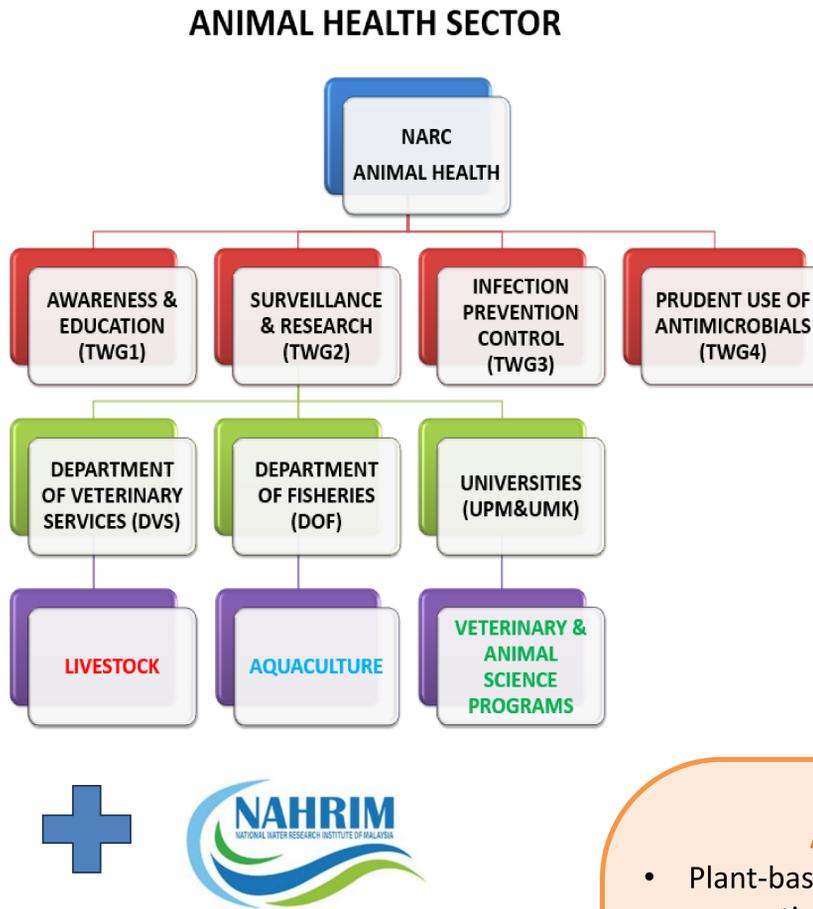
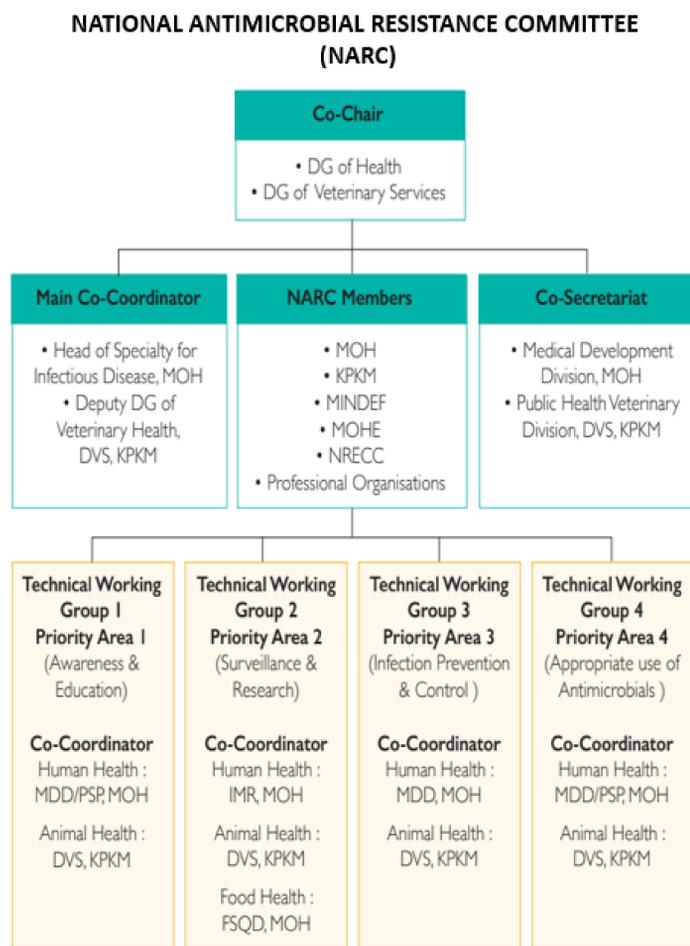




The Current State of AMR Research Activities Including Alternative to Antimicrobials (ATA) and Collaboration Opportunities in Malaysia

