Bangladesh Antimicrobial Treatment Guidelines for Poultry

Reference Guide for Veterinarians
2025

The Fleming Fund

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Acknowledgement

This project is funded by the Department of Health and Social Care (DHSC)'s Fleming Fund using UK aid. The views expressed in this publication are those of the authors and not necessarily those of the UK DHSC or its Management Agent, Mott MacDonald.

This document is adapted from the **"Standard Treatment Guidelines (STG) for Poultry, Bangladesh- A guideline for the prevention, control and treatment of important bacterial diseases in poultry"** First Edition, 2022

Created by the Department of Livestock Services (DLS) with technical support from the Food and Agriculture Organisation (FAO) of the United Nations, Bangladesh

Disclaimer: It remains the sole responsibility of the prescribing veterinarian to confirm the dose, withdrawal period and suitability of all medications in which they are used. This document is intended as a guide only, complex situations may require deviation from suggested treatments and use of independent clinical judgement.

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Systemic Disease

DISEASE	CLINICAL SIGNS	POST-MORTEM	TREATMENT
Colibacillosis *E.coli*	Variable: Gastrointestinal, Respiratory, Omphalitis, Colisepticaemia, Reproductive	Airsacculitis, enteritis, salpingitis, peritonitis, pericarditis, nodular organ lesions, salpingitis Omphalitis (chicks)	Treatment with antibiotics is not often recommended, try to identify the cause of infection by addressing hygiene and concurrent infections. Multi-drug resistance common so culture and antibiotic sensitivity testing is required. Treatment options: Florfenicol or Neomycin unless culture indicates otherwise. Do not use fluroquinolones (e.g. ciprofloxacin, norfloxacin) without culture and sensitivity as resistance against these medications is very high.
Fowl Cholera *Pasteurella multocida*	Increased mortality, depression, anorexia, fever, diarrhoea, rapid breathing, swollen wattles/joints, torticollis	Haemorrhages on heart, gizzard, fat, consolidation of lungs, liver congested or yellow +/- white necrotic lesions. Swollen wattles, exudate in joint and tendon sheaths, free yolk in peritoneal cavity.	Multi-drug resistance common so culture and antibiotic sensitivity testing is highly recommended. Treatment options: Florfenicol once a day for 3 days unless culture indicates otherwise. Alternatives include: Trimethoprim-sulphonamide for 3-5 days OR Tetracyclines for 5-7 days OR Amoxicillin for 3-5 days. Vaccine available.
Pullorum Disease *Salmonella pullorum*	Death soon after hatch, anorexia, white diarrhoea/pasted vent	Young birds: unabsorbed yolk sac, grey nodules in liver/spleen/lungs/heart/gizzard/intestine, swollen joints. Adult: usually no lesions, nodular pericarditis, fibrinous peritonitis, misshapen caseous ovaries, testicular abscess.	Treatment of salmonellosis not always recommended, prevention and eradication of infected birds preferred. Biosecurity prevents horizontal transmission and testing of breeding flocks can prevent vertical transmission. Check for concurrent diseases causing immunosuppression. Survivors often become carriers with ovarian infection producing infected offspring. Antibiotics do not eliminate infection and increase carrier state. Treatment options: Florfenicol for 3 days OR Neomycin for 5-7 days. Other options: Amoxicillin for 3 days OR Trimethoprim-Sulphonamides for 3-5 days
Fowl Typhoid *Salmonella gallinarum*	Moribund/dead chicks, white pasty vents, anorexia, laboured breathing. Drop in feed, depressed, fever, green diarrhoea, death	Young: similar to pullorum with unabsorbed yolk sac and grey nodules. Adult: swollen, friable, bile-stained liver, enlarged dark spleen and kidneys, anaemia, enteritis	See Pullorum disease above. Treatment options: Florfenicol once daily for 3 days OR Neomycin for 5-7 days. Other options: Amoxicillin for 3 days OR Trimethoprim-Sulphonamides for 3-5 days Vaccine available

