Health with Dr. Becker’ podcast	https://sites.libsyn.com/114394/the-overuse-of-antibiotics-in-veterinary-applications
Together we can #Beat the bugs!	Bella Moss Foundation	https://www.youtube.com/watch?v=mvTaN4tmIDk
Trust Your Vet on antibiotic treatment	BVA	https://www.flickr.com/photos/britishvets/albums/72157667464946828/
Vet Q&As: Pets and Antibiotics	PDSA	https://www.pdsa.org.uk/what-we-do/blog/vet-qas-pets-and-antibiotics

BMA, British Medical Association; ENOVAT, European Network for Optimization of Veterinary Antimicrobial Treatment; Q&As, questions and answers; VMD, Veterinary Medicines Directorate.

One peer reviewed article⁶ assessed the impact of an educational animation on owner’s opinions relating to antimicrobial prescribing and awareness of AMR via a randomized controlled trial. An animated story board was developed to inform pet owners of the threat posed by AMR and to encourage behaviours consistent with effective AMS. The animated film was iteratively designed with input from a panel of experts in the fields of human health-care, AMS and veterinary medicine. A survey was created, and owners attending six UK veterinary centres completed an agreement level survey of 20 questions using a Likert agreement scale.

Website online reading materials

Eight website-based reading materials were identified, three of which were frequently asked questions (FAQ) pages. Two of the FAQ pages originated from charity organizations, one from the

People’s Dispensary for Sick Animals (PDSA), a veterinary-specific organization, which provides veterinary care to poorer communities, and the other from Antibiotic Research UK, a non-veterinary-specific organization. The third FAQ page was from the American Veterinary Medical Association (AVMA), a professional body.

The PDSA FAQs addressed basic questions about antibiotics, AMR and ways to prevent the need for antimicrobials.⁷ They also provided scenarios regarding antibiotic prescription and usage. The Antibiotic Research UK FAQ answered questions on how AMR can spread between owners and pets, emphasizing infection prevention and proper use of prescribed medications. The AVMA FAQ covered the role of antimicrobials in animals, AMR and its prevention, providing more detailed responses that included some scientific terminology.⁸

Another web-based resource was a five-page factsheet for dog owners, produced by the American Kennel Club (AKC) Canine Health Foundation. This document covered the basics of

AMR, focusing on the consequences of pets becoming infected with antimicrobial-resistant pathogens; information on preventive measures was also provided. Scientific terms were explained in plain language, with examples included for clarification.⁹

The AVMA also provided a separate webpage titled ‘Antibiotic Use is Changing. Talk to Your Veterinarian’, which outlined steps veterinarians are taking to address AMR and highlighted the importance of owners following veterinary instructions regarding antimicrobial use.¹⁰

These resources were found within animal-owner sections of the respective websites and were likely aimed at pet owners seeking more information on AMR. However, as they were embedded amongst general animal health topics, they may have been accessed by owners with broader health-related interests.

Clinical practice AMS materials

Seven AMS materials for use in clinical practice were identified. These included resources for both physical practices and online platforms.

Two digital graphic toolkits were found. Independent Vetcare (IVC) Evidensia’s AMR social media toolkit,¹¹ created with the Responsible Use of Medicines Alliance (RUMA) provided a series of images for social media use, focusing on responsible antibiotic use, disposal and adherence to veterinary instructions. RUMA is a UK-based organization promoting responsible medicine use in agriculture, including veterinary medicine, to support animal health and public health.¹² These images were intended for use in IVC Evidensia practices. The British Veterinary Association (BVA), in collaboration with the UK government, produced a similar set of graphics for use in the 2018 ‘Trust Your Vet on Antibiotics’ campaign.¹³ These graphics were intended for display in practices nationwide, covering preventive healthcare, prescription adherence, and when diagnostics are necessary instead of antibiotics.

