8D's

Right Do's and Don'ts of ISP, Right Diagnosis of DSP, Right Drug, Dose, Delivery, Decision on follow-up, and Duration of ASP

(Version 1.0, A better integrated antimicrobial stewardship (IAS) practice)

ALL INDIA INSTITUTE OF MEDICAL SCIENCES (AIIMS) RISHIKESH, UTTARAKHAND, INDIA

Integrated Antimicrobial Stewardship (IAS) Practice Addendums

Infection Prevention & Control: Right Do's and Don'ts

STANDARD PRECAUTIONS: Standard precautions are set of Infection control practices used by healthcare workers to prevent or reduce the likelihood of transmission of infectious agents from one person or place to another, and to render and maintain objects and areas as free as possible from infectious agents.

These are to be followed **by all, for all and all the time including patients and caretakers** when working at a healthcare facility.

Standard Precautions include:

1. Hand hygiene
2. Respiratory hygiene and cough etiquette
3. Personal Protective Equipment
4. Routine Environmental cleaning
5. Appropriate handling of linen
6. Safe use and disposal of sharps
7. Biomedical waste management

ADDITIONAL SPECIFIC PRECAUTIONS: Any infection prevention and control strategy should be based on the use of standard precautions as a minimum level of control. Transmission-based precautions are recommended as additional work practices in situations where standard precautions alone may be insufficient to prevent transmission

Types of transmission-Based Precautions:

i. **Contact precautions** are used when there is known or suspected risk of direct or indirect contact transmission of infectious agents that are not effectively contained by standard precautions alone
ii. **Droplet precautions** are used for patients known or suspected to be infected with agents transmitted over short distances by large respiratory droplets
iii. **Airborne precautions** are used for patients known or suspected to be infected with agents transmitted person-to-person by the airborne route

Contact precautions (Gloves + Gown)	Droplet precautions (Gloves+ Gown+ Surgical mask)	Airborne precautions (Gloves+ Gown+ N95 mask+ Face/Eye cover)
Drug resistant pathogens eg. PEAK MDR, MRSA, VRE	Influenza (e.g. H1N1)	Pulmonary TB
Diarrhea (Rota virus, *Clostridium difficile*, etc.)	Whooping cough (Pertussis)	COVID-19
Hepatitis A	Mumps, Rubella	Avian Influenza
Scabies	SARS (e.g. COVID)	Disseminated Herpes zoster
Herpes, Chicken pox	Bacterial meningitis	Measles

Reference: AIIMS Rishikesh HIC policy and CDC Infection prevention guidance. Accessed 22 Nov 2021.
Prepared by: Dr Vanya Singh, SR, Microbiology; All ICNs
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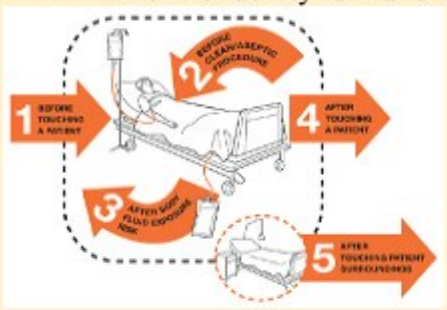
HAND HYGIENE	DO's	DON'Ts
Hand washing (40–60 sec): • Visible Soiled • Handling patients with Contact Precautions • After using washroom • Before handling medication/ food Hand rubbing (20–30 sec): • Routine rounds and handling of patients • Hands not visible dirty • When no facility for hand wash available 	1. Before and after any direct patient contact and between patients, whether gloves are worn. Immediately after gloves are removed 2. Before handling an invasive device 3. After touching blood, body fluids, secretions, excretions, non-intact skin, and contaminated items, even if gloves are worn. 4. During patient care, when moving from a contaminated to a clean body site of the patient 5. After contact with inanimate objects in the immediate vicinity of the patient	✓ DON'T skip handwashing if soap and running water are not available ✓ DON'T allow water to run over hands while lathering. This washes soap away ✓ DON'T touch the sink surface after washing your hands

COUGH ETIQUETTE	DO's
	1. Cover your mouth and nose with a tissue when coughing or sneezing 2. Use in the nearest waste receptacle to dispose of the tissue after use 3. Perform hand hygiene after having contact with respiratory secretions and contaminated objects/materials 4. Wear mask appropriately