Respiratory Disease

DISEASE	CLINICAL SIGNS	POST-MORTEM	TREATMENT	NOTES
Mycoplasmosis *Mycoplasma gallisepticum*	Respiratory- rales, difficulty breathing, sneezing, coughing, nasal discharge, conjunctivitis, poor physical condition, loss of weight performance	Exudate in respiratory passages, cloudiness of air sac- exudate or caseous/yellow appearance, fibrinous pericarditis and perihepatitis	Treatment options: Tilmicosin in water for 5 days Alternatives include: Tiamulin fumarate in water once a day for 3-5 days OR Tylosin in water once a day for 3-5 days	Vertical transmission possible with F-strain vaccine. Obtain birds from Mg free flocks. Multiage flocks makes control difficult.
Infectious Coryza *Avibacterium paragallinarum*	Clear to purulent nasal discharge, swelling of infraorbital sinuses, eyes closed, dyspnoea, loss of condition.	White- yellow pus and mucus in infraorbital sinus, subcutaneous oedema of face/wattles, catarrhal conjunctivitis, tracheitis, pneumonia	Treatment options: Trimethoprim/Sulphonamides for 4-7 days OR Tetracyclines for 5-7 days OR Erythromycin for 3-5 days	Vaccine available. Depopulate and disinfect between cycles. Obtain birds from 'free' flocks.
Avian Influenza (AI)	LPAI: sneezing, coughing, ocular and nasal discharge, and swollen infraorbital sinuses in poultry HPAI: sudden death, cyanosis/oedema of head, necrosis of comb/wattles, oedema/discolouration of feet, green diarrhoea. Neurological signs.	Congestion and inflammation of the trachea and lungs. Petechial haemorrhage, oedema and necrosis of organs/muscles.	No specific treatment available. Low pathogenic strains can use antimicrobials to control any secondary infections.	Vaccination available. Biosecurity to prevent disease entering flock. Zoonotic Risk.
Infectious Laryngo-tracheitis (ILT) *Infectious laryngotracheitis virus*	Respiratory distress, coughing, rales, gasping, bloody mucous. Nasal/ocular discharge, tracheitis, conjunctivitis	Tracheal mucosa congested, haemorrhagic with exudates. Mucosa oedema.	No antimicrobial treatment effective. Vaccination – administration to birds during an outbreak. Can also be used to prevent infection.	Biosecurity to prevent infection. Birds are carriers for life after infection and can be reactivated under stressful conditions.

Gastrointestinal Disease

DISEASE	CLINICAL SIGNS	POST-MORTEM	TREATMENT	NOTES
Necrotic Enteritis *Clostridium perfringens A, C*	Death, up to 20% mortality Depression, inappetence, anorexia, dark diarrhoea, emaciation	Dehydration, water in crop, intestines ballooned with gas- foul smelling brown liquid. Mucosa has ulcers, light yellow spots or 'Turkish towel' appearance. Dark congested liver.	Treatment options: Lincomycin twice a day for 3-5 days OR Amoxicillin trihydrate twice a day for 3-5 days	Probiotics reduce severity- *Lactobacillus acidophilus* and *Streptococcus faecium*. Disinfection and feed management. Control of coccidia important in prevention.
Ulcerative Enteritis *Clostridium colinum*	Sudden mortality in good condition Listless, ruffled feathers, white diarrhoea, emaciation, death	Water in crop, small round ulcers surrounded by haemorrhage in SI, ceca and LI. Perforate and peritonitis. Yellow to gray necrotic foci in liver.	Treatment options: Lincomycin twice a day for 3-5 days OR Amoxicillin trihydrate twice a day for 3-5 days	Probiotics – *Lactobacillus acidophilus* and *Streptococcus faecium* reduce severity. Add salt to flooring.
Coccidiosis *Eimeria* spp.	Depressed, ruffled feathers, dehydration, weight loss Mucoid/bloody diarrhoea, high mortality	*E. tenella*- cecal erosion, free blood. *E. necatrix*- midgut small white or red spots on serosa, 'salt and pepper' appearance, ballooning of gut, bloody mucous exudate. *E. maxima*- thickening of intestinal wall.	Treatment options: Toltrazuril once a day for 2 days (Toltrazuril does not allow for immunity development) OR Amprolium for 5-7 days OR Diclazuril once a day for 3-5 days	Disinfection, 14% lime mixed with litter Continuous use of anticoccidials promotes resistance. Vaccines. Rotation of anticoccidials is important. Prevention is the best management option.
Spotty Liver Disease *Campylobacter hepaticum*	Non-specific, decreased egg production, increased mortality rates	Liver- multiple areas of focal necrosis.	Treatment options: Chlortetracycline once a day for 5-7 days OR Lincomycin- Spectinomycin for 3-5 days	Most commonly breeder and layer birds

Miscellaneous

DISEASE NAME	CLINICAL SIGNS	POST-MORTEM	TREATMENT	NOTES
Infectious Bursal Disease (Gumboro) *Infectious Bursal Disease virus*	Incoordination, watery diarrhoea, soiled vent, vent picking, cloaca inflammation	Cloacal bursa enlarged, oedematous with yellow transudate on surface and haemorrhages observed on surface. Sometime cloacal bursa atrophied.	No antibiotics will be effective. Supportive treatment only.	Vaccination especially of breeder flocks to pass on maternal immunity. Birds then require further vaccination. Disinfection after depopulation as virus stable in the environment.
Newcastle Disease (Ranikhet Disease) *Newcastle Disease virus*	Lethargy, anorexia, respiratory distress (whistling), clear discharge from mouth, sudden death, high mortality, green diarrhoea, neurological signs	Usually only with viscerotropic velogenic ND. Petechiae on serous membranes, haemorrhage of mucosal surface esp caecal tonsils and peyers patches. Congestion and haemorrhage of trachea and lung.	No medication has been shown to have any effect on the course of disease. Antimicrobials can be used in flocks with low virulence strains to prevent secondary infection (e.g. tetracyclines).	Vaccination. Biosecurity and thorough disinfection processes are vital to control spread.
Inclusion Body Hepatitis *Adenovirus*	Sudden mortality < 6 weeks age. Nonspecific clinical signs- lethargy, huddling, yellow mucoid droppings	Liver swollen, yellow discolouration and red/pale foci.	No specific treatment available. Antimicrobials may help control secondary infections (e.g. tetracyclines).	Vaccination- breeder vaccination confers immunity to young chicks.
Gangrenous Dermatitis *Clostridium septicum, Clostridium perfringens, Staph* spp., *E.coli*	Depression, incoordination, inappetence, leg weakness, ataxia, high fever	Dark red purple to green, weepy areas of skin- abdomen, breast, wings or legs. Necrotic areas haemorrhagic, considerable oedema and gas.	Treatment options: For flock treatment: Tetracyclines for 5-7 days OR Erythromycin for 3-5 days For individual high value bird treatment: Cephalexin twice a day for 5-7 days is an option	Eliminate source of trauma and stress. Clean and disinfect. Add salt to flooring.

Antibiotics

ANTIBIOTIC	DOSE	WITHDRAWAL PERIOD		CONTRAINDICATIONS/ WARNINGS	SPECTRUM OF ACTIVITY
		MEAT	EGGS		
Amoxicillin trihydrate	20mg/kg	1 or 2 days	0 days or DNU	Check licence on product if 0 egg withdrawal.	Broad spectrum, Gram +ve and -ve. Bactericidal.
Amoxicillin-Clavulanic acid	125mg/kg	2 days	0 days	Limited data on withdrawal times for meat, refer to packet for information.	Bactericidal, broad spectrum. Gram +ve and improved gram -ve coverage versus penicillin.
Cephalexin	50-125mg/kg	Limited information	0 days	Limited data on withdrawal times for meat, refer to packet for information.	Bactericidal. Broad spectrum.
Chlortetracycline	60mg/kg	2, 4, 7 days	0	Not for use with calcium or sodium bicarbonate	Bacteriostatic, broad spectrum, Gram +ve and -ve, *Mycoplasma*
Ciprofloxacin	20mg/kg	12-15 days (up to 23)*	DNU	*Not recommended for use in poultry due to human health risk from prolonged residues.	Bactericidal, broad spectrum. Gram +ve and -ve
Doxycycline	10mg/kg	7 days	DNU	Do not use with bactericidal antibiotics. Do not use in birds laying eggs for human consumption	Broad spectrum, Gram +ve and -ve and *Mycoplasma*
Erythromycin	20mg/kg	7 days	DNU	Do not use in birds laying eggs for human consumption. Avoid with monensin.	Bacteriostatic, Gram +ve and some gram -ve, *Mycoplasma*
Florfenicol	30mg/kg	7 days	DNU	Do not use with tetracyclines or macrolides. Important solubility problems- ensure that medication is fully dissolved in water.	Bacteriostatic, broad spectrum Gram -ve (*E.coli*, *Salmonella*) and +ve cocci (Staph/Strep), *Mycoplasma* and *Clostridium*.

Withdrawal period is product specific so review label to confirm. Some recommendations may represent 'off-licence'' doses. DNU= Do not use

Antibiotics

ANTIBIOTIC	DOSE	WITHDRAWAL PERIOD		CONTRAINDICATIONS/ WARNINGS	SPECTRUM OF ACTIVITY
		MEAT	EGGS		
Neomycin	10mg/kg	5 days	5 days	Potential neprotoxicity. Neomycin is mainly active in the gastrointestinal tract.	Gram –ve (*Salmonella, E.coli, Enterobacter*). Not *Pseudomonas*.
Norfloxacin	15mg/kg	12 days	Unknown, DNU	Do not use with tetracyclines, chloramphenicol, macrolides C lincosamides	Broad-spectrum- acts against gram -ve and less so gram +ve bacteria.
Oxytetracycline	70mg/kg	7 or 21 days	DNU	Not for use in egg laying birds for human consumption	Bacteriostatic, broad spectrum, gram +ve and gram –ve. Not *Pseudomonas*.
Tiamulin Fumarate	25-50mg/kg	5 days	5 days	Do not use within 7 days of monensin, narasin or salinomycin	Bacteriostatic. Gram +ve and *Mycoplasma*.
Tilmicosin	30mg/kg	9 days	DNU	Do not use with bacteriostatic antimicrobials. Do not use in birds laying eggs for human consumption.	Bactericidal, effective for gram +ve (particularly *Pasteurella, Actinobacillus* and *Mycoplasma*).
Trimethoprim/ Sulphonamide	30mg/kg (<2 WO) 15mg/kg (>2 WO)	14 days	DNU	Do not use in birds laying eggs for human consumption	Bacteriostatic, Broad spectrum. Gram +ve and Gram –ve.
Tylosin	50mg/kg	0 or 2 days	0 or 5 days	Avoid disposing of waste product into the environment.	Bacteriostatic, Gram +ve and Gram -ve including *Clostridium, Pasteurella* and *Mycoplasma* spp.
Tylvalosine tartrate	25mg/kg	2 days	0 days	No compatibility studies- do not mix with other antibiotics/medications	Bacteriostatic, Gram +ve bacteria and *Mycoplasma*.

Withdrawal period is product specific so review label to confirm. Some recommendations may represent 'off-licence'' doses. DNU= Do not use

Anthelmintics and Anticoccidials

MEDICATION	DOSE	WITHDRAWAL PERIOD		CONTRAINDICATIONS/ WARNINGS
		MEAT	EGGS	
Toltrazuril	7mg/kg 3L medication /1000L water	14 days	DNU	Do not use in birds laying eggs for human consumption
Diclurazil	(2.5% solution) = 1ml per 1 L	0 days	0 days	
Amprolium	20mg/kg	0 days	0 days	
Sulfaquinoxaline	*Review medication packet for dosing	14 days	DNU	Do not use in birds laying eggs for human consumption.
Monensin	100-120mg/kg	0 days	DNU	Not to be given with erythromycin, tiamulin or oleandomycin
Piperazine	200mg/kg	7 or 21 days	DNU	Do not use in birds laying eggs for human consumption
Levimasole	28mg/kg	7 days	0 days	
Fenbendazole	1mg/kg	8 days	0 days	

Withdrawal period is product specific so review label to confirm. DNU= Do not use

Disease Investigation

SYNDROME	SAMPLES AND TESTING	DIFFERENTIAL DIAGNOSES
EARLY CHICK MORTALITY (high mortality 1-14 days)	Postmortem sick or recently dead chicks Submit swabs of lesions and tissue samples for PCR and bacterial culture. Submit whole chicks to the lab. Collect a thorough history of breeding conditions and vaccinations given. Inspect farm management (ventilation, temperature, food/water availability, hygiene) and biosecurity measures.	1-7 days: Yolk sac infection, omphalitis, aspergillosis, non-starters (problems from poor breeding and incubation conditions), dehydration. 7-14 days: inclusion body hepatitis, chicken anaemia virus, aspergillosis, IBD, poor vaccines, poor management/breeding conditions. Diarrhoea/wet floors: infectious bronchitis virus, *Salmonella*, *E.coli*, poor management.
SUDDEN MORTALITY (with/without clinical signs)	Postmortem birds either sick or recently dead. Collect swabs of heart blood into bacterial transport medium Femur for culture. Samples of affected tissue- e.g. liver, lung Swab of palatine cleft/trachea and choanal swab into viral transport medium	Avian influenza, Newcastle disease, IBD erysipelas, Fowl Cholera, Necrotic Enteritis, spotty liver disease, coccidiosis, heat stress, smothering, calcium tetany, sudden/acute death syndrome.
INCREASED MORTALITY (with chronic signs of septicaemia)	PCR/Serology for viral diseases	*Chlamydia psittaci*, Erysipelas, Fowl cholera, Spotty liver disease, *E.coli*, *Staphylococcus aureus*, *Salmonella* spp.
RESPIRATORY	Swab choanal cleft/trachea and any affected tissue for viral testing (in viral transport medium), bacterial culture (in bacterial transport medium) and plain swabs. Collect fresh affected tissue in a sterile container. Sample spleen if chlamydia suspected. Collect minimum of 10 blood samples from live birds for serology.	Avian influenza, Newcastle disease, Infectious Bronchitis, Infectious Laryngotracheitis, Avian metapneumonvirus, Infectious Coryza, Fowl Cholera, Aspergillosis, Mycoplasmosis, toxic (high ammonia).

Disease Investigation

SYNDROME	SAMPLES AND TESTING	DIFFERENTIAL DIAGNOSES
RELUCTANCE TO MOVE/LAMENESS	Postmortem affected birds- check footpads, any joint swelling, cartilage formation, lesions in abdomen, inspect sciatic nerve for mareks, incise vertebral column to check for abscesses. Swab any affected joints for culture, collect blood samples from live birds for serology. Collect feed samples if suspected as cause.	Mareks, *E.coli*, Fowl Cholera, *Mycoplasma*, *Staph aureus*, *Enterococcus*, toxic (botulism), nutritional, developmental (kinky back), Tibial dyschondroplasia, Ionophore toxicity.
NEUROLOGICAL	Postmortem dead or dying birds. Swab lesions and submit for PCR/Culture Collect swabs of heart blood for bacterial culture Collect blood samples from live birds for serology Feed samples if suspected If no obvious lesions, collect brain/nerve samples for histopathology	Mareks, Toxins (ionophores, botulism, ammonia), Nutritional, Avian encephalomyelitis virus, Vitamin E/B deficiency, Avian influenza, Newcastle disease, aspergillosis, Fowl cholera.
GASTROINTESTINAL	Postmortem of sick and recently dead birds. Gross lesions can be diagnostic (coccidiosis). Direct smear of intestines – microscopic exam Faecal material – faecal flotation test Feed sample- mycotoxin ELISA Tissue samples – histopathology	Necrotic enteritis, ulcerative enteritis, coccidiosis, parasites, nutritional problems, viral disease (Adenoviruses, enteroviruses, rotaviruses, coronavirus, astrovirus, reoviruses, parvovirus)

