



The Quality of Veterinary Pharmaceuticals

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Ensuring the quality of veterinary medicines is a key challenge for veterinary practitioners and policy makers around the world. The International Federation of Animal Health has estimated the illegal veterinary medicines trade to be worth 1 billion USD annually, roughly 3% of the value of the legal veterinary market.¹ The use of poor quality pharmaceuticals directly undermines livestock keepers' assets by putting the health of their key assets (livestock) at risk: treatment failure, adverse reactions and antimicrobial resistance (AMR) all lead to increased morbidity and mortality. Furthermore, it can erode public confidence in Community Based Animal Health Systems – a well-trained and informed animal health service provider (AHSP) will not be able to successfully treat an animal if the pharmaceuticals used are themselves deficient. Ultimately, poor quality pharmaceuticals provide a food safety, human health and environmental risk.

The diagram (Figure 1) below highlights the multiple factors contributing to the quality of a drug: from the innate quality of the product to its handling throughout the supply chain, including pharmacovigilance and proper disposal. Proper disposal of pharmaceuticals is a One Health concern in terms of the environment (e.g. risk of water contamination), animal health (adverse reactions or antimicrobial resistance development) and human health (antimicrobial resistance or risk of contact with improperly disposed drugs or equipment such as needles)². An overarching pre-requisite for maintaining the quality of the supply chain is the regulatory framework of the country and the effectiveness of its enforcement.

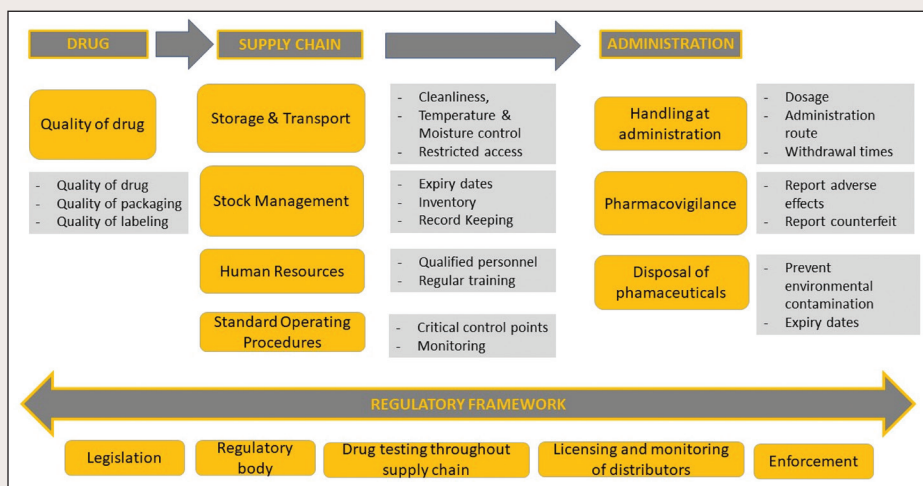


Figure 1: Factors governing the quality of veterinary pharmaceuticals

The quality of pharmaceuticals can be assessed through both laboratory analysis and the effectiveness of a given treatment. Research with Fulani herders in Nigeria³ found they responded to the challenge of poor pharmaceutical quality by testing a drug on a small number of sick animals first and then waiting to see its result before buying more of the same product. Thus livestock-keepers can be included in monitoring systems providing upwards feedback and reporting treatment failure or adverse effects. However, assessing the response to treatment also relies on correct diagnosis, drug handling and administration. Ensuring the delivery of quality of pharmaceuticals is not sufficient for positive outcomes. It must go hand in hand with effective capacity building of frontline animal health services.

Drawing on an analysis of the LEGS Operational Research Project and multiple donor policies (ECHO, USAID/OFDA and the Belgian Development Agency) the framework in Figure 2 is proposed for ensuring the quality of veterinary pharmaceuticals procured in an emergency livestock context. The framework is based on 7 key steps – the majority of which should be applied during the preparedness phase (LEGS Core Standard 2) as they relate to strengthening the local supply chain for quality pharmaceuticals. Community participation at multiple stages from planning and implementation to monitoring and evaluation will strengthen outcomes.

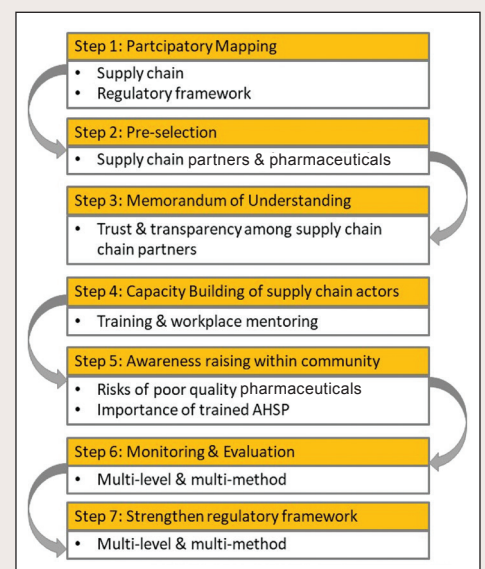


Figure 2: Framework for veterinary pharmaceutical procurement

1 IFAH (2017) [Illegal Veterinary Medicines: Impact & Effective Control](#)

2 [One Health](#) is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems. It recognizes the health of humans, domestic and wild animals, plants and the wider environment (including ecosystems) are closely linked and inter-dependent (OHHLEP One Health definition, 2011).

3 Kingsley P (2015) Inscrutable medicines and marginal markets: tackling substandard veterinary drugs in Nigeria *Pastoralism: Research, Policy and Practice* (2015) 5:2

It is strongly recommended to use existing legal local supply chains for procurement so as to avoid undermining private veterinary sector services. The implementing agency should procure and import directly only in cases where the supply chain has broken down due to conflict or in an acute emergency. In those cases it is still recommended to procure within the sub-region where possible so as to strengthen regional markets. Such approaches often will also enable more timely procurement.

Monitoring & Evaluation (LEGS Core Standard 6) is a central pillar for quality assurance and should occur throughout the different stages of the supply chain including traceability, spot checks, and user feedback (community and AHSPs). Where doubts are raised with regard to the quality of a particular batch of medicine, it should be tested.

The issue of selection of pharmaceuticals is important with regard to ensuring quality: selected pharmaceuticals should be suitable for the end user environment (storage conditions, familiarity of AHSPs with the product, and administration skills etc.). Selection of pharmaceuticals should take into account both the needs and ability of the health service – mass procurement of antibiotics which do not respond to a precise animal health need or end up incorrectly administered could contribute to antimicrobial resistance (AMR).

AMR refers to micro-organisms – bacterial, fungi, viruses, and parasites – that have acquired resistance to antimicrobial substances. While this phenomenon occurs naturally through microbial adaptation, it is exacerbated and accelerated through the inappropriate and excessive use of antimicrobials. The consequences of AMR go beyond eroding livestock herders' key assets and reducing food security, as it also presents a risk to public health. Emergency interventions dealing with livestock health

should strive to apply best practices such as:

- **Focus on prevention and prophylaxis:** capacity building on good animal husbandry and vaccination are key to reducing the use of antimicrobials.
- **Rational and targeted use:** antimicrobials should be used only after diagnosis of a condition by an animal health professional. Interventions should refrain from blanket treatments such as mass de-worming and instead only treat sick animals.
- **Procurement of antibiotics should be justified on the basis of a needs assessment** and projects should refrain from mass purchase of antibiotics.
- **Use of quality medicines:** the formal supply network can be strengthened through the purchase of assured quality drugs.
- **Training based strategies:** training can raise awareness on counterfeit drugs and the risks of AMR to public health, to enable livestock keepers to make more informed decisions.

In conclusion, the above-mentioned strategies rely on preparedness (LEGS Core Standard 2). Core Standard 6: Monitoring and Evaluation is also key for guaranteeing the quality of pharmaceuticals and should be incorporated into the design of any procurement action. Widespread awareness-raising is essential for combatting both the trade in counterfeit pharmaceuticals and risks of AMR. It is worth incorporating One Health approaches to such activities, communicating to livestock keepers and AHSPs the risks of poor quality pharmaceuticals and improper disposal to the environment, animal health and human health.

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About LEGS

The Livestock Emergency Guidelines and Standards (LEGS) are a set of international guidelines for improving the quality of livestock programmes in humanitarian crises. LEGS provides standards and guidance based on good practice from around the world to help decision-makers and practitioners to improve their support to livestock keepers affected by crisis. LEGS is a non-profit entity registered in the United Kingdom, managed by a Board of Trustees, and supported by a small central secretariat.



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