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BACKGROUND OF AMR RESEARCH IN MALAYSIA (ANIMAL HEALTH SECTOR)



LIST OF STAKEHOLDERS

- Ministry of Agriculture and Food Security
- Ministry of Health
- Ministry of Natural Resources and Environmental Sustainability
- Ministry of Energy Transition and Water Transformation
- State Governments and Authorities
- Farmers
- Private Sectors
- Public

ATA RESEARCH FOCUS

- Plant-based compound with antimicrobials properties as feed additives (poultry)
- Organic acids mixture as AGP alternative (poultry)
- Development of vaccines for animal diseases (livestock and fish)

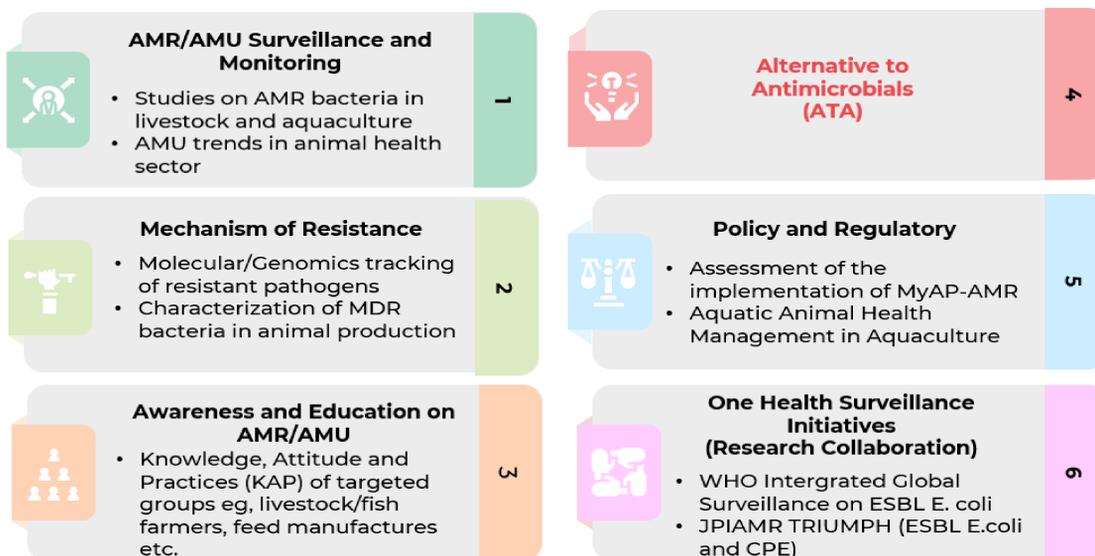
REGULATORY BARRIERS

- Approval processes – DVS and NPRA
- International trade standards – CODEX Alimentarius, WTO-SPS Agreements
- Intellectual Property and Patents

PRACTICAL BARRIERS

- Costly
- Efficacy and consistency
- Limited local expertise
- Market acceptance

KEY AREAS OF AMR RESEARCH IN ANIMAL HEALTH SECTOR



CHALLENGES AND SOLUTIONS TO AMR/ATA RESEARCH

C1	C2	C3	C4
High research and development cost in AMR/AMU/ATA	Low market acceptance and industry adoption to new treatments or alternatives	Efficacy and consistency issues of the ATA	Limited local expertise on AMR/AMU/ATA
S1	S2	S3	S4
<ul style="list-style-type: none"> • Increase funding or incentive for R&D in AMR/AMU/ATA from government or private sectors • Collaboration with private sector thru public-private partnership initiative for innovation 	<ul style="list-style-type: none"> • Educate farmers and veterinarians on alternative treatments and long-term benefits of reducing antimicrobial use 	<ul style="list-style-type: none"> • Comprehensive ATA research to ensure consistency of the ATA across environmental factors, animal conditions, and formulation stability 	<ul style="list-style-type: none"> • Collaboration with global institution • Promoting research collaboration through One Health approaches

COLLABORATION OPPORTUNITIES

- Research on alternatives to antimicrobials in the animal health sector
- Improving AMR and AMU surveillance in the animal health sector
- Molecular and genomics tracking of resistant pathogens
- Monitoring the aquatic and terrestrial animal discharge to the environment (water bodies)
- Risk assessment of AMR transmission through the food chain
- Role of digital technology and artificial intelligence (AI) in early disease detection and antimicrobial stewardship

ACKNOWLEDGEMENT

- Dr Akma Ngah Hamid, Dr Rohaya Mohd Ali, Dr Tariq Jaafar (Department of Veterinary Services)
- Assoc. Prof. Dr Arifah Kadir (Universiti Putra Malaysia)
- Dr Wan Norhana Md Noordin (Department of Fisheries Malaysia)
- Dr Noor Haza Fazlin Hashim (National Water Research Institute of Malaysia)