**; NT Restricted Antimicrobials Guideline; ;** Target Audience: NT Public hospital clinical staff.**;** Areas applicable: All NT Public hospital clinical areas except those listed below. **; Areas not applicable:** Intensive Care Unit / High Dependency Unit / Special Care Nursery / IFD OPD / Liver Clinic / Clinic 34 / CDC / TB Clinic.; ; Purpose; To improve patient outcomes and minimise development of antimicrobial resistance through appropriate use of antimicrobials in NT public hospitals. ; **; Definitions;** IFD – Infectious Diseases team; CMV – Cytomegalovirus ; HSV- Herpes Simplex Virus; MRSA – Methicillin Resistant Staphylococcus Aureus; PBS – Pharmaceutical Benefits Scheme; SAS – Special Access Scheme; Section 100 – Highly Specialised Drug scheme. Specialists only. ; ***;*** ; Guideline ;

; **Levels of Restriction:; A** = Approval required from IFD/microbiology registrar or consultant **within 48 hours** of initiation. ; **B** = **Prior approval** from IFD/micro registrar or consultant required. ; **C** = **Prior approval** from **IFD consultant** required.;

; **Approval Numbers (RDH & ASH Only):;** An approval number will be issued by IFD/Micro when approval is given. It is the responsibility of the prescribing doctor to ensure this approval number is recorded on the medication chart or prescription. Restricted antimicrobials will not be supplied by pharmacy without an approval number. ; For approvals after hours (including weekends), contact the on-call IFD consultant at RDH via switch. ; If a patient has been transferred from ICU/HDU to a general ward, the ICU protocol will no longer apply and a new approval number will be required within 24 hours of transfer. ; Continual use of any restricted antimicrobial beyond the approved treatment period will require a new IFD approval number. The IFD approval number consists of 10 characters:; ; Initial of IFD clinician Month Approved duration of treatment;   

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A** | **F** | **1** | **1** | **0** | **1** | **A** | **B** | **0** | **7** |

;  ; Date of approval Initial of patient; ; **Regional Hospitals ; KDH & GDH:** Prescribers at regional NT hospitals should contact the IFD registrar / consultant at Royal Darwin Hospital for advice regarding restricted antibiotics. Approval numbers are not currently used in Katherine or Gove, however the discussion with IFD must be documented in the patient progress notes.; **TCH: ; Monday-Friday business hours:** Prescribers should contact the IFD registrar/consultant at Alice Springs Hospital for advice regarding restricted antibiotics. An approval number will be issued when approval is given. ; **After hours and Weekends:** Approval numbers are not required for initiation of restricted antibiotics after hours. However approval will need to be sought from ASH IFD the next business day.; ; **Approved Protocols and Exceptions;** Where approved protocols or exceptions are listed in the table below, IFD approval is not required unless treatment duration exceeds 7 days (14 days for Timentin for diabetic foot infections), or unless specified in the protocol. **Indication for use must be recorded on the medication chart for pharmacy supply**. ; ; **Outpatient Use;** Antimicrobials for outpatients should be prescribed on a hospital PBS prescription in accordance with PBS criteria. Non-PBS restricted antimicrobials to be dispensed by the hospital pharmacy require an IFD approval number and prior approval from the divisional director for department funding. ; **; Therapeutic Drug Monitoring;** Clinical pharmacists (CP) can order specified pathology tests to allow them to provide advice to ensure the safe and effective use of medicines. This should be done in consultation with the treating team and documented in the medical notes.

| Drug | Level of restriction | Approved Protocols ; (Approval not required) | Comments |
| --- | --- | --- | --- |
| Aciclovir injection | A |  |  |
| Adefovir tablets | B |  | Section 100 –Liver clinic only; Exception: Continuation of previously prescribed regimen in hospital |
| Amikacin injection | C |  | Gram-negative infection resistant to gentamicin and tobramycin, MDR TB, atypical mycobacteria. Refer to [NTDTC: Gentamicin and Other Aminoglycosides Guideline for Adults and Children Twelve Years of Age and Older](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011913\5728807.pdf) for dosing and monitoring information. |
| Amphotericin Liposomal injection (Ambisome®) | B |  |  |
| Anidulafungin injection | C |  | Non-formulary - order on request. May take up to 72 hours for supply - contact pharmacy for advice. |
| Antiretrovirals | B |  | Section 100 – specialist only HIV infection; Exception: Continuation of previously prescribed regimen in hospital |
| Artemether with Lumefantrine tablets (Riamet®) | B |  |  |
| Artesunate injection | C |  | SAS. Complicated Pl. falciparum infection as per Malaria guidelines. |
| Azithromycin tablets and injection | B | [RDH ED: Pelvic Inflammatory Disease – Treatment](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\\1011877\\3372146.pdf" \t "_blank) ; [RDH ED: Treatment of Sexually Transmitted Diseases](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011877\2461694.pdf) ; [RDH Maternity: Pelvic Inflammatory Disease](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011906\1280876.pdf) | Exception: Single dose for treatment of chlamydial infections eg. urethritis, cervicitis, trachoma. |
| Aztreonam injection | C |  | Where aminoglycoside therapy is contraindicated or resistant gram negative infections. |
| Bacitracin | B |  | Alternative treatment for Clostridium difficile infection. Non-formulary - order on request. May take up to 72 hours for supply - contact pharmacy for advice. |
| Boceprevir | B |  | Section 100 - Liver clinic only; Exception: Continuation of previously prescribed regimen in hospital |
| Caspofungin injection | C |  |  |
| Cefepime | B |  |  |
| Cefotaxime | A |  | Exception: Paediatrics |
| Ceftazidime injection | A | [RDH IFD: Management of Febrile Neutropenia](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011902\1939251.pdf) ; [RDH IFD: Melioidosis Guidelines for Use in the Northern Territory](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011902\1641942.pdf) ; [RDH ED: Peritoneal Dialysis Patients](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011877\2462158.pdf) ; [NT Renal Services: Peritoneal Dialysis: Step-By-Step Guide To The Initial Treatment Of Peritonitis (Urban)](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1154254\2252510.pdf); [NT Renal Services: Peritoneal Dialysis - The Treatment Of Adult Peritonitis](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1154254\2252482.pdf) |  |
| Ceftriaxone injection | A | [RDH IFD: The 2012 Revised Antibiotic Guideline for ADULT Community-Acquired Pneumonia in the Top End of the Northern Territory](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011902\4023520.pdf); [RDH ED: Pelvic Inflammatory Disease – Treatment](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011877\3372146.pdf) ; [RDH ED: Treatment of Sexually Transmitted Diseases](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011877\2461694.pdf) ; [RDH Maternity: Pelvic Inflammatory Disease](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011906\1280876.pdf) | Exception: Doses ≤ 2g / day. |
| Cidofovir | C |  | Section 100 – Specialist Only. ; Non-formulary - order on request. May take up to 72 hours for supply - contact pharmacy for advice. |
| Ciprofloxacin injection & tablets | B | [RDH IFD: Management of Febrile Neutropenia](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011902\1939251.pdf); Radiation Oncology Unit – Insertion of fiducial markers into the prostate (prophylaxis) | Where oral therapy is indicated for infection caused by a gram-negative organism resistant to ampicillin, amoxycillin-clavulanic acid, cephazolin, cotrimoxazole and nitrofurantoin. Where oral therapy is indicated for management of gram-negative septic arthritis, joint/bone infection, penetrating eye injury, prostatitis, typhoid fever (known to be sensitive).; Exception: Meningococcal prophylaxis. |
| Clarithromycin tablets | A |  | Section 100 – Mycobacterium Avium infections.; Exception: Helicobacter pylori eradication. |
| Clindamycin capsules | A |  | Consider when metronidazole is ineffective or contraindicated, or for gram-positive cocci infection that cannot be safely or effectively treated with a penicillin or cephalosporin.; Note: Lincomycin injection has replaced Clindamycin injection on the NT formulary. |
| Clofazamine tablets | B |  | Leprosy SAS |
| Colistin Nebulised Solution | B |  | For inhalation only in Pseudomonas Aeruginosa respiratory infections |
| Colistin Injection | C |  | Treatment of multi-drug resistant Gram-negative bacterial infections |
| Dapsone tablets | B |  | Leprosy pack is SAS. |
| Daptomycin injection | C |  | Non-formulary - order on request. May take up to 72 hours for supply - contact pharmacy for advice. |
| Doxycycline injection | B |  | SAS Category A. |
| Entecavir tablets | B |  | Section 100 – Liver clinic only; Exception: Continuation of previously prescribed regimen in hospital |
| Ertapenem injection | C |  |  |
| Ethambutol tablets | B |  |  |
| Famciclovir tablets | B | [RDH ED: Treatment of Sexually Transmitted Diseases](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011877\2461694.pdf) |  |
| Fluconazole injection & capsules | A | [RDH Medicine: Antifungal Prophylaxis In Haematology Patients](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011909\3813235.pdf) | Exception: Haematology/Oncology for treatment and secondary prophylaxis of oropharyngeal candidiasis. |
| Flucytosine injection and capsules | B |  | Ordered on request. Capsules SAS. |
| Fosfomycin Granules for Solution | B |  | Treatment of multi-drug resistant Urinary Tract Infections |
| Fusidic acid (sodium fusidate) tablets | B |  | For treatment of proven staphylococcal infection (MRSA) in combination with another appropriate antibiotic. |
| Ganciclovir | C |  | Section 100 – Specialist Only. Reconstituted interstate - ordered on request. May take up to 72 hours for supply. Contact pharmacy for advice. |
| Gentamicin | A |  | Refer to [NTDTC: Gentamicin & Other Aminoglycosides Guideline for Adults & Children Twelve Years of Age and Older](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011913\1945991.pdf) for dosing and monitoring guidelines. |
| Interferon alpha injection | C |  | Section 100 – specialist only |
| Itraconazole capsules & oral solution | B |  |  |
| Ivermectin tablets | B |  | All use of ivermectin requires IFD approval. Refer to the following guidelines for information: ; [RDH IFD: Medical - Ivermectin (Crusted Scabies) Protocol](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011902\1679144.pdf) ; [RDH IFD: Medical - Prevention of Opportunistic Infections in Immunosuppressed Patients in the Top End](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011902\1719752.pdf) |
| Lamivudine tablets | B |  | Section 100 – IFD or liver clinic only; Exception: Continuation of previously prescribed regimen in hospital |
| Linezolid injection, tablets & suspension | C |  | Tablets & suspension ordered on request. May take up to 72 hours for supply - contact pharmacy for advice. |
| Lincomycin injection | B | [RDH Maternity: Preterm Prelabour Rupture of Membranes.](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011906\3676367.pdf); [GDH Maternity: PROM and GBS management.](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011906\1831202.pdf) | Lincomycin injection has replaced Clindamycin injection on the NT formulary. Refer to [NT Pharmacy: Lincomycin Dosing and Administration](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011913\2256060.pdf) for dosing advice. |
| Lopinavir & Ritonavir (Kaletra®) | B | [RDH Infection Control: Occupational Exposure Management](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011901\3069681.pdf) |  |
| Meropenem injection | B | [RDH IFD: Management of Febrile Neutropenia](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011902\1939251.pdf) ; [RDH IFD: Initial Management of Severe Sepsis In Adults](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011902\2461735.pdf) |  |
| Moxifloxacin tablets | B |  |  |
| Mupirocin ointment (nasal & topical) | B | [NT Renal Services: Peritoneal Dialysis - Treatment of exit site infection](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1154254\1279516.pdf); [NT Renal Services: Peritoneal Dialysis - Exit site care](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1154254\1279269.pdf); [RDH Orthopaedics / Medicine / Operating Theatre :Post Operative Infection Reduction Strategy for Patients Undergoing Elective Insertion of Prosthetic Joint Replacement](http://system.prompt.org.au/download/document.aspx?id=6328039&code=1AF51FDF7106F3DEC5A992F62935917C) | Exception: Decolonisation prior to cardiac surgery.; |
| Norfloxacin tablets | A |  | Consider for treatment of complicated UTI with proven resistant organism. |
| Oseltamivir (and Zanamivir) | A | [RDH: Guideline for Influenza Management during Influenza Season](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011902\1831620.pdf) | Zanamivir non-formulary. |
| Paromomycin | B |  | SAS |
| Peginterferon alfa-2a | B |  | Section 100 –Liver clinic only; Exception: Continuation of previously prescribed regimen in hospital |
| Peginterferon alfa-2b | B |  | Section 100 –Liver clinic only; Exception: Continuation of previously prescribed regimen in hospital |
| Pentamidine injection | B |  | Treatment or prophylaxis of Pneumocystis carinii infection. Ordered on request. |
| Piperacillin & Tazobactam (Tazocin®) | A | [RDH IFD: Management of Febrile Neutropenia](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011902\1939251.pdf) ; [RDH IFD: Initial Management of Severe Sepsis In Adults](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011902\2461735.pdf) | Exception: Diabetic foot infections for up to 14 days |
| Posaconazole suspension | C | [RDH Medicine: Antifungal Prophylaxis In Haematology Patients](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011909\3813235.pdf) |  |
| Praziquantel | B |  |  |
| Primaquine tablets | B |  |  |
| Pristinamycin capsules | B |  | SAS |
| Ribavirin tablets | B |  | Section 100 –Liver clinic only; Exception: Continuation of previously prescribed regimen in hospital |
| Rifabutin capsules | B |  | For use in combination with other antimicrobials for treatment of infection by susceptible organism.; Section 100 – specialist only. |
| Rifampicin capsules, syrup or injection | B |  | Must be used in combination with other antimicrobials for treatment of infection by Tuberculosis, MRSA, Staphylococcus Aureus associated with prosthetic material.. |
| Streptomycin injection | B |  | SAS Category A. |
| Telaprevir tablets | B |  | Section 100 - Liver clinic only; Exception: Continuation of previously prescribed regimen in hospital |
| Teicoplanin injection | B |  | For patients intolerant to vancomycin. |
| Tenofovir tablets | B |  | Section 100 – IFD or liver clinic only; Exception: Continuation of previously prescribed regimen in hospital |
| Tenofovir & Emtricitabine (Truvada®) | B | [RDH Infection Control: Occupational Exposure Management](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011901\3069681.pdf) |  |
| Terbinafine tablets | B |  | For infection unresponsive to conventional therapy. Fungal elements confirmed by microscopy ± culture. |
| Tigecycline injection | C |  | Non-formulary - order on request. May take up to 72 hours for supply - contact pharmacy for advice. |
| Tobramycin injection and inhaled | B |  | Restricted to infections due to gentamicin resistant gram negative bacilli and chest infection in cystic fibrosis. |
| Valaciclovir tablets | B | [RDH ED: Treatment of Sexually Transmitted Diseases](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011877\2461694.pdf) | Exception: Eye clinic for herpetic eye infections; Exception: Prophylaxis with highly immunosuppressive chemotherapy. |
| Valganciclovir tablets | B |  | Section 100 – Specialist only; Exception: Prevention of CMV disease post transplant. |
| Vancomycin, injection | A | [RDH IFD: Management of Febrile Neutropenia](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011902\1939251.pdf) ; [RDH IFD: Initial Management of Severe Sepsis In Adults](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011902\2461735.pdf); [RDH IFD: Management Of Staphylococcus Aureus Bacteraemia In Haemodialysis Patients](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011902\4738232.pdf); [RDH IFD: Management Of Staphylococcus aureus Bacteraemia](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011902\4116782.pdf) | Stat doses of vancomycin are using during peritoneal dialysis catheter insertion (refer to renal unit protocols). ; ; Refer to [NTDTC: Vancomycin Guideline for Adults and Children](http://healthguidelines.nt.gov.au/Search/download.aspx?filename=1011869\1011913\5209642.pdf) for dosing and monitoring guidelines. |
| Vancomycin, oral | B |  | Alternative treatment of Clostridium difficile infection. Non-formulary - order on request. May take up to 72 hours for supply - contact pharmacy for advice. |
| Voriconazole injection, tablets and suspension. | C |  | Suspension ordered on request - may take several days for supply. Contact pharmacy for advice. |

**;** *This policy is endorsed by the Northern Territory Drugs and Therapeutics Committee, RDH Infectious Diseases and RDH Microbiology teams. ; Approval number system adopted from Bayside Health Anti-infective drug policy. ; ;* Key Aligned Documents ; Incorporated in table.**;** ; Key Legislation, Acts & Standards ; ; References ; Bayside Health Anti-infective drug policy 12th edition 2008.**;** ; Evaluation; Ongoing monitoring by clinical pharmacy staff and IFD/microbiology teams. Incidents related to non-compliance with the guideline will be reported using riskman. ; NTDTC will review and update this document at regular intervals (at least every 2 years). ; **; Author / Contributors** ;

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| --- | --- | --- |
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; Alternative Search Words; Antibiotic, aminoglycosides, cephalosporins, fluoroquinolones, glycopeptide, carbapenem.;