Indian Federation of Animal Health Companies

INFAH

INDIAN ANIMAL HEALTHCARE

ANTIMICROBIAL USAGE IN 2024

A REPORT

Compiled and Prepared by
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Preface

Indian animal husbandry sector is contributing significantly to the national economy as well as socio-economic development of the country. The sector serves as a source of income generation and employment avenues besides providing nutrition through animal produce like milk, eggs, and meat. Despite of being one of the largest producers, India's protein consumption is much lower than the 48 g/day that is recommended by the Indian Council of Medical Research (ICMR). The recommended dietary allowance of protein for an average Indian adult is 0.8 to 1 gm per kg body weight, however, the average intake is about 0.6 gm per kg body weight. A recent survey (ICRISAT) shows that two third of the Indian households are deficient in protein intake.

India is witnessing a rising demand for animal protein, driven by growing health awareness, urbanization, and an expanding middle class with increased purchasing power. Recent data indicates that approximately 70% of Indian consumers are actively modifying their diets to enhance overall health and immunity, with a particular emphasis on protein-rich foods. This demand spans traditional sources such as eggs, poultry, and dairy, as well as value-added and fortified products tailored to modern lifestyles. Given the increasing demand for animal-based products and the sector's considerable untapped production potential, animal husbandry is expected to experience sustained growth in the coming years. Also, the growth in consumption is accompanied by heightened scrutiny around food safety. Concerns over antibiotic residues, contamination, and lack of traceability in the animal protein supply chain are shaping consumer preferences and regulatory responses. Incidents of foodborne illness and growing awareness of zoonotic diseases have led to increased demand for transparency, quality assurance, and hygienic processing standards.

In this evolving landscape, the animal healthcare industry plays a crucial role in disease prevention, nutritional support, and enhancing livestock productivity. Despite its significance, there are considerable challenges, particularly in rural India where modern animal husbandry practices are not consistently implemented. One of the most pressing issues is the limited availability of veterinary treatment and diagnostic facilities. Inadequate infrastructure and insufficient coverage continue to hamper immunization efforts and disease control programs across many regions of the country. India's largest livestock holding 11% of the world's population has tremendous potential for growth and to uplift rural economy. Veterinarians need to take all possible steps to treat infectious diseases and to ensure its prevention. Antibiotics are considered as the only choice to treat infections in animals and at times mass medication is also a necessity to minimize its spread to other animals in the farmers' herd.

Antibiotics in Animal Healthcare practices

In Veterinary Medicine, antimicrobials play a critical role in protection of animal health, animal welfare, and food-safety. The role of antibiotics is immense for a sustainable growth of animal husbandry sector by safeguarding health & life of animals and there is a need to strike a balance between the benefits and risk of using antimicrobials in the food supply chain. Antimicrobial agents have been used in food-producing animals for several decades, and many continue to demonstrate efficacy against common bacterial pathogens, with relatively low levels of resistance observed in certain contexts.

To safeguard public health, the use of critically important antimicrobials—such as carbapenems, advanced-generation fluoroquinolones and cephalosporins—are generally prohibited in food animals in many jurisdictions. The WHO maintains a list of 'critically important' antibiotics classes (CIAs) for human health. Some of these are also authorized for use in animals, as well as categorized 'Veterinary Critically Important Antibiotics' by WOAH which means they are "essential" for animal use with no "sufficient alternatives". While some overlap exists in the use of medically important antibiotic classes, including fluoroquinolones, macrolides, and cephalosporins, such agents are typically administered under strict veterinary prescription, in accordance with national and international guidelines for antimicrobial stewardship. This regulatory approach aims to minimize the risk of cross-resistance and preserve antimicrobial efficacy across both human and veterinary domains.

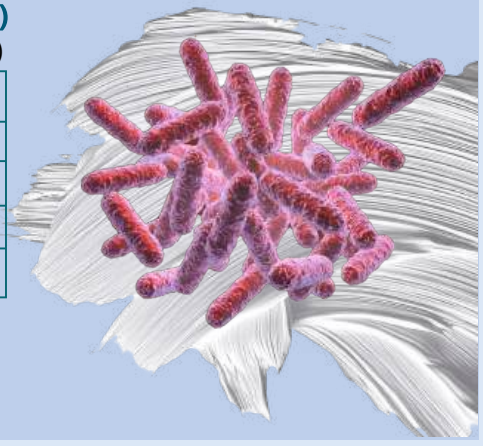
INFAH initiatives on AMU estimation:

The Indian Federation of Animal Health Companies (INFAH), which represents approximately 85% of the country's animal health industry, has been actively compiling estimates on antibiotic usage since 2020 within the organized animal healthcare sector. The estimated reports have been submitted to the Department of Animal Husbandry and Dairying (DAHD) to support informed policy and regulatory decisions. The compiled data on antibiotic usage for the period 2020 to 2023 is presented in the table below:

Table 1: AMU estimation in Indian Animal Healthcare (2020-2023)

(In Tons)

Year	Livestock	Poultry	Total
2020	550	362	912
2021	588	375	963
2022	645	397	1042
2023	584	414	998



Similar exercise has been carried out for estimation of antibiotic use in Indian animal healthcare adopting the same methodology for the year 2024. The estimated data shows 1.9% growth in antibiotic uses over last year.

AMU estimation: Category wise bifurcation of Antibiotics Usage in 2024

(In Tons)

Antibiotic class	Estimates 2023				Estimates 2024			
	Livestock	Poultry		Total Consumption	Livestock	Poultry		Total Consumption
		Therapeutic	MFA			Therapeutic	MFA	
Aminoglycosides (Streptomycin, Gentamicin, Amikacin,Neomycin)	60	31		91	62	35		97
Penicillin (Natural Penicillin, Amino-penicillin)	77	16		93	85	16		101
Sulfonamides (including Trimethoprim)	139	17		156	143	18		161
Cephalosporins	69	9		78	70	8		78
Fluoroqunolones	129	68		197	133	70		203
Tetracylines (Tetracycline, Oxytetracycline, CTC)	105	30	50	185	109	30	45	184
Macrolides (Tylosin, Tilmicosin, Erythromycin etc)	5	20	24	49	5	26	22	53
Pleuromutilin (Tiamulin)		30	35	65		31	35	66
Others (Lincosamides, Avilamycin, Streptogramins, Flavophospholipol)	0		84	84	0		74	74
Total Consumption	584	221	193	998	607	234	176	1017

Information Gap About Animal Healthcare

There is lot of misinformation around the use of antibiotics in animal healthcare. The use of antimicrobial agents in animal care has been identified as a contributing factor to the development of resistance in animal pathogens. In certain cases, resistant bacteria or resistance genes may be transmitted from animals to humans, raising public health concerns. However, the extent to which antimicrobial use in animals directly impacts human health remains unclear.

Many studies on antimicrobial resistance (AMR) lack definitive insights into the origin of resistance in pathogens, and there is currently no systematic or comprehensive data on the prevalence of AMR infections within livestock populations. This gap in surveillance and traceability poses challenges for both risk assessment and the development of targeted mitigation strategies.

As per published report in 2010 'Antibiotic Use and Resistance in Food Animals- Current Policy and Recommendations' from Center for Diseases Dynamics, Economics & Policy (CDDEP), reveals India accounts for 3% of the global livestock antimicrobial consumption i.e. around 2000 MT (hosts 11.6% of world's animal population). However, the methodology adopted in the study is not clear and seemingly, no major stakeholders were consulted in the process. As per the current estimates of the industry, the AMU consumption found to be approximately half, even after ten years of the report mentioned.

·Media coverage has often sparked public concern about antibiotic use in animal healthcare, shaping consumer perceptions that are frequently based on assumptions rather than scientific evidence. Misinformation surrounding this issue remains widespread. In particular, the use—and alleged overuse—of antibiotics in veterinary medicine has been repeatedly portrayed as the primary driver of antibiotic resistance, a claim that lacks substantial scientific backing.

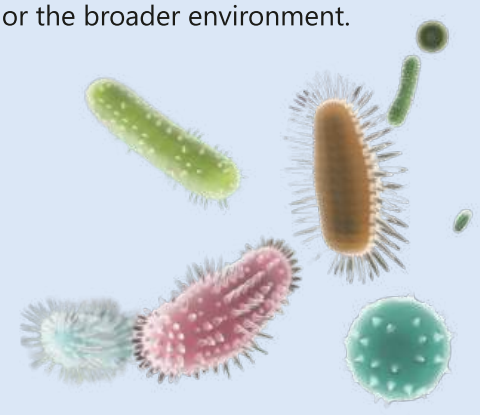
Two reports published in 2014 and 2017—'Antibiotics in Chicken Meat' and 'Antibiotic Resistance in Poultry Environment' respectively, raised alarms about antibiotic residues and resistant bacteria associated with Indian poultry farming.

These reports portrayed the poultry sector as a significant source of antimicrobial resistance. However, the detected antibiotic residues in chicken meat (70 samples) were well below the established Maximum Residue Limits (MRLs), indicating compliance with safety standards. The second report cited resistance to critical human-only antibiotics such as Meropenem and Linezolid in environmental samples near poultry farms. Based on such major discrepancies in both the studies - drawing definitive conclusions about poultry farming as the primary source of resistant bugs is premature, underscoring the need for robust, systematic surveillance and in-depth scientific evaluation.

Few Conclusions of Scientific Reports on AMR

Numerous research studies conducted on drug resistant bacteria do not provide information on the origin of AMR in pathogens. Also, there is no systematic and comprehensive data on the prevalence of AMR infections in livestock.

- The European Medicines Agency states that the biggest driver of AMR in people is the use of antimicrobials in humans or human health. UK government's scientific strategy report also concurred that the clinical issues with AMR in humans are primarily the result of antibiotic use in people rather than the use in animals
- In 2019 the US CDC published a report on antibiotic resistance threats indicates that out of 18 species of antibiotic-resistant bacteria that poses the greatest threat to human health, only 2 are partially related to the use in food animals
- In a pivotal study, the European Centre for Disease Prevention & Control found that 75% of illness related to resistant bacteria stem from healthcare-associated infection
- Study from university of Edinburgh (2017) found that curtailing the use of antibiotics in food animals has a stand-alone measure, will have minimal impact on the level of resistance in humans
- Numerous scientific reports conclude that transmission of bacteria and its resistant genes form animal to human is not common. Most of them are host specific and transmission of such resistant genes from animal to human is very limited. (Mather et al.3, in Science Sept 27, 2013; Swedish Veterinary Antimicrobial Resistance Monitoring," 2013; H.Sharp et al. Sept 2014)
- In 2021, the UK government found resistance to 'high priority' critically important antibiotics in animals was 'low or not detected 'for E. coli and 'no resistance' or 'very low' for salmonella
- The recent study published in 2024, conducted by researchers from ICMR, Cambridge University and Christian Medical College (CMC), Vellore states 'the dangerous strains of Klebsiella pneumoniae, a common bacteria causing infections, those combining resistance to antibiotics with a higher potential for causing infections, emerge primarily within hospital settings rather than spreading from animals or the broader environment.



Conclusion & Way Forward:

The most effective way to move forward is to minimize the use of antibiotics by focusing on disease prevention. This begins with broader support for vaccine research, development, and distribution, as well as protecting animals from infectious diseases through improved hygiene and biosecurity practices.

Vaccination remains the most powerful tool to prevent disease from taking hold in individual animals and spreading through flocks or herds. Where vaccines are already available, efforts must ensure that farmers and their livestock can access them. Where vaccines do not yet exist, both public and private sectors must invest in research to accelerate their development. In addition to vaccination, farmers need better training and support to maintain overall health of their herd. Healthy livestock are less likely to become ill, reducing the need for treatment. The animal health sector continues to innovate, offering an expanding range of products to support animal wellbeing such as more nutritious feed, immune stimulants to strengthen natural defences, and herbal & probiotic solutions as alternative therapies to antibiotics. Besides, early detection and accurate diagnosis are critical to effective containment and treatment. Investing in preventative care and rapid response capabilities offers the best chance to protect animal health and reduce antibiotic use. Finally, adopting a 'One Health' approach is essential to coordinate efforts across sectors including animal health, human medicine, agriculture, aquaculture, and the environment.

Acknowledgement:

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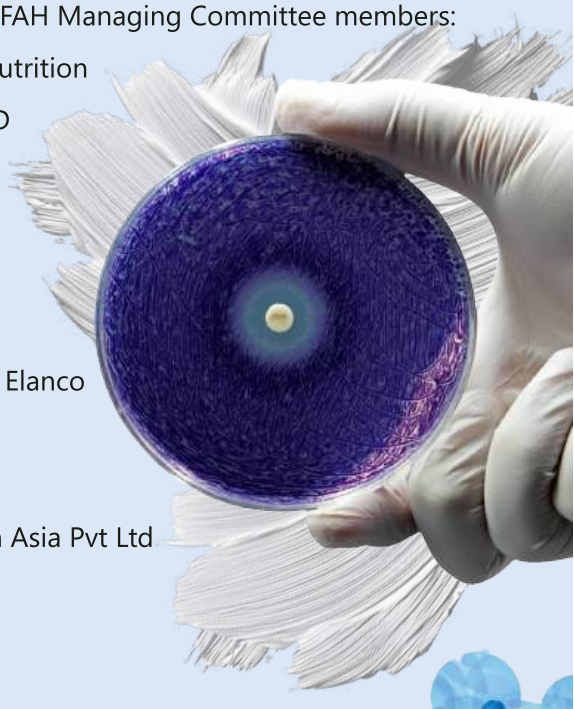

VISION:

Towards creating trust among the Veterinary Professionals and Livestock, Poultry, Aqua & Companion animal stake holders and Animal Health Industry's value and contribution to society, by setting high standards of competitiveness, ethical business practices, innovation and leadership among its members for sustainable Animal Health Industry in India and also ensuring significant presence across the Globe.

MISSION:

- **Contribute towards the development of regulatory framework for the new and existing animal health products.**
- **Contribute towards drafting National Health Policy of India with all stakeholders.**
- **Formulate a fair marketing environment through ethical business practices.**
- **Partnering with Global Animal Health Trade Bodies for establishing identity of Indian Animal Health Industry.**
- **Create a database on various segments of Animal Health Industry for business decisions.**

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