PPE	DO's	DON'Ts
1) Cap 2) Gloves: when hand contamination is anticipated 3) Gown/apron/Bodysuit: when soiling of clothes may occur 4) Mask and respirators: when splashes may occur 5) Goggles: when splashes may occur 6) Face shields: when splashes may occur 7) Shoe covers	1. Wear when touching blood, body fluids, secretions, excretions, mucous membranes, nonintact skin. 2. Change between tasks and procedures on the same patient after contact with potentially infectious material. 3. Remove after use, before touching non-contaminated items and surfaces, and before going to another patient. 4. Perform hand hygiene immediately after removal **STERILE GLOVES:** Any sterile procedure like Any surgical procedure; Vaginal delivery; invasive radiological procedures; performing vascular access and procedures (central lines); Preparing total parental nutrition & chemotherapeutic agents	✓ When taking BP, temperature & pulse ✓ Giving SC and IM injections ✓ Bathing and dressing the patient ✓ Transporting patient ✓ Caring for eyes and ears (without secretions) ✓ Any vascular line manipulation in absence of blood leakage ✓ Using the telephone ✓ Writing in the patient chart ✓ Giving oral medications ✓ Removing and replacing linen for patient bed

Reference: AIIMS Rishikesh HIC policy and CDC Infection prevention guidance. Accessed 22 Nov 2021.

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Infection Prevention & Control: Right Do's and Don'ts

FACIAL PROTECTION	DO's	DON'Ts
	1. Wear cloth/ surgical mask in public places/ gatherings/meetings 2. Wear a surgical or procedure mask and eye protection (face shield, goggles) to protect mucous membranes of the eyes, nose, and mouth during activities that are likely to generate splashes or sprays of blood, body fluids, secretions, and excretions. 3. Droplet Precautions: Surgical mask 4. Airborne Precautions: N95 or higher-level respirator is worn before entering room of patient and removed after exiting room + Negative Pressure Isolation Room 5. Perform Fit test to ensure a Seal across the face, cheeks, and bridge of the nose	✓ Masks should not be left dangling around the neck ✓ Don't touch the front of the mask while wearing

BIOMEDICAL WASTE SEGREGGATION	DO's	DON'Ts
	1. Discard Biomedical waste in the designated BMW bin 2. Discard single use items properly. 3. Assure availability of Foot operated Bin 4. Keep labelled BMW poster 5. Hand over the waste after full 2/3 part of bins 6. Put the Barcode label at the point of generation. 7. Document weight of waste, Area code, timing etc.	✓ Don't mix BMW with General waste ✓ Don't over fill the waste bin ✓ Don't discard sharp items in the other waste bin ✓ Don't put BMW at patient bedside & dressing trolley ✓ Don't discard liquid waste in the BMW

Prevention of needle stick injury (NSI)	DO's	DON'Ts
Safe Injection Practices: Clean workspace, Hand Hygiene, Appropriate collection of sharps, Appropriate waste management, Single use of disposable items	1. **Ensure one needle, one syringe, one patient** 2. Remove gloves, if appropriate 3. Wash injury site thoroughly with running water for 3-5 min 4. Irrigate with water or saline if eyes or mouth have been exposed	✓ DO NOT RECAP, bend, break, or hand-manipulate used needles ✓ If recapping required, use one hand scoop technique ✓ Do not panic ✓ Do not put the pricked finger in mouth ✓ Do not squeeze the wound to bleed it ✓ Do not use bleach, chlorine, alcohol, betadine, iodine, or other antiseptics/ detergents on the wound

ENVIRONMENTAL CLEANING	DO's	DON'Ts
METALLIC SURFACES: To be cleaned using alcohol-based hand-rub **NON-METALLIC SURFACES**: Depending on type of item, may use 0.1%- 0.5% Sodium hypochlorite **TERMINAL CLEANING** & Blood & Body fluid Spill: Use 1% Sodium hypochlorite	1. Always perform cleaning before disinfection/sterilization 2. Fresh detergent/ disinfectant solutions must be prepared every day according to manufacturers' instructions. These solutions must be replaced with fresh solutions frequently 3. Staff performing environmental cleaning and disinfection should wear recommended PPE 4. Face protection (face shield or facemask with goggles) should be worn when performing tasks such as liquid waste disposal that can generate splashes. 5. Cleaning of High touch surfaces to be done after every shift or whenever visibly dirty	✓ Don't use hypochlorite solutions on metallic surfaces ✓ Don't send reuse item (eg surgical equipment) to CSSD without proper washing

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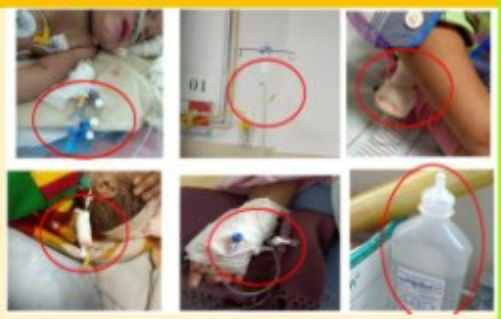
Infection Prevention & Control: Right Do's and Don'ts

CLABSI CARE

DO's

DON'Ts



CAUTI CARE

DO's

DON'Ts

VAE CARE

DO's

DON'Ts

Reference: AIIMS Rishikesh HIC policy and CDC Infection prevention guidance. Accessed 22 Nov 2021.
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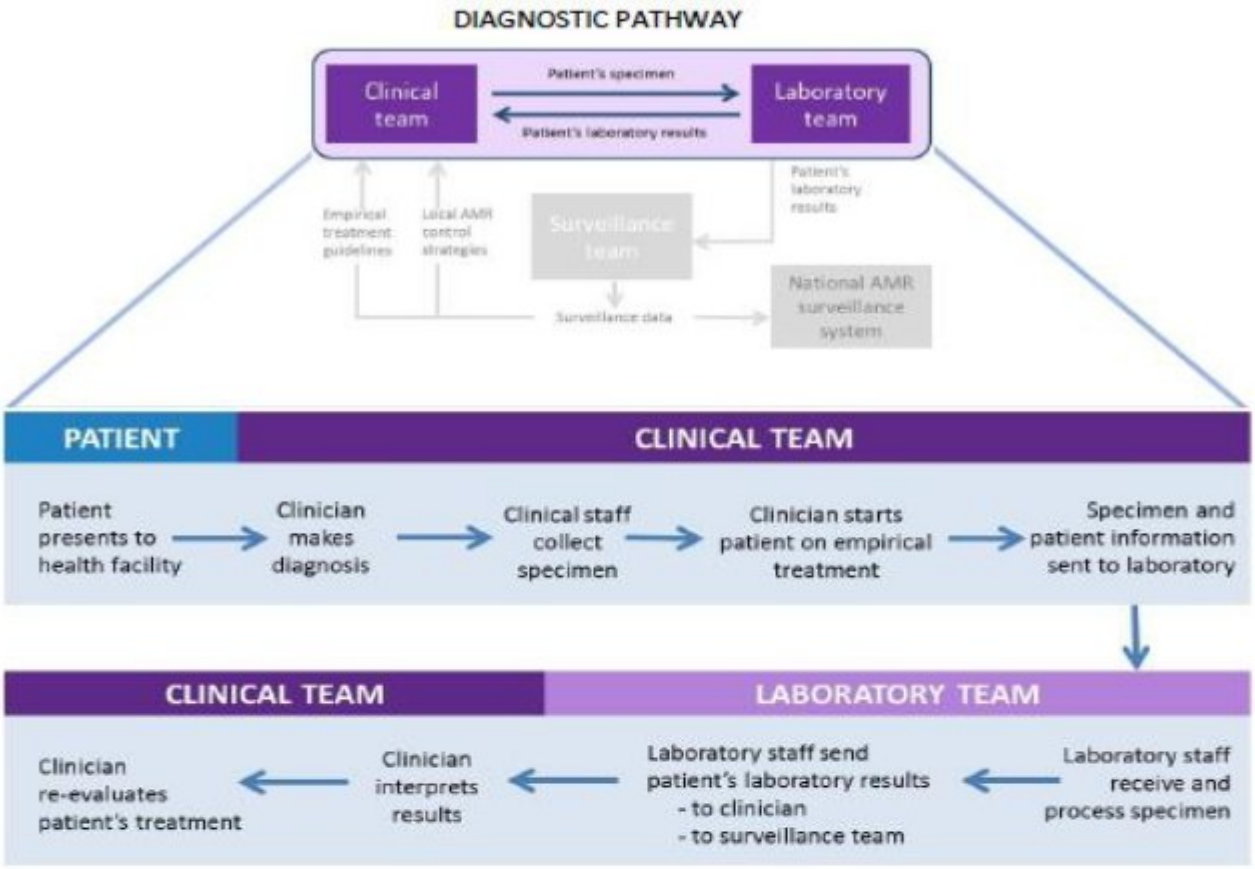

When should a specimen be collected for bacterial culture?	✓ Case definition fulfilled ✓ Prior to antimicrobial therapy whenever possible
What kind of specimen should be selected for bacterial culture?	✓ Appropriate specimen from suspected site of infection according to case definition
How should a specimen be collected for bacterial culture?	✓ By trained staff ✓ With strict adherence to precautions ✓ Using appropriate technique ✓ Using correct material and container ✓ Ensuring adequate amount of specimen ✓ Using appropriate transport medium ✓ Ensuring correct labelling
How should a specimen be transported to laboratory?	✓ In the correct package for safe transport ✓ Within 2 hours after collection, at room temperature (around 20 to 25°C) ✓ In correct storage at the health-care facility if necessary ✓ Accompanied by a request form with complete clinical, demographic and epidemiological information

Reference: Miller, JM. (1981). Handbook of Specimen Collection and Handling in Microbiology. Centers For Disease Control Atlanta, Georgia 30333; Global Antimicrobial Resistance Surveillance System: Manual for Early Implementation, Geneva: World Health Organization (2015). Accessed on 22 Nov 2021.
Prepared by: Dr. Ashish Baweja (SR Medicine) and Dr Arjun (JR Medicine)
Reviewed by: Dr. Biswajeet Sahoo (Asst. Prof. Microbiology) and Dr PK Panda (Asso Prof, Medicine)

Specimen	Collection Equipment	Transport	Instructions (comments)	DON'Ts
Anaerobe-special request	Gassed-out tubes Needle and syringe Anaerobic swab transport device	No refrigeration needed Use anaerobic transport method	1. Avoid all oxygen exposure 2. Expel air from syringe Anaerobic swab method 3. Label properly transport device 4. Hold a needed supply of media in anaerobic atmosphere for better initial growth. Not critical	1.No refrigeration 2.Avoid all oxygen exposure
Blood	Commercial kit Needle and syringe	Culture broth in bottles or automated culture bottles	❖ Decontaminate puncture site with alcohol (30 seconds) or iodine/chlorhexidine (2 minutes) ❖ Decontaminate bottle stopper with iodine-alcohol	✓ Do not palpate disinfected site ✓ Do not refrigerate ✓ Do not palpate disinfected site ✓ 3. Do not use the disinfectant for lesser time than instructed
CSF	Surgical prep and collection by physician Sterile screw-cap or snap-cap tubes	Transport in collection tube	1. Surgical prep of puncture site 2. Obtain as much as possible: 4-5 ml is optimal for adults; 0.5-1.0 ml in children 3. Handle as EMERGENCY specimen; hand carry to laboratory 4. One tube only, send to bacteriology; first, second and/or third, routinely to bacteriology	✓ Do not refrigerate
Ear	Aspirate from Tympanocentesis (otitis media). Swab of drainage	Transport medium	1. Clean external ear surface 2. Carefully take representative area 3. Label properly	✓ Do not collect from unclean ear
Eye	Swab (small) for each eye Corneal scraping (by physician)	Transport medium	1. Do not touch external skin 2. Obtain maximum material. Culture both eyes 3. Label properly 4. Prepare smears for Giemsa and/or Gram staining	✓ Do not touch external skin

Reference: Miller, JM. (1981). Handbook of Specimen Collection and Handling in Microbiology. Centers For Disease Control Atlanta, Georgia 30333; Global Antimicrobial Resistance Surveillance System: Manual for Early Implementation, Geneva: World Health Organization (2015). Accessed on 22 Nov 2021.
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Specimen	Collection Equipment	Transport	Instructions (comments)	DON'Ts
Feces	Clean or sterile collection cup Swab (only if necessary)	Refrigerate if not plated within 1 h Swab into transport medium Cary-Blair recommended for Campylobacter sp.	1. Best specimen is diarrheal stool 2. Swab is satisfactory in acute cases but not for routine specimens or surveys 3. Insert swab beyond anal sphincter. 4. Swab must show feces	Swab is satisfactory in acute cases but not for routine specimens or surveys
Genital	Swab	Do not refrigerate Immediate CO2 for GC Incubate at 35°C overnight before mailing	1. Collect cervicalS with a swab inserted through a speculum 2. Avoid touching swab to uninfected mucosal surfaces 3. Clean external urethra before taking urethral specimen 4. For GC, inoculate a modified ThayerMartin plate at bedside, if possible 5. Prepare slide for staining using a second swab 6. Label properly	✓ Do not refrigerate ✓ Avoid touching swab to uninfected mucosal surfaces
Nasopharynx	Cotton-tipped nichrome or stainless wire-28 ga	Do not refrigerate Transport medium	1. Nasal speculum helpful 2. Pass through nose into nasopharynx 3. Allow to remain for a few seconds 4. Carefully withdraw 5. Label properly	Do not refrigerate
Nose	Swab	Transport media	1. Swab anterior nares only 2. Culture quickly	Do not delay to put in up for culture
Sinus (tract)	Curet or surgical specimen Aspirate	Transport medium	1. Insert and remove carefully 2. Prepare slide for stain using second swab or after inoculating media	

Reference: Miller, JM. (1981). Handbook of Specimen Collection and Handling in Microbiology. Centers For Disease Control Atlanta, Georgia 30333; Global Antimicrobial Resistance Surveillance System: Manual for Early Implementation, Geneva: World Health Organization (2015). Accessed on 22 Nov 2021.
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Specimen	Collection Equipment	Transport	Instructions (comments)	DON'Ts
Sputum	Sterile cup	Refrigerate if needed Transport in collection container	1. Carefully instruct patient to cough deeply (not to spit) 2. First morning specimen is best (no 24-h collection) 3. Transport immediately; seal container tightly 4. Consider sputum potentially contaminated with M. tuberculosis	Donot use unsterilized container
Throat	Swab (tongue blade is necessary)	Transport medium if more than 2 h delay to laboratory	1. USE TONGUE BLADE 2. Sample ONLY back of throat between & around the tonsillar area thoroughly 3. Avoid cheeks, teeth, etc. 4. Use silica gel packets to hold specimen more than 24 h	Avoid cheeks, teeth, etc.
Urine (midstream)	Sterile screw-cap cup	Transport in collection container Refrigerate quickly	1. Give patient clear and detailed instructions 2. Clean with soap, not disinfectant 3. A 1-h delay before culturing is too long 4. Refrigerate no longer than 24 h prior to culture 5. Seal container tightly	✓ Avoid delay in culture ✓ Clean with soap, not disinfectant
Urine (catheter)	Sterile screw-cap tube Needle and syringe	Sterile tube	1. Collect from catheter line 2. Do not culture Foley tips 3. Decontaminate line as with venipuncture or use port	Do not culture Foley tips
Wounds (surface)	Swab	Transport medium	1. Decontaminate surrounding skin 2. Open lesion and express pus onto swab; sample advancing margin of lesion 3. Label properly	Do not take swab from unopened lesion and avoid contamination from surrounding.
Wound (deep)	Syringe Anaerobic swab kit	Anaerobic transport Transport aspirate in the collecting syringe or Place aspirate into anaerobic transport container or vial or Collect pus onto swab and place directly into anaerobic transport (not recommended)	1. Maintain anaerobic conditions 2. Label properly	Maintain the anaerobic conditions

Reference: Miller, JM. (1981). Handbook of Specimen Collection and Handling in Microbiology. Centers For Disease Control Atlanta, Georgia 30333; Global Antimicrobial Resistance Surveillance System: Manual for Early Implementation, Geneva: World Health Organization (2015). Accessed on 22 Nov 2021.
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ANTIMICROBIALS: TIME AND CONCENTRATION DEPENDENT KILLING

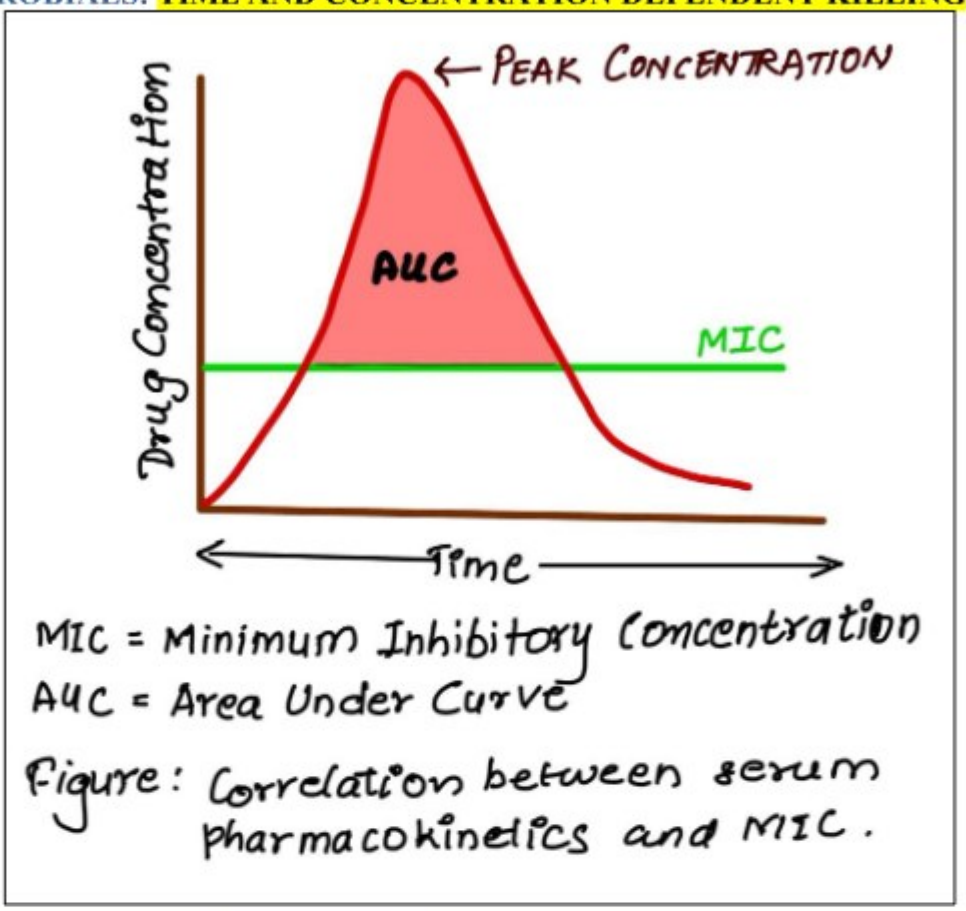

Figure: Correlation between serum pharmacokinetics and MIC.

TIME DEPENDENT KILLING	CONCENTRATION DEPENDENT KILLING
Therapeutic effect: During time for which drug concentration remain above MIC	Therapeutic effect: Drug concentration should reach maximum (peak) concentration
t>MIC	Peak/MIC ratio
Minimal or no Post-antibiotic effect	Post-antibiotic effect present
Goal of therapy: Optimize duration of exposure of antimicrobial to microorganism	24hour AUC/MIC ratio correlate to clinical and bacteriologic efficacy
Administered as continuous IV infusion	Administered as single dose usually
Examples	Examples
1. Beta-lactams like amoxicillin 2. Vancomycin 3. Clindamycin 4. Macrolides like Clarithromycin 5. Linezolid	1. Aminoglycosides like Amikacin 2. Fluoroquinolones like Ciprofloxacin 3. Metronidazole 4. Azithromycin 5. Daptomycin

Reference: Jacobs MR. Optimisation of antimicