World Organisation for Animal Health

Regional Workshop on Advancing WOAH AMR Standards in Veterinary Practice

8 – 10 April 2026, Nairobi, Kenya

MINISTRY OF AGRICULTURE AND LIVESTOCK DEVELOPMENT
REPUBLIC OF KENYA

WVA

The Fleming Fund

World Organisation for Animal Health

PRINCIPLE OF ANTI MICROBIAL STEWARSHIP: IMPLEMENTING AMS PLAN IN CLINICAL SETTINGS

Presented by:

Dr. Olatunji Nasir

Medical Director & CEO Truthmiles Animal Hospital Limited

President-Elect, World Veterinary Association, WVA

Immediate Past President, Commonwealth Veterinary Association, CVA

AFSCAN Ambassador, Nigeria

Vice President, Small Animal Veterinary Association, Nigeria

What is Antimicrobial Stewardship?

Definition:

A coordinated program that promotes the appropriate use of antimicrobials by selecting the optimal drug, dose, duration, and route of administration to improve patient outcomes, reduce antimicrobial resistance, and decrease costs.

Right Drug

Select the most effective and narrow-spectrum agent based on culture data.

Right Dose

Optimize dosing regimens using PK/PD principles and patient-specific factors.

Right Duration

Limit therapy to the shortest effective course to reduce resistance selection.

Why Antimicrobial Stewardship Matters

700K Deaths/year globally from AMR — Projected 10 million by 2050
30% of inpatient antibiotics are inappropriate (CDC estimates)
50% reduction in CDI with ASP implementation (published studies)
$1B+ annual cost of AMR in US healthcare

Consequences of Inappropriate Antibiotic Use:

- Development of multi-drug resistant organisms (MDROs)
- Clostridium difficile infections (CDI)
- Adverse drug reactions and drug-drug interactions
- Increased healthcare costs and length of stay

Core Principles of Antimicrobial Stewardship

01. Prospective Audit & Feedback
Pharmacists/ID physicians review antimicrobial prescriptions and provide real-time feedback to prescribers.

02. Formulary Restriction & Pre-authorization
Certain broad-spectrum agents require approval before dispensing to control unnecessary use.

03. De-escalation
Transition from empiric broad-spectrum to narrow-spectrum therapy once culture results are available.

04. IV to Oral Conversion
Switch to oral therapy when clinically appropriate to reduce line complications and length of stay.

05. Dose Optimization
Utilize PK/PD principles (extended infusions, weight-based dosing) to maximize efficacy and safety.

06. Diagnostics Stewardship
Ensure appropriate specimen collection and interpretation to guide targeted antimicrobial therapy.

ASP Program Structure & Key Stakeholders

Core ASP Team

- Veterinarian — Clinical champion & program leader
- Veterinarian/VPP — Daily reviews, dosing, PK/PD optimization
- Designated VPPs/ Veterinarian — Surveillance and compliance monitoring
- Microbiologist — Antibiogram interpretation, lab support
- Hospital Administration — Institutional support and resources

Enabling Infrastructure

- Clinical Decision Support (CDSS) — Real-time alerts in EHR for dosing, interactions
- Microbiology Lab Integration — Rapid diagnostics, susceptibility reporting
- Antibiogram Reports — Annual institution-specific resistance patterns
- Education & Training Programs — Regular CME, case reviews, prescriber feedback
- Performance Metrics & Reporting — DDD, DOT, resistance rates, cost tracking

Implementing an ASP: Step-by-Step

Phase 1 — Foundation

Secure leadership buy-in & dedicated resources; assemble multidisciplinary ASP team; define program scope and priority areas.

Phase 2 — Assessment

Baseline audit of antimicrobial prescribing patterns; review local antibiogram, resistance trends, and identify knowledge gaps.

Phase 3 — Strategy

Develop institution-specific guidelines and protocols; design restriction & pre-authorization pathways; create education materials.

Phase 4 — Implementation

Launch prospective audit & feedback; integrate CDSS alerts in electronic records; train all clinical staff on ASP practices.

Phase 5 — Monitoring

Track KPIs: DOT/1000 patient-days, DDD; monitor resistance rates and CDI incidence; report outcomes to stakeholders quarterly.

Key ASP Interventions in Clinical Practice

Empiric Therapy Guidance

Develop empiric treatment guidelines based on local antibiogram; differentiate community-acquired vs. healthcare-associated infections; update guidelines annually.

Culture-Directed De-escalation

Review cultures at 48–72 hours and narrow therapy; discontinue antibiotics if infection is ruled out; educate prescribers on “antibiotic time-outs”.

Rapid Diagnostic Testing

Use rapid PCR panels to guide early targeted therapy; blood culture identification with MALDI-TOF; Procalcitonin to differentiate bacterial vs. viral infections.

Surgical Prophylaxis Optimization

Ensure correct agent selection per SCIP guidelines; administer within 60 minutes before incision; limit duration to 24 hours or less post-operatively.

Measuring ASP Success: Metrics & Outcomes

Reported Improvements with ASP Implementation

- Appropriate Prescribing: 32% improvement
- IV to Oral Conversion: 47% improvement
- CDI Rate Reduction: 39% improvement
- MRSA Bacteremia: 28% improvement
- Antibiotic Spend: 25% improvement

Key Performance Metrics

- DOT/1000 — Days of Therapy per 1000 patient-days (primary utilization metric)
- DDD — Defined Daily Doses per WHO standard (enables benchmarking)
- % De-escalation — Culture-directed therapy narrowing (quality of care indicator)
- CDI Rate — C. diff infections per 10,000 patient-days (outcome metric)

Common Challenges & How to Address Them

Prescriber resistance to feedback and restrictions
Engage veterinarians early; use data-driven, non-punitive feedback.

Limited pharmacy and ID resources
Prioritize high-risk areas (ICU, oncology); use tech-assisted reviews.

Diagnostic uncertainty driving broad empiric use
Expand rapid diagnostics; promote "antibiotic time-out" at 48–72 hours.

Lack of institutional leadership support
Present ROI data and patient outcome metrics to administration.

Variation in prescribing across departments
Department-specific protocols; targeted education campaigns.

Key Takeaways

1. **AMS is essential to combat antimicrobial resistance — a global health crisis.**
2. **Successful ASPs require multidisciplinary teams, leadership support, and technology.**
3. **Core strategies: audit & feedback, restriction, de-escalation, IV-to-oral, and diagnostics.**
4. **Measurable outcomes (DOT, CDI rates, costs) demonstrate program value.**
5. **Ongoing education and culture change are critical for long-term success.**

"The goal of stewardship is not to restrict antibiotics — it's to use them wisely."

Thank you!