A BVA-produced client leaflet, ‘Antibiotics: Your Role as a Pet Owner’, was also identified. Available for download and practice use, it provided consistent messaging with other BVA resources. Similarly, North Downs Specialist Referrals (NDSR) developed a concise antibiotic information sheet for clients, available online, summarizing key information about AMR and antibiotic use.¹⁴

Davies Veterinary Specialists produced a more detailed client factsheet, available for download, which explained AMR in a question-and-answer format. The factsheet provided more scientific detail, supplemented by infographics to aid understanding.¹⁵

The Antibiotic Guardian campaign, led by the UK Health Security Agency, produced a poster titled ‘Are You Antibiotic Aware?’ This resource, aimed at veterinary practices and broader audience, emphasized that responsible antibiotic use guidelines apply equally to animals and humans.¹³

Additionally, the annual Antibiotic Amnesty campaign encourages clients to return unused or leftover antibiotics, and one of the resources relates to this campaign.¹⁶ Veterinary practices nationwide and community pharmacies across the Midlands region promote the return of unused or partially used antibiotic packs for safe disposal. Messaging is directed towards health professionals and the general public, particularly pet owners, to highlight the environmental consequences of improper disposal and the risks associated with using leftover antibiotics, whether for other people or pets.

Multimedia resources

Three short, animated videos were identified, both designed for use in general practice including an animated story board by Wright *et al.*⁶

The Bella Moss Foundation produced a 1 min animation titled ‘Together We Can #Beat The Bugs’, covering basic information on antibiotics and AMR, with a One Health perspective.¹⁷ Ceva’s 2 min animation, ‘Use Antibiotics Properly’, was part of the ‘guidance for the rational use of antimicrobials’ (GRAM) project, providing more detailed guidance on antimicrobial use, including dosage, frequency, duration and other advice. This video addressed both pet and family health, incorporating a One Health message.¹⁸

Lastly, a podcast episode from ‘Take Control of Your Pet’s Health with Dr. Becker’ was identified. The episode, titled ‘The Overuse of Antibiotics in Veterinary Applications’, discussed AMR, sources of infection, antibiotic side effects and alternative therapies. The podcast emphasized the importance of discussions between pet owners and veterinarians regarding antibiotic prescriptions. The podcast uses technical language, which may require the audience to have some prior scientific knowledge for full understanding.¹⁹

Discussion

These 16 educational resources, offer owners an introduction to key themes of veterinary AMS. They included a wide range of materials available across multiple platforms, including veterinary clinics, online web-based resources and social media (Figure 1). The resources appear well-designed to reach pet owners who are already engaged with veterinary care and are likely to seek out health information. Materials frequently highlight the need to only use antibiotics under veterinary supervision and emphasize the dangers of inappropriate antibiotic use in pets.

Given the absence of direct impact measurements in this review, it is challenging to determine whether these resources are effectively leading to reduced antibiotic prescription or use. A significant gap exists in measuring the real-world impact of these educational resources on pet owner behaviour and enhancing the understanding of AMS principles. While many resources reviewed provide clear, evidence-based information, there is no information available on how well pet owners understand and apply these principles in practice. Without follow-up studies or surveys assessing owner behaviour and knowledge retention, it is challenging to determine the real-world effectiveness of these educational efforts. Furthermore, indirect indicators, such as the continued high demand for antibiotics in routine veterinary care, suggest that AMS principles might not be fully understood by a significant portion of pet owners.

There are also concerns that the dissemination of these messages may be hindered by socio-economic and digital access barriers. Pet owners who rely on informal networks or possess lower health literacy may be less likely to engage with AMS resources, potentially missing vital information about the responsible use of antibiotics. As of January 2024, the UK had 56.2 million active social media users, with a penetration rate of 82.8%. However, the remaining 17.2% of the population may not be reached through these channels. This could perpetuate harmful misconceptions, such as the use of antibiotics for non-bacterial infections or hoarding leftover medications for future use.













 Educational Resource Review	Antibiotic Amnesty 2024 – client information	Antibiotic Awareness information sheet	Antibiotics – your role as a pet owner	Antibiotic use is changing	Antimicrobial (Antibiotic) Resistance in Dogs	Antibiotic resistance factsheet	Antibiotic resistance: FAQs for pet owners	AMR Resources	Are you antibiotic aware?	Antibiotic Resistance ENOVAT	Pet owner education	Antibiotic Research UK FAQ	The overuse of antibiotics	Together we can #Beat the bugs!	Trust Your Vet on antibiotic treatment	Vet Q&As: Pets and Antibiotics
 Anticipated duration	Short <4h	Short <4h	Short <4h	Short <4h	Short <4h	Short <4h	Short <4h	Short <4h	Short <4h	Short <4h	Short <4h	Short <4h	Short <4h	Short <4h	Short <4h	Short <4h
 Accreditation/Certificate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
 Language	English	English	English	English	English	English	English	English	English	Multiple languages	English	English	English	English	English	English
 Reusable/Download	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No
 Access	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free
 Resource type	v	i, v	v	i	i	v	i	v	v	iv	iv	i	iv	iv	v	i
 Source of resource	vi	vi	ii	ii	vi	vi	ii	ii, vi	i, ii	ii	ii	vi	vi	viii	i, ii	vi
 Focus of topic/resource	v	v	v	ii	ii, v	ii, v	ii	ii, v	v	ii	ii, v	ii	ii, v	ii, v	v	ii, v
 Target audience and setting	vii	vii	vii	vii	vii	vii	vii	vii	vii	vii	vii	vii	vii	vii	vii	vii
 Relevance/Applicability	HML, HIC	HML, HIC	HML, HIC	HML, HIC	HML, HIC	HML, HIC	HML, HIC	HML, HIC	HML, HIC	HML, HIC	HML, HIC	HML, HIC	HML, HIC	HML, HIC	HML, HIC	HML, HIC
 Setting of resource	2iii	2iii	2iii	2iii	2iii	2iii	2iii	2iii	2iii	2iii	2iii	2iii	2iii	2iii	2iii	2iii

Figure 1. General characteristics of resources included in the scoping review. Anticipated duration: (i) short <4 h; (ii) long >4 h; (iii) self-paced. Resource type: (i) website online reading material and other resource; (ii) website primarily aimed at news items; (iii) online/distance learning courses [massive open online course (MOOC), unfacilitated courses, online modules]/community of practice; (iv) webinars, video, online lectures, podcasts, animation video, maps, photos; (v) clinical practice antimicrobial stewardship materials: PDFs, PowerPoints, newsletters, infographics, pamphlets, e-portfolios, workbooks; (vi) guidelines, policies, handbooks; (vii) material from face-to-face non-e-learning courses (programmes, teaching materials, etc., from workshops, lectures, seminars); (viii) e-books via apps; (ix) public, media, political awareness and engagement materials; (x) commercial advertising (TV, radio, film, social media); (xi) evidence: by systematic reviews/meta-analysis in relation to antimicrobial resistance; (xii) datasets, compelling/illustrative case studies on antimicrobial stewardship; (xiii) patient stories. Source of resource: (i) governments; (ii) professional societies; (iii) universities/higher education institutes; (iv) healthcare facilities; (v) WHO; (vi) industry; (vii) insurance companies; (viii) non-governmental organizations (NGOs). Focus of resource: (i) principles/practice of prudent prescribing; (ii) antimicrobial stewardship principles/practices; (iii) guidelines/policies/pathways for syndrome management of infections; (iv) infection prevention/control; (v) implementation/behaviour change; (vi) evaluation/measurement; (vii) evidence gathering. Target audience: (i) doctors; (ii) pharmacists; (iii) nurses/midwives; (iv) non-medical managers; (v) public health; (vi) laboratory; (vii) infection prevention practitioners. Relevance/applicability: LIC, low-income country; LMIC, low- and middle-income country; HMLC, high- and middle-income countries; HIC, high-income country. Setting of resource: (1) pre-service (university, higher education institution); (2) service: (i) hospital; (ii) outpatient clinic; (iii) community/general practice; (iv) long-term care facility/nursing home; (v) hospital and ambulatory; (vi) other.

All 16 resources targeted pet owners directly, with formats ranging from fact sheets to multimedia content. Organizations like PDSA, Antibiotic Research UK and AVMA provide accessible, evidence-based information. However, some resources use overly complex language, possibly limiting their accessibility. Simpler materials, like those from the AKC, demonstrate the importance of plain language in communicating AMS effectively.

A study by Wright *et al.* (2023) created and evaluated the impact of an educational animation for owners. This resource not only supported clinical practices but also emphasizes the importance of raising pet owner awareness about responsible antimicrobial use. As demonstrated by Wright *et al.* (2023), owner compliance and understanding of AMS concepts are crucial for addressing AMR. Integrating resources that are both veterinarian-facing and owner-accessible reflects a trend towards comprehensive AMS approaches, where the role of the pet owner is essential.⁶

While the role of the pet owner remains essential, ongoing and further training amongst veterinary providers remains pivotal. Awareness of AMR and guidelines for rational antimicrobial use were found to be generally lacking amongst final-year veterinary students surveyed in Europe.²⁰ Without proper understanding and training, veterinary providers may unintentionally perpetuate the

misuse of antibiotics, which in turn would limit the effectiveness of any owner-directed AMS efforts.

Many resources focus primarily on explaining the dangers of AMR and promoting the responsible use of antibiotics, but they often overlook practical advice that may directly engage stakeholders with meaningful actions. One exception is the Antibiotic Amnesty campaign, which encourages pet owners to return unused antibiotics to prevent environmental contamination and reduce AMR risks.²¹ This ‘ecovigilance’ initiative demonstrates how practical, actionable advice can be effectively incorporated into AMS messaging, providing pet owners with concrete steps they can take to help mitigate global AMR threats.

A notable obstacle to the successful transmission of AMS messages is that pet owners, like the general public, often possess pre-existing beliefs regarding antibiotic use in pets. These beliefs may conflict with new information being presented.²² This challenge is compounded by the fact that pet owners are not ‘empty vessels’; they bring prior experiences and external influences into the educational process. Competing sources of information, such as advice from non-veterinary communities or anecdotal evidence, may dilute the intended message of the AMS resources.

Additionally, while these resources have been designed to be accessible, their reach seems to disproportionately affect pet owners with higher levels of education and access to online resources. This resonates with concerns about resource accessibility and efficacy in diverse populations, as highlighted in previous studies assessing the impact of AMS education.²² For example, pet owners in rural or underserved areas may not perceive AMS as directly relevant to their immediate priorities, or be as inclined to adopt recommended practices without a clear demonstration of personal benefit. This suggests that AMS materials, although carefully constructed, may struggle to engage certain groups unless antibiotic resistance is framed as an imminent threat to their pets' or the owner's own health.

Furthermore, as with broader public health communication challenges, there is a risk that AMS messaging—particularly if fear-based—could generate unintended negative consequences.²³ Overly alarming narratives may lead to pet owners avoiding appropriate antimicrobial treatment out of misplaced concern, while others may develop resistance to the messaging itself, viewing it as unnecessary or unrelated to their own pet care routine. The complex relationship between pet owners' trust in veterinary authority, personal priorities and the abstract nature of AMS benefits complicates the task of fostering enduring behavioural shifts.

Ultimately, these findings underscore the need for a nuanced approach to AMS education for pet owners. Resources must not only focus on raising awareness but also address the diversity of pet owners' experiences, knowledge gaps and priorities. Clear, practical guidance on how to incorporate AMS principles into daily pet care routines may be key to overcoming these barriers. Additionally, future resources could benefit from more personalized and empathetic narratives that emphasize the immediate relevance of AMS to pet health, while avoiding the pitfalls of fear-driven messaging.²³ Equally, veterinarians should ensure owners are well-informed about AMS principles and provide easy access to appropriate resources. Veterinarian–client relationships should aim to encourage ongoing dialogue and trust, which can motivate pet owners to engage with the resources provided. This dual approach is essential for enhancing the impact of AMS efforts.

AMS for pet owners plays a vital role in combating AMR within the context of veterinary health. The educational resources examined in this review offer valuable insights into fundamental AMS principles, such as the implications of AMR and the necessity for judicious antimicrobial use. These resources are designed to engage pet owners through diverse educational approaches, ensuring accessibility to crucial information. However, the true effectiveness of these resources requires further evaluation. Future research should focus on assessing how effectively these educational tools translate into behavioural changes amongst pet owners, particularly regarding their interactions with veterinary professionals and their decision-making about antimicrobial use.

Transparency declarations

None to declare.

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