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Culling dogs to control rabies in Uganda – an example of moral distress for a veterinary officer

Das Keulen von Hunden zur Tollwutbekämpfung in Uganda – ein Beispiel für moral distress einer Amtstierärztin

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Summary

Domestic dogs are the main source of human rabies deaths – approximately 60,000 annually occurring mostly in Africa and Asia. The World Health Organisation and its partners declared “zero human deaths due to canine rabies by 2030” as a strategic goal. In the context of rabies control, an ethical case scenario from the perspective of a veterinary officer in Uganda is presented. A practice-oriented tool, Ropohl’s responsibility checklist, is applied to structure the individual responsibility of the veterinary officer according to the six core questions. This ethical deliberation was performed in a workshop following a participatory approach. Based on the ethical deliberation it becomes evident, that the case scenario could be potentially described by moral distress. We suggest that a better understanding of personal responsibility, including its extent and its limits, would help veterinary officers to better cope with difficult and challenging situations.

Keywords: veterinary ethics, responsibility, ethical dilemma, culling of dogs, Ropohl

Zusammenfassung

Jedes Jahr sterben ungefähr 60.000 Menschen an Tollwut, die meisten davon in Afrika und Asien. Haushunde gelten hierbei als Hauptüberträger. Erklärtes Ziel der WHO und anderer Organisationen ist es, dass im Jahr 2030 keine Menschen mehr an Hundetollwut sterben.

Anhand der Tollwutbekämpfung wird ein ethisches Fallbeispiel aus der Perspektive einer Amtstierärztin in Uganda beschrieben. Die persönliche Verantwortung der Amtstierärztin soll mithilfe eines ethischen Tools, der Verantwortungsmatrix von Ropohl, bestehend aus sechs Kernfragen, geklärt werden. In einem Workshop mit einem partizipativen Ansatz wurde die ethische Beurteilung des Fallbeispiels durchgeführt. Dabei wird deutlich, dass es sich in diesem Fall möglicherweise um *moral distress* handeln könnte.

Wir gehen davon aus, dass ein besseres Verständnis der eigenen Verantwortung – einschließlich ihrer Größe und ihrer Grenzen – Amtstierärzte und Amtstierärztinnen darin unterstützen kann, besser mit belastenden und herausfordernden Situationen umzugehen.

Schlüsselwörter: Veterinärethik, Verantwortung, ethisches Dilemma, Keulen von Hunden, Ropohl

Introduction

In 2015, the WHO, the World Organisation for Animal Health (OIE), the Food and Agriculture Organization (FAO), and the Global Alliance for Rabies Control (GARC) established a goal of “zero human deaths due to canine rabies by 2030” (WHO 2015). The major burden of human rabies is attributable to dog-mediated transmission (WHO 2013). Approximately 60 000 deaths occur annually, mostly in Africa and Asia (Hampson et al. 2015). This is a conservative estimate, as underreporting due to poor surveillance of rabies cases is likely. The majority of human deaths due to rabies occur in children aged 5–14 years. Treating a rabies exposure case, where the average cost of rabies post-exposure prophylaxis (PEP) is US\$ 40 in an African country like Uganda, can impose a high or even catastrophic financial burden on a family whose average daily income is around US\$ 1–2 per person. A catastrophic health expenditure is defined as an out of pocket health care expense amounting to over 10% of overall household income or 40% of non-food household expenditures. Furthermore, PEP is not always readily available and accessible for those in need (Hampson et al. 2015).

Compared to control strategies relying solely on PEP, dog vaccination is cost-effective in preventing human rabies. For example, in Latin America, mass dog vaccinations has led to a 90% reduction of human deaths due to rabies since 1983 (Vigilato et al. 2013). Promising attempts of canine rabies vaccine delivery such as a combination of static point and door-to-door approaches have been reported in Uganda (Evans et al. 2019). Still, in the developing world, barriers to successful vaccination campaigns include lack of information about dog populations, poor surveillance of human and animal rabies cases, a lack of diagnostic facilities, and inadequate resources (Hampson et al. 2011, Lembo et al. 2010, Nel 2013).

In Uganda, a number of additional barriers to vaccination exist. Some dog owners are unable to procure vaccines (Wallace et al. 2017). Vaccination of dogs is made at a small cost which people who own many dogs are not willing to incur, hence some dogs remain un-vaccinated. Some refugees in settlements consume dogs and therefore do not wish to vaccinate them. Hunters believe that vaccinating their dogs makes them docile and therefore choose not to vaccinate them. Some members of the community believe that vaccination of dogs causes rabies and are sceptical about vaccinating their dogs in fear of the disease. In some places owners explain that they keep demons inside the dog, and therefore do not vaccinate the animals as this would free the demons.

In Uganda rabies is considered a “neglected disease”, although nearly 90% of the population in Uganda live in canine rabies endemic areas (Wallace et al. 2017). Canine vaccines are much cheaper (US\$ 1) than PEP and are (in theory) available in most Ugandan districts, but paid for out of pocket and therefore unaffordable for many.

The lack of a strong veterinary and public health system precludes also reliable data on rabies in both animals and humans. In Uganda, a commonly cited reason for delayed revision of the outdated veterinary policy concerns the lack of evidence – particularly prevalence data – for disease prioritization (Okello and Welburn 2014). This is illustrated by the interview of a key informant: “You need to provide information on what the

problem is, the nature of the transmission, its economic and public health importance – then you can bring the stakeholder on board for their views” (Okello and Welburn 2014). However, due to the difficulty in securing funds for prevalence studies for the majority of neglected tropical diseases in the first place, a key informant states: “As much as you don’t want a political crisis, we need data for justification of spending [...]. We are all fighting for meagre resources” (Okello and Welburn 2014). In the absence of reliable data, when taking animal, in particular dog bites as a proxy of potential exposure to rabies, the risk of rabies in Uganda is increasing (Masiira et al. 2018).

Uganda is known to be particularly “refugee-friendly” (<http://www.spiegel.de/international/tomorrow/uganda-is-the-most-refugee-friendly-country-in-the-world-a-1167294.html>, accessed 16 May, 2020). Uganda hosts over 1.4 million refugees (<https://data2.unhcr.org/en/country/uga>, accessed 16 May, 2020), which is a large number in a country with a population of 43 million. As a result of refugee settlements in Uganda, there has been a significant increase in the human population with an accompanying increase in the dog population as many migrate with their animals. If refugees are relocated from the settlement to other countries, dogs are left behind and abandoned, thus the number of stray dogs is increasing. In addition, food insecurity in many communities in Uganda also creates competition for food causing dogs to roam around and scavenge around accumulated litter.

Officially, the current approach to the control of rabies in Uganda is based on vaccination and dog population control. Vaccines are available both by government and by the private sector. The national laws that are related to and guide the practice are the “Rabies Act” Cap 44, the “Animal Diseases Act” Cap 38 and the “Public Health Act” Cap 281 (<https://ulii.org/ug/legislation/consolidated-act/281>, accessed 16 May 2020).

Presumably, the case of rabies is similar to the situation regarding the prevention of the emergence and re-emergence of human African trypanosomiasis in Uganda described by Okello and Welburn (2014). They found evidence that on “the ground level, there was further evidence that enforcement of current veterinary policy differed largely according to geographical location, likely reflecting individual commitment and available veterinary resources in that particular district”. Furthermore, the documented field observations and farmer experiences generally indicate that the Ugandan “veterinary policy implementation continues to be very patchy, with some traders and even some NGOs wholly bypassing controls”.

The life of a village dog in Western Uganda has been described as poor, nasty, brutish and short with only 10–30% of puppies surviving, and mortality rates of older dogs of over 1% per month (Hyeroba et al. 2017). The main causes of dog morbidity and mortality described in a cohort study, in decreasing order were infectious diseases, culling (euthanasia) by owners, and attacks by baboons, *Papio anubis* (Hyeroba et al. 2017). Weak laws on dog ownership and management in Uganda, and failure to enact or regulate and reinforce the existing laws on dogs have contributed to the surplus of dogs ending up in the streets. As a consequence, many administration units require that these dogs are euthanised to reduce risks of nuisance or disease, including potential rabies

transmission. In Uganda, the majority of veterinarians work as veterinary officers for the government, with a small minority working in larger cities in private practice. Veterinary officers work mainly with large animals but the mandated euthanasia, often of otherwise healthy dogs, must be carried out by these veterinarians, whose role in contrast should be to promote a healthy dog population. As such, veterinarians remain torn between their duty to their employer/the state, their responsibility for public health, but not wishing to harm dogs or their owners and respect animal rights. This dilemma raises multiple ethical concerns for veterinary officers.

One branch in veterinary ethics is dedicated to the application of ethical theories, principles, and rules by professionals in resolving ethical dilemmas in practice of veterinary care (Kimera and Mlangwa 2015). A minimum understanding of exposure to moral theories is essential to resolve ethical dilemmas and ethically challenging situations which are common in veterinary practice (Batchelor and McKeegan 2012, Kipperman et al. 2018) and associated with work-related stress. Although ethical theories, in the larger context of bio- and medical ethics, have been broadly applied to the use of animals, i.e. animal experimentation, none was originally developed specifically to address human-animal relations (Fawcett et al. 2018). The fundamental problem of the veterinary profession, the vet-patient-client triad is further complicated by the dualistic nature of veterinary medicine and commercial interests and public health aspects.

Veterinary curricula are typically characterised by an empirical perspective, a training first in science and at very few occasions students are exposed to normative approaches. The statement from Arkow (1998) “as a general rule, veterinarians are ill-prepared to confront ethical debates. [...] Veterinarians may be frustrated by philosophical questions which are not amenable to empiric resolution.” Similar observations were made by Fawcett et al. (2018) regarding veterinary students for whom it may be difficult to achieve a nuanced understanding of theoretical ethical terminology with ethical theories being considered as competing rather than complementary. Subsequently, “ethical frameworks referencing different moral theories may become a source of confusion and stress” (Fawcett et al. 2018). Professional veterinary experience is not necessarily associated with an increased competence in ethical reasoning (Batchelor and McKeegan 2012). This finding underlines the explicit need of appropriate training in ethical reasoning competences both at undergraduate and postgraduate level to be better prepared for ethical dilemmas occurring in veterinary practice.

A moral dilemma, defined in the strict sense and in a wider sense, is a “conflict between responsibilities or obligations of exactly equal moral weight” and a situation when “there are competing responsibilities with no obvious way to prioritise one responsibility over others” (Morgan and McDonald 2007). In contrast to other professions, veterinarians must deal with a centrally contested moral claim – the moral status of animals – in their day-to-day interaction with clients and patients.

Professional codes of conduct exist, but for veterinarians it is not always clear where their responsibility lies (Hernandez et al. 2018). Defining responsibilities is an important, but difficult process (Cleton and Meijboom 2009). Without a clear understanding about a person's

individual responsibility and without being able to say where someone's responsibility starts and ends, it is difficult for a veterinarian to take a stand in challenging situations.

Whereas ethical tools, like the ethical matrix (EM) from Ben Mepham, offer a structured approach to arrive at judgements that are transparent, comprehensive and readily comprehensible to non-philosophers (Mepham 2013), and have been applied to a number of case studies by decision-makers in agri-food biotechnologies (Kaiser et al. 2007), similar studies applying ethical tools to structure responsibility, differentiating distinct types of responsibility and their normative foundations, are scarce. In the context of animal disease outbreaks and mass culling, veterinarians have been described as being caught between ethical issues and control policies. In a workshop with veterinary officers and ethicists, the application of an ethical decision tool, Ropohl's responsibility checklist (Ropohl 1994) was suggested (Hartnack et al. 2009).

The aim of this paper is to present an ethical dilemma experienced by a veterinary officer in Uganda faced with a unique “dog problem”, and to explore the use of Ropohl's responsibility checklist, a practice-oriented ethical decision tool, in defining the personal responsibility and to resolve the dilemma from the perspective of the veterinary officer. A participatory approach was chosen for this ethical deliberation.

Methodology

The aim of the workshop was to apply Ropohl's responsibility checklist (RC), a practice oriented-tool, to a specific ethical case scenario to evaluate its' utility as a potential tool to reduce moral distress and empower individuals.

The application of the RC here took the form of participant action research (PAR), and was developed from the bottom up. PAR is a research method where research questions come from communities, and which stresses participation and action (Reason and Bradbury 2008). PAR seeks to address specific circumstances through collaboration and reflection between all stakeholders who are simultaneously research participants and researchers. In the case presented, a veterinary officer was experiencing significant moral distress, but felt extremely isolated and was very conflicted about how she should act. She was seeking answers and her dilemma sparked a joint effort to identify a mechanism whereby a veterinarian can process her moral distress in a structured and reproducible manner. Evaluation of such tools in various contexts is crucial to determining their utility and their generalisability. The utility of such tools is particularly relevant in environments like Uganda where Veterinarians are few, often act alone, are very vulnerable to their superiors because of their financial circumstances, and as in this case, may be women who are very few and may feel even more isolated.

The goal of this exercise was to evaluate whether collective reflection using tools such as the RC, can empower individuals to understand the limits of their responsibility which can then empower them to advocate more effectively. As several participants in this workshop are veterinarians engaged in teaching, such a bottom-up study is necessary and valuable to understand

how the tool can be used to empower students for the future. Given the degree of moral distress experienced in human medicine under resource limited conditions such as Uganda, we further wished to assess whether such a tool would resonate with doctors, and could be further tested for empowerment of medical students. As it is known that in high-income settings burnout is high in veterinary medicine and that veterinarians experience significant distress because they are required to euthanise animals, which is distressing in and of itself even under optimal circumstances, the generalisability of the RC tool must be tested in varying contexts.

A veterinary officer working in a remote local government district in Uganda presented the scenario at a half-day ethics workshop on May 7th, 2018 in Kampala, Uganda. The workshop took place within the North-South cooperation between the University of Zurich, Switzerland and the Makerere University, Uganda and was designed similar to Hartnack et al. (2009). Workshop participants were either physicians or veterinarians. The case was discussed in group format. During the discussion notes were taken, compiled and presented afterwards to the group for approval. The workshop format provided safe space for collective reflection and evaluation of the utility of the RC tool in Uganda.

Ropohl's responsibility checklist

An ethical practice-oriented decision tool, Ropohl's responsibility checklist (RC), was applied to the ethical case scenario (Ropohl 1994, Dürnberger et al. 2015). The aim of the RC is to dissect and structure components of individual responsibility and to describe the relevant dimensions of responsibility. In total, there are six analytical questions designed to disentangle responsibility, which otherwise often remain unclear. If successfully applied, the RC should allow an individual to better understand the extent and limits of her individual responsibility in a given situation. The following six analytical questions are at the core of the RC.

1. Who is responsible?
2. For which action is the veterinary officer responsible?
3. For which consequence is the veterinary officer responsible?
4. When is the veterinary officer responsible (before or after the event)?
5. Which values determine the responsibility of the veterinary officer (law, professional code, moral norms etc.)?
6. To whom is the veterinary officer accountable (i.e. employer, colleagues, animal keeper, conscience, etc.)?

During the workshop the six questions were discussed with regard to the specific ethical case scenario.

Ethical case scenario

Obligations of the veterinary officer in a remote district in Uganda include: disease surveillance, diseases case management, contributing to public health and implementation of veterinary laws and policies in her district which includes a refugee settlement. In the process of disease management, policy enforcement and regulation, she participates in dog vaccination for rabies control. In this setting, she experiences a number of challenges in the process of rabies management. The population of stray dogs is very high in the district. The district experi-

ences a high number of dog bites and human deaths due to bites from rabid dogs have occurred.

The refugee settlement in the remote district contains a large population of dogs, the logistics of which renders provision of adequate vaccination difficult. In 2016, a village health team registered over 1000 dogs in the refugee settlement, but only 163 dogs were presented for vaccination. Due to an increase in the dog population, the administrators and supervisors in the local government in the refugee settlement and the town council repeatedly requested euthanasia of stray dogs.

The veterinarian has thus far not felt comfortable killing these dogs due to ethical considerations. The administrators want the dogs poisoned with strychnine which they believe is humane killing. To achieve this, the veterinarian should lay the poison bait, observe that the bait is eaten and track the dog until it dies. In the absence of reliable diagnostics, it is difficult to distinguish if a dog dies because of rabies or because of poisoning. Witnessing the death of an otherwise healthy dog is distressing. In addition there is a risk that other animals, or even humans, may be mistakenly poisoned. Convincing her bosses that culling dogs to control rabies is not an optimal solution has been difficult. Instead, the veterinary officer believes sensitisation of the community and vaccination of the dogs is the best solution, but this has not been positively supported. Furthermore, the community is not willing to have their dogs destroyed. Not all dogs are considered stray dogs and some contribute to their owners' safety and/or livelihood. The veterinarian therefore experiences an ethical dilemma: on the one hand being required professionally to euthanise potentially dangerous dogs with a method that can be emotionally taxing to observe repeatedly; and on the other hand she is reluctant to do so because many dogs are healthy, and there are more humane alternatives that could be employed to tackle the problem. If while attempting to negotiate a solution to this dilemma a person is bitten and dies from rabies she may feel, or could be held, responsible.

Results

Through the discussion it became evident that in this ethical case scenario the underlying reason was not a moral dilemma in a strict sense due to conflicting responsibilities or obligations of exactly equal moral weight. In contrast, the dilemma could be understood as a practical one (Morgan and McDonald 2007). The veterinary officer experiences moral distress according to the definition of Jameton (1984): "Moral distress arises when one knows the right thing to do, but institutional constraints make it nearly impossible to pursue the right course of action." Here the veterinarian, in line with current epidemiology and public health knowledge, would prefer to vaccinate dogs and advocate for responsible dog ownership (including spaying and neutering), instead of poisoning dogs with strychnine. Furthermore, with indiscriminate killing of healthy dogs, vaccinated dogs might eventually also be killed, thus reducing the vaccine coverage and risking a loss of trust by owners who had complied with vaccination. Thus far, the veterinarian had been able to resist the request to kill healthy dogs in an inhumane manner, but as a consequence she has been warned of a potential ending of her contract if she does not comply and kill free-roaming dogs with strychnine.

Application of the RC to this case scenario permitted analysis of the following aspects of the case.

Question 1: Who is responsible?

The veterinary officer is the person who must implement the local dog management policy. In this ethical deliberation, the veterinary officer is the responsible person. When applying the RC in other situations, one might also be interested in the responsibility of a group of persons, i.e. collective responsibility.

Question 2: For which action?

The veterinarian was given the instruction to euthanise stray dogs in the settlement as a public health action, but decided, based on the existence of feasible more humane alternatives, not to follow this instruction given by her supervisors. So far she has refused to euthanise stray dogs.

Question 3: For which consequence?

The potential consequence of carrying out the large scale euthanasia is killing of healthy dogs, losing trust of those who do vaccinate their dogs, emotional distress of the veterinarian in needing to witness the death of multiple dogs and the risk that animals or people may be unintentionally poisoned. A risk of not carrying out the euthanasia before an alternative solution can be implemented is transmission of rabies. For the veterinarian the consequence is moral distress as she does not agree with the euthanasia policy. Should she not agree to carry out euthanasia, she risks negative repercussions from her supervisors and other local leaders, loss of her job, and potential damage to her reputation.

Question 4: When?

As an employed government veterinarian her job entails implementing policy decisions taken by the local government, however prior to policy decision she is at least in part responsible to ensure that decision-makers have the correct data upon which to make a decision, are aware of the alternative policies and that she advocates for animal welfare. During the euthanasia she would be responsible to ensure it was conducted correctly and minimize risk to others. After the euthanasia she would be responsible to advocate for a change in policy if she continues to believe there are better ways to manage rabies locally. If she continues to reject carrying out euthanasia but no alternatives are being discussed or implemented, the delay could lead to risk and therefore she must decide whether or not she can continue to work there.

Question 5: Which values?

There are multiple values and norms at stake that reflect on her professional code. Veterinarians should minimize pain and suffering of animals and promote their welfare. Veterinarians should also foster human and public health. These values or norms are at the core of a veterinarian and frequently acting against them might erode moral and professional integrity. However, when protection of animal welfare and protection of human welfare conflict with each other this creates a tension for the veterinarian. Compromise is required which may involve placing the human needs above those of the animals in the short term, but a commitment to resolving the conflict is necessary over the long-term. Veterinarians also need to cover their living costs, thus

have a financial responsibility towards themselves and their family members, and therefore cannot risk losing employment, which places them in a vulnerable position relative to their superiors.

Question 6: To whom?

The responsibility of veterinary officer can be understood as being directed to her conscience, to her supervisors, colleagues, family and other members of the community.

While the actual situation was perceived as stressful, the clarification of her responsibility according to the six RC dimensions was perceived to be helpful. After having described and structured her responsibility in this specific situation in a moderated group discussion, a number of potential solutions could be considered which should assist her in managing similar conflicts in the future. The proposed solutions included optimising future communication with her supervisors by identifying where her responsibility begins and ends, and seeking contact with national or international networks for rabies control such that she can develop objective, well-grounded and feasible alternatives that may be more difficult for her superiors to dismiss. In the short term, to demonstrate good will, she may accept to kill dogs in a few future instances, but use this compliance as an argument to convince her supervisors of the necessity to tackle the barriers to dog vaccination and responsible dog ownership in the future. With regard to resource restrictions, and how best to allocate these, a comparison was made with human medicine, i.e. on how best to allocate treatments if there are not enough for all in need and how to document the problem and communicate the underlying reasoning as tools for advocacy.

Discussion

During the workshop it became evident, that this case scenario does not consist of moral dilemma in a strict sense, thus due to conflicting moral principles. The veterinary officer, backed-up with epidemiological knowledge, is aware that it is neither efficient nor ethical, to kill healthy dogs for rabies control. From an applied ethics perspective, relying on the principles beneficence, non-maleficence, justice and autonomy, killing healthy dogs as the sole means for rabies control should be abandoned. In their contribution on veterinary ethics to the "Encyclopedia of Global Bioethics" Kimera and Mlangwa (2015) state that "policies to prevent rabies through killing of stray domestic and feral dogs and cats still exist in some developing countries. Recent research has shown this method to be ineffective in eliminating rabies, but still this option remains in place in some countries worldwide".

The case scenario can also be described as a practical dilemma (Morgan and McDonald 2007) or as challenge of allegiance when "the boss' position differs with ethical practices expected" by veterinarians (Njoga et al. 2019).

This situation in the case scenario is an example of moral distress. Moral distress "arises when one knows the right thing to do, but institutional constraints make it nearly impossible to pursue the right course of action" (Jameton 1984). A considerable body of research exists

regarding moral distress among nurses. When searching in PubMed for “intervention moral distress” in title or abstract in May 2020 out of the >300 hits, only two hits referred to veterinarians. However, many of the consequences of moral distress, i.e. depression, burn-out, addictive behaviours, feeling of powerlessness and dampened moral sensitivity as reviewed by Rushton et al. (2016) may also occur in veterinarians. Moral and physical stress due to animal disease control has been described (Makita et al. 2015). There is evidence that veterinarians commit suicide more often than the general population (Tomasi et al. 2019) and frequently performing euthanasia has been named, amongst others, as a potential contributing factor. To do “meaningful work” is important for the well-being of veterinarians (Wallace 2019).

According to Auhagen (2002), competence and responsibility are both key distinct but similar aspects of professional life that should be jointly considered. Empirically, a positive relationship was detected. Thus professionals experiencing themselves as competent and self-efficient also take more responsibility and vice versa. The impact of responsibilities on ethical challenges in rabies, is also emphasised by John (2000): “Only after the responsibilities of the different arms of the government are clarified can we expect action from civic authority”. It is possible to apply the RC not only at an individual level for a single person in a specific context, but also to clarify the responsibility of a group of individuals, i.e. an administrative unit.

While responsibility is considered a key component of professional life, to the authors’ knowledge we present the first application of the RC in a case scenario in the context of animal disease control. To the authors’ knowledge, the application of this ethical tool was so far only suggested to address problems of responsibility in a more structured and efficient way (Cleton and Meijboom 2009, Hartnack et al. 2009). With our approach of applying the RC we follow a bottom-up approach taking the everyday dilemmas of a veterinary officer as a starting point (Weich and Grimm 2018). Here, working in a context-sensitive manner means resolving ethical problems by revealing the moral dimensions of veterinary practice and identifying veterinary responsibilities in specific contexts and situations (Weich and Grimm 2018).

We realise that the case presentation does not immediately appear to have a direct link to the WHO’s technical goal of rabies control, however, rabies control can only be achieved through engagement and effective work of veterinarians. As such, the mental and moral health of veterinarians is key to this process. The training of veterinarians is an investment by the state in the health of its animals and its people. If veterinarians leave the profession or the country, or even kill themselves because of repeated moral distress, this is not conducive to a successful disease control strategy. Furthermore, advocacy is a key role for veterinarians often caught between human public health and respecting animal rights. Better mental and moral health of veterinarians and a better understanding of how to articulate their dilemmas and identify the responsibilities of others is key to their being a sustainable and effective workforce for positive change for both animal and human health. This requires patience and time for which empowerment is key.

This does not of course mean that we expect that the complex problem of rabies in Uganda, related to many different stakeholder and social, cultural, political, economic, and possibly other dimensions, can be fixed solely by our approach. Beyond the scope of this paper is also the development of general solutions tailored to rabies in Uganda, as well as discussing the role and positive as well as negative effects of numerous international organisations and NGOs acting in Uganda over many years. Constructive engagement with policy makers to effect these broader goals can however be better achieved once a veterinarian has clearly understood their role and the source of their dilemmas and can advocate for change over time.

The RC, a practice-oriented tool, allows for systematic thinking through of normative issues related to animal disease control situations, and offers a better understanding of a veterinarians’ personal responsibility. Under strategies to avoid or manage ethical tensions, as a first step it was proposed to “gather information about values and to reflect on one’s own beliefs, perceptions, and values, as veterinarians may be unaware of their own stance regarding the standing of animals, their roles and responsibilities [...]” (Morgan and McDonald 2007).

Strengthened veterinary and public health systems are crucial to achieving the elimination of human deaths due to canine rabies through preventive and effective vaccination (Durrheim and Blumberg 2017). Strong and efficient veterinary surveillance systems rely on effective practitioners. Even an “enthusiastic workforce” has been named as a necessity to achieve the goal of zero human deaths due to canine rabies in 2030 (Durrheim and Blumberg 2017). So far, little attention has been paid on how to create or maintain such a workforce, instead a lack of operational research has been deplored (Fahrion et al. 2017) and the need for a “science of rabies elimination” was expressed (Zinsstag 2013). Effective planning of elimination programs is hampered “[...] when national authorities are frequently overwhelmed by multiple human and animal disease priorities and the challenges associated with programs stretched across sectors and administrative levels. It may be difficult to know where to start and what is needed [...]” (Fahrion et al. 2017).

We are convinced, that in such a situation, considering concomitant epidemiological, legal, practical and financial aspects, ethical aspects and a reflection on values is highly beneficial as it lays the foundation for a better decision-making. Including ethical reasoning in the context of rabies and other animal diseases’ control is possible. An ethical tool like the RC allows structuring of responsibility at individual level, but can also be applied to different administrative levels, in a relatively short time. Until now, moral distress in veterinarians has received little scientific attention, and occasions to train ethical competences are scarce. Empowering veterinarians with ethical competencies such as applying practice-oriented tools to resolve dilemmas, will increase their competence and responsibility and allow them to cope with difficult and challenging situations in their practice.

Conflict of interest

There are no protected, financial, professional or other personal interests in a product, service and/or company that could influence the content or opinions expressed in the manuscript.

Ethical approval

This manuscript presents the results of group work. All attendees of the workshop agreed to the publication. As no testing was done on any animals or humans, no ethical approval was needed.

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Authors' contribution

GA and MAK contributed equally to this paper, VL participated in preparing the workshop preparation, case discussion and writing, SGO shared further background information, JRS provided feedback, DA gave valuable insights, SH drafted the manuscript. All authors revised and improved the manuscript.

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