

The Current Situation of Veterinary Services and a Reform for Enhancing the Veterinary Services in Developing Countries

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Abstract

Veterinary services conserve and maintain animal life, improve the living conditions of human beings through improving rural livelihoods, feeding; veterinary services also address global health crises by preventing risks such as emerging pandemic diseases, antimicrobial resistance, contamination of foods and environmental health problems at their origin. The purpose of this policy brief is to analyze the way veterinary organizations provide services and to propose an optimal organization for veterinary services in developing countries the current situation of veterinary institutions in developing countries can't counter the challenge related to animal health and productivity. As a result, reorganization, amalgamation, merging and consolidation of veterinary health services (veterinary clinics, slaughterhouses, quarantine and veterinary markets) together with the construction of closer veterinary service facilities the construction of common areas will help institutions to strengthen cooperation among different veterinarians, which is the first steps for the implementation of a one health platform and multidisciplinary activities. The improvement and reorganization of the veterinary services institutions will also help the veterinary clinics easily obtain various medical chemicals such as blood and rumen from abattoirs, enhance the surveillance of livestock diseases, enable the community to buy healthy animals from the animal market and help to reduce economic waste. The services can be performed by a small number of veterinarians through a model of specific areas common to all veterinary services. This model improves the skills and knowledge of veterinarians in all aspects of veterinary medicine and saves students and researchers time. Communities or customers can save time by getting all veterinary services at once. It saves budget on purchasing medical equipment and medicines at each location and avoid expiration dates on medicines. This model is the latest solution to the global health crisis and should be implemented in the near future to combat the emergence and re-emergence of new pathogenic microorganisms.

Keywords: Abattoir • Developing countries • Reform • Service • Veterinary

Introduction

Veterinary services are public and private agencies that implement standards on animal health issues and animal welfare measures based on World Organization for Animal Health (WOAH) guidelines [1]. Veterinary services are governed and act in accordance with the guidelines of specific national veterinary authorities. Private veterinary facilities are usually licensed to offer services by veterinary offices [2]. Veterinary services are generally categorized according to their specific contributions to addressing animal health crises, such as: Services for vaccines and other products (such as artificial insemination) and public health services (protection and testing of foods of animal origin). A veterinary service is an organization subject to an economic division into different fields and different interpretations. Clinical health services and supplies of veterinary

medicines are usually provided to communities by private veterinary service organizations. There are many factors that impede the delivery of effective veterinary services, especially those related to the areas of drug delivery and public health. This requires states to play a role in the provision of these types of services. The main objective of this paper is to highlight the main reform for reorganization of veterinary services for better performance with low investment cost [3].

Each organization has its own management system and chain of command. Especially in Ethiopia, veterinary services are in different departments of the zone, city or local government system. This prevents the organization from serving the community effectively. Reorganizing the entire veterinary service in specific areas can therefore minimize the required personnel, office and administrative resources. Combining all veterinary services in one place facilitates

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research and investigation into disease outbreaks. Students and researchers can get all their services in one place and spend less time on learning and research. Integration and consolidation of veterinary services improves knowledge sharing among veterinarians, fosters collaboration among veterinarians, and facilitates collaboration on human and environmental health. Through reintegration and consolidation of veterinary services, the latter will become more efficient and unified. These program components are realized by consolidating all veterinary services into specific unit areas. Technical skills (knowledge, skills, and standards) and motivation will force veterinary service providers to provide better and more accurate services. The reorganization and consolidation of all veterinary service facilities could be particularly beneficial with respect to our commitment to the One Health approach. This component is collectively implemented by consolidating all veterinary services at specific locations through the establishment of public-private partnerships, providing capacity building for veterinary professionals at various levels. This brief policy provide recommendation and explanation to improve the activities of veterinary services in accordance with a guidance of world animal health organization such as, implementing and developing animal identification and traceability, developing meat inspection training, establishing statutory veterinary authorities, and standardizing livestock sector load.

Policy outcomes and implications

At present in developed parts of the world, the animal health service is undergoing tremendous improvement through establishment of modern veterinary services and advances in veterinary science; these allow transforming study findings into practical implementation to perform extensive animal disease control and herd health programmes. As a result, a major epidemic animal disease (African swine fever, Classical swine fever (hog cholera), Contagious bovine pleuropneumonia, Dourine, Foot-and-mouth disease, Glanders and Rinderpest, has been controlled, and activities to prevent the reemergence of the disease have gained main priority in United State of America, Canada and United Kingdom. In these countries many livestock diseases are planned for eradication, farmers have adequate access to veterinary services and veterinary service organizations have played an important role in the improvement of the livestock industry. As opposed to developed countries the animal health situation and veterinary services in developing parts of the world is different.

Literature Review

Animal health conditions were improving about 25 to 30 years ago, through frequent international aid funds and coordination of wide coverage of animal disease eradication programme. But the situation for those activities is not moving forward in low-income countries. Attempts to reverse this trend through institutional reform, often judged to resemble the institutional model of the Western world, have met only moderate success in developing countries. The frequent threats of subsequent outbreaks of Tran's boundary animal diseases, lack of financial support, and lack of institutional coordination are challenges that need to be addressed.

While there is scope for the delegation and/or delegation of many functions from the central government, the reform movement should

recognize the need to strictly manage deferrals and allow sufficient time for the veterinary services sector to grow. Although this sector is beneficial to the national economy, the budget allocated for it is low. Inadequate financial resources and lack of veterinary and organized veterinary services result in massive loss of livestock and outbreaks of livestock disease. The rapid worldwide spread of Tran's boundary animal diseases such as Highly Pathogenic Avian Influenza (HPAI), Foot-and-Mouth Disease (FMD), small ruminant disease (PPR), African Swine Fever (ASF), tilapia lake disease virus, and white spot disease. Transmission of the infectious pathogen in human and animal in many areas demonstrates the failure of veterinary services to provide effective disease prevention and eradication programs, especially where it is most needed in low-income countries. Livestock production in low-income and middle income countries of Eastern Europe, Asia, Latin America and Africa is generally very different comparatively with developed countries due to lower livestock productivity, more frequent outbreaks of animal diseases, and inadequate animal health services. The effectiveness of public services also varies. Some countries have managed to maintain minimal efficiencies despite dwindling financial resources.

In developing countries, the contribution of the cash economy to the livestock sector is neglected. The market doesn't demand quality. Developing countries don't even have weight as a pricing factor. Subsistence consumption is an important goal of animal husbandry, and ruminant herd numbers are more important for household savings and survival strategies than for financial income. A significant portion of the ruminant population (small and large ruminants) is managed in many countries by traditional rather than sedentary farming, with a few exceptions. In developing countries such as, Ethiopia, Kenya and others livestock production and market regulations are non-existent or virtually non-enforceable. Most farmers who participate in animal husbandry are uneducated or have low educational attainment. In Ethiopia, cattle keeping are the activity of male nomads, while foals and poultry are the responsibility of women in the settled population. Many cattle owners are poor, although they have many livestock, because they do not get anything from their wealth of animals. This means that despite having a lot of livestock, cattle owners earn little income due to low livestock productivity, lack of livestock market and lack of development infrastructure such as roads and banks.

In developing countries, including Ethiopia and Kenya at the national level, animal health is often controlled. The threat of epidemic outbreaks is often highly localized and includes diseases that can be transmitted to humans and that can cause huge losses to entire herds nationwide. To make matters worse, some cross-border animal diseases have a relatively small impact on the productivity of traditional herds, but are very dangerous for hybrids and non-native species. Traditional farmers may be asked to pay for programs specific to disease prevention, which may not be acceptable to them due to lack of awareness of veterinary services, lack of modern veterinary services and they want to treat their animals in traditional ways. Under these circumstances, institutional improvements in the livestock sector have been very small and farmers' unions have not been established. There are state-controlled farmer cooperatives in Ethiopia, but they are generally controlled by politically appointed and corrupt bureaucrats, resulting in a waste of money and resources.

In Ethiopia veterinary association is still in its early stages and is controlled by government officials. Other animal health workers are only recognized as professions and are not organized. Consumer organizations are rarely represented. A legacy of the dominant role of government services is a heavily skewed power structure in favor of public sector veterinarians.

In Ethiopia, the institutionalization of veterinary services mainly consists of federal and regional systems, with the federal veterinary services under the control of the ministry of agriculture and the regional systems under the control of the corresponding regional agricultural offices. At the federal level, veterinary services' main responsibilities comprise making policies and strategies; providing a system for animal health conditions, performing animal disease surveillance and investigations; participating in the making of national projects; preventing endemic diseases; enforcing regulations and certifications; setting up work plans and funding; and provide technical inputs [4,5]. The obligation of the regions state related to veterinary services includes the provision of preventive and clinical services; annual vaccinations, food safety inspection, data and report collection, support construction of public veterinary services(building of veterinary clinics, abattoirs and animal markets), train animal health personnel, perform diagnostic activities, provide drugs, vaccines and other medicines; and licensing private practices. The Woreda district-level veterinary office performs major duties which include: Provision of different medicines to provide treatment for sick animals and control diseases; performing meat examination, and reporting outbreaks of animal disease [6].

Constraints for veterinary service delivery in the public sector are related to management, customer (farmer) and veterinarian. Few of the challenges faced veterinary services relating to management were lack of awareness, insufficient funds as well as the low attention given to the sector [7]. Amongst client-related constraints, distance from the service center was most occasionally informed by respondents. Lack of motivation, either due to insufficient salary or available financial resources, was the main challenge noted by veterinarians [8]. Status advantages, individual herd numbers and traditional production systems are also very important features. The personal benefits of effective treatment are immense, and livestock owners are often aware of the benefits. However, for poor farmers with small numbers of livestock, the cost of treatment at a private clinic may be disproportionate to the benefit they get from livestock records from Kenya's experience show that while consumers are willing to pay for the benefits and services provided, they do not disclose the travel costs or time they allocate to the attention of professionals.

Discussion

Reorganization of veterinary services can be a useful management tool for creating new values and often essential conditions as part of the development of new models for each country according to the current situation. It is no small feat to combine organizations that have often been separate but carry out similar tasks. The leadership team must review two sets of operations, processes, finances, among others, to determine how best to integrate the acquired company into the new combined organization. Accordingly, the implementation of this structural and organizational reform of veterinary health institutions will be initiated by the merger of veterinary clinics and slaughterhouses. Thus, a strong integration team will be created and members of both organizations will work together to coordinate integration efforts.

The integration and parallel development of veterinary services, including veterinary clinics, slaughterhouses, quarantine and livestock markets, as well as adjacent veterinary offices should be considered as a new model of veterinary service organization. These provide interconnection of all veterinary services and share a common responsibility to do with low manpower and investment in the control of common livestock diseases, managing transportation of animals into the country and abroad, certification of the quality and labeling of medicines for veterinary services, examination of meat and other livestock products, operation of an effective laboratory capacity, managing of breeding centers and quarantine centers. This incorporation and amalgamation of all veterinary services at one specific location facilitates providing adequate veterinary services for the communities, which results in relief for government from frequent discontent of communities about the animal health delivery services system. At present, the communities are aware of the services which are related to animal health, but the governments in sub-Saharan Africa lack the budget for construction of facilities delivering veterinary services. Thus, these methods decrease the budget and facilitate the response to the problem with small capital. During the construction phase of veterinary service institutions, the integration and concentration of all veterinary services in one place decrease budgets of construction because veterinary institutions (infrastructure) have a common building or features such as fence, office, laboratory room, diagnostic area, pharmacy room and drug storeroom. Another advantage is that they reduce the number of buildings by using all services such as laboratories, isolation rooms, reception rooms, disposal sites, and offices with common functions.

Veterinary service improvement projects expand rehabilitation/reconstruction of veterinary hospitals, slaughterhouses (abattoir), livestock markets, and other physical resources and services, especially for low-income countries. This should include general planning and design improvements for different categories of community facilities that can be applied to suit different local conditions in developing countries. The centralisation of all veterinary services at nearby sites has contributed to the safe disposal of animal products, by-product waste and other waste in veterinary clinics and abattoirs in developing countries. Veterinary facilities can have better access to resources including functional and well-maintained infrastructure, transportation, ICT internet services, refrigeration and other essentials.

Veterinary services must always have inexpensive material resources at their disposal and maintained on a regular basis. This means that there are not many resources (enough medicines, laboratory equipment, computers, and medical equipment) in the veterinary facility. A large capital investment is required over a year to develop the operational infrastructure of the veterinary service. The veterinary service has inexpensive physical resources due to lack of resources used for fulfillment and requirement of veterinary service criteria at all stages (global to local status) which are maintained regularly and updated as more converted material becomes available.

The previous structure and organization of veterinary services, organized on a model of institutional decentralization, has resulted in fragmented and discontinuous veterinary services in sub-Saharan Africa. As an example, at the district level, major veterinary services and veterinary clinics report to district agriculture departments, while slaughterhouses and cattle markets report to municipalities. That makes veterinary services inadequate. This dispersion results from

the lack of formal external cooperation mechanisms, with clearly defined procedures or agreements for joint activities of veterinary services at the district level. The centralization of all veterinary services in a common location facilitates and suspends formal external cooperation mechanisms with clearly defined rules and regulations at the district level for most measures. These are implemented in a similar manner across the country, including at all levels of government. All activities, from regional to local, have external coordination mechanisms that are regularly evaluated and updated to change roles and standardize efficiency. Due to structural budget shortfalls, there is an urgent need for reforms for the coordination and cohesion of veterinary services on the near side, where veterinary services are required in one place and services provided by veterinarians are improved.

Veterinary laboratories play a major role in providing efficient veterinary hospital services by investigating and identifying outbreaks of many animal diseases. Slaughterhouses, quarantine stations and clinics are good to have veterinary laboratories. Therefore, one veterinary laboratory is sufficient to provide services related to diagnosing animal diseases. This saves staff and budget. Slaughterhouses, clinics and quarantine stations must meet standards to provide veterinary services. When each service has its own lab, the available resources (human, physical) are not used wisely. They are made according to the standards of veterinary clinics, quarantine stations and slaughterhouses. Therefore, it would be convenient if a veterinary laboratory was available for all veterinary services. Veterinary laboratory standards can be elevated by using all the resources available for each service in one place. As an example, when veterinary services are dispersed and located in different places the abattoir's lab chemicals budget may be 500 ETB, for clinic's 700 ETB and for quarantine's 300 ETB may be funded for buying laboratory chemicals. This may not be enough to have the required chemicals in each facility. However, when the veterinary service is coordinated and built in one place, these budgets are enough to improve resources such as medicines, chemicals and medical equipment if used equitably.

Another advantage of this reform is the efficient use of available resources to prevent the expiration of available chemicals and reduce money and resource losses. It also improves rapid identification and diagnosis of disease outbreaks by reducing labor and using available labor effectively. Veterinary clinics and slaughterhouses must work together. During emergency slaughter at the clinic, the procedure is recommended by a veterinarian, after which the animal's condition and etiology are evaluated by another veterinarian at another facility (observed slaughterhouses). The decentralization of veterinary services prevents clinics and slaughterhouse veterinarians from cooperating and getting feedback from each other. However, centralized models have increased the knowledge of animal diseases available locally and have led to the clear definition of the causes for prescription of emergency slaughter during post-mortem examination. Furthermore, the lack of slaughterhouse facilities near the clinic and the inability to slaughter animals properly (e.g. halal methods), animals that die before slaughter are not eaten in different communities, which can cause losses and prolong pain from animals, can continue to cause animal suffering; the consequences are financial loss, wasted time and exposure of the community to the cost of transporting animals from the clinic to the slaughterhouse.

Otherwise, an emergency slaughter area at a veterinary clinic or a veterinary ambulance will need to be available. Clinic-slaughterhouse cooperation is also essential as human resources are used effectively and budgets for human resources, especially veterinarians, are minimized. Other benefits of merger, proximity and integration of the veterinary clinic and slaughterhouse include providing another very important income for the veterinarians working in the company. When the slaughterhouse and clinic are in the same place, it can be difficult to do all the work during working hours, so the veterinarian has more opportunities to work during his vacations, holidays, and weekends.

Overtime pay for veterinarians is critical for providing effective veterinary services. A regular working day is not enough to provide better veterinary services. Therefore, veterinarians should work during vacations, holidays and weekends. Otherwise the community may ask a veterinarian to treat the animals when there is no work (during vacations, holidays and weekends). However, if organized together, it allows the professional to work long hours and therefore facilitates the professional to receive payment for working hours during vacations, holidays and weekends. It also facilitates the request of veterinarians such as payment for nights and weekends time. A veterinarian is always responsible for treating or preventing an animal's pain or injury.

The meat inspection service is one of the non-functioning agencies at the county level, although some agencies have been introduced. Veterinary slaughterhouses in Ethiopia's pastoral areas such as Dalomana, Madawalabu, Haranna Bulluq, Barbare districts offer their services without proper meat inspection due to lack of slaughterhouse facilities and lack of resources, as well as the poor attitude and unwillingness of veterinarians working at slaughterhouses. Mergers and consolidations of slaughterhouses and veterinary clinics solve these problems and create animal disease and zoonotic disease surveillance networks; they allow ensuring the safety and suitability of meat and by-products for their intended uses. They also strengthen veterinarians who play a key role in both. The prevention of pathogenic microorganisms is important to livestock and human health, through ante and post-mortem testing; it is an important activity of the veterinary service and should play a major task in developing appropriate testing strategies. Quarantine areas are required for proper functioning of slaughterhouses and quarantine stations. It would be convenient to have a common isolation area. A veterinarian diagnoses the health status of live animals at a quarantine station while performing a post-mortem autopsy at the slaughterhouse. For this reason, it is enough for a veterinarian to perform a necropsy on the ante mortem examination and physical condition of the animal. Animals are purchased from the market and brought to the slaughterhouse, so consolidating all veterinary services into a specific common area saves time and money on transportation. To improve the cleanliness and hygiene of slaughterhouses, veterinary clinics, and veterinary laboratories and quarantine stations, all facility wastes are removed in close proximity. One car is enough for the whole institution. In general, when veterinary services are managed by an institution, the available resources (physical and human) are used wisely and budgets are reduced, but the services are improved and the community is happier. In poor countries like Ethiopia, the community demands the

government to provide and expand various service problems, and this integration of veterinary care services can be a solution at the same time if implemented. In addition, the reforms will allow veterinarians to work more hours and earn more money, thus addressing the profession's grievances from their workplaces. In this way, we resolve veterinarian complaints to the government relating to veterinary services.

Formal professional development plan for veterinary professionals to develop and test new models of public-private collaboration to introduce maps and animal welfare standards implementation. Due to lack of budget and medical equipment, lack of adequate hygiene is mostly seen in slaughterhouses and veterinarians are not willing to be employed in slaughterhouses. So all veterinary services are localized and worked together to solve these problems. An expected problem with the reorganization and consolidation of veterinary services is that slaughterhouse waste increases the transmission of disease and circulation of pathogenic microorganisms between individual facilities, but it can be resolved through effective biosecurity measures.

A veterinary science is a highly professional service, and professional ethics and peer expectations are determinants of staff character. This reinforces a management style based on developing a sense of function and duty because it is a professional field and if veterinarian works together in a coordinated manner, they can play an important role in the development of veterinary science. Young professionals can easily learn professional characteristics from experienced professionals and pass them on to the next generation. In this way, good cooperation between veterinarians is improved and veterinarian professionalism is enhanced. Efficiency (optimal use of public funds) is achieved mechanically. In fact, professional standards and expectations from peers can lead employees to seek standard technical status over cost efficiency. Sub-Saharan Africa has to develop complex methods to ensure cost effectiveness. Almost all veterinary organizations for which the public veterinary administration is responsible have been declared "challenging", and private representatives or other public service bodies, including local governments; have been criticized for not allowing such services in specific locations or part of them. The company, like any other interested provider, is compelled to submit bids. Veterinary authorities award contracts to perform services funded from ministry funds to the cheapest providers with the necessary technical skills.

Management of human resources from different veterinary services

If veterinary services are consolidated and coordinated in different places, special policies related to reform and restructuring of veterinary health institutions are implemented, veterinarians in the same category but in different institutions will be in one place, bringing them together to provide timely services. It means veterinarians who have the same job description but working in different veterinary health facilities will work together in the same place to provide timely services. The model encourages each veterinary service to use resources for joint activities by providing all inputs in the form of rewards for the technical work done and benefits as outputs from each service. The model makes it easily accessible to encourage workers and practitioners.

It alleviates the obligation of all veterinary services to maintain revolving medicine and vaccine funds, which poor countries often challenge to manage resources. In addition, the need to hire animal health professionals in the long term reduces the reforming veterinary services need to achieve health targets.

A model of veterinary services for global health problems

This is the next step in the positive implementation of cooperation among all health professionals. Significant results are only achieved when all relevant issues and areas are approached holistically, both from a technical approach and from a shared budget perspective. All veterinary services are involved in separate ways without proper coordination and cooperation, and many already lack the funding they need. Moreover, they lack the clout, seriousness, and foresight to work independently and avoid problems in setting common goals. When all these veterinary services join forces, they all benefit. Collaborating with veterinarians from different facilities to improve cooperation with other human and environmental health workers is the first step towards adopting a public health approach. Overall, this reform could increase the veterinarian's experience on a multidisciplinary platform.

Conclusion

Veterinary services are categorized into four major divisions such as clinical services, who provide treatment of sick animals and prevention of production loss, preventive services (controlling of the outbreak of diseases); provision of drugs (medicinal products and other biological products) and public health service (inspection of animal food origin). Prompt allocation of resources is required for each service and is managed in a holistic approach. The government's main duty is related to obvious public interests, such as: The monitoring of global animal health situation; eradicating outbreaks of trans-boundary livestock diseases; prevention of zoonotic diseases threat to public health; controlling the quality of inputs and products certifying the standardized and true labeling of drugs and vaccines; and training animal health professions. Each step is easily monitored and evaluated through amalgamation of all veterinary services. As a whole, in the poorest countries, many factors which cause the hindrance of efficient veterinary service delivery must be taken into account in designing reform measures to reorganize of veterinary services.

Data Availability

No data are associated with this article.

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Competing Interests

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