Laboratory Sample Collection

SAMPLE TYPE	COLLECTION TECHNIQUE	STORAGE AND TRANSPORT REQUIREMENT
Blood	Collect ~2mls whole blood into a serum tube. A swab of heart blood can be collected for culture, use a sterile swab to collect blood from inside the heart. Examine serum after centrifuging to ensure there is no gross lipaemia or haemolysis Note: some testing is compatible with collection of blood onto cards for transport.	Transport whole blood to lab as soon as possible. Or extract serum and send to lab chilled within 48 hours. Pour off serum after centrifuging into a sealed plain tube for transport to the lab. Keep serum chilled during transport or freeze if not possible to transport to lab within 48 hours.
Tissue Sample	Collect at post-mortem examination. Remove section of tissue to be tested and place into a sterile specimen container.	For histology examination the sample can be fixed in formalin for transport to the lab. Fresh samples should always be chilled and sent to the lab as soon as possible.
PCR Swab	Collect using a dry, sterile swab and transport either dry or in viral transport medium depending on the test required. Viral swabs should always be in viral transport medium, as desiccation can destroy pathogens	Transport chilled to the lab within 24 hours
Culture + Sensitivity Swab	Use sterile swab to collect sample from area of interest. Or, at post-mortem swab organs by searing the surface with a hot scalpel, cut surface and take swab from inside of organ. Swabs ideally should be placed in transport medium for culture.	Swabs in transport medium can be transported to the lab without refrigeration.
Whole bird	Bird should be recently dead or euthanised on site or transported to the lab to be euthanised there. Note, birds that have been dead for a prolonged period will not be suitable for culture and sensitivity testing or microscopic examination.	Transport dead birds to the lab in a plastic sealed bag, chilled or on ice. The birds should arrive at the lab as soon as possible.

Dosing Guidance

Note: Water containing antibiotic should be made up fresh at the start of the day and discarded after 24 hours.

Calculating the dose:

1. Work out how much water is consumed by the flock using the flock water calculation, in the immediate 24-hour period before treatment.
2. Work out total mg dose using approximate bird weight
3. Calculate total grams of product to be added
4. Add total dose to total water allowance for the day.

Example:
Dose of antibiotic = 20mg/kg, 1000 bird flock with approximate weight 2kg

20 x 1000 x 2 = 40,000 mg (Total dose)

FLOCK WATER CONSUMPTION = (1.8 x feed consumption)
Calculate on the 24-hour period immediately before antibiotic administration

Medication concentration: 500mg/g so 40,000/500 = 80g per day.

Water consumption example: 2kg bird will be eating 100-125 gms of feed and drinking 180 to 225 mls per 24 hrs = 180 litres per day.

So, 80g antibiotic powder to 180L water and administer over 24 hours

Antimicrobial Use Guidelines

For Poultry

KEY:
Green: Use these antibiotics as a 1st choice option
Orange: If a green option is not suitable then these are 2nd choice options
Red: Only use after culture and sensitivity testing, if no other option is available.
Black: Do not use under any circumstances

USE

Amoxicillin
Oxytetracycline
Doxycycline
Chlortetracycline
Bacitracin
Neomycin
Florfenicol

THINK

Trimethoprim/Sulphonamides
Lincomycin
Cephalexin
Amoxicillin-Clavulanic acid
Tylosin
Tiamulin
Tilmicosin
Erythromycin

STOP

Only use if culture and antibiotic sensitivity testing performed

Gentamicin
Not recommended for food producing animals, topical only

Fluoroquinolones- enrofloxacin, ciprofloxacin and norfloxacin
Follow strict withdrawal periods

BLACK (CRITICAL) - DO NOT USE FOR ANY REASON: Colistin, 3rd/4th generation Cephalosporins, Metronidazole

References:
Categorisation of antibiotics in the European Union (2019) European Medicines Agency
WOAH List of Antimicrobial Agents of Veterinary Importance (2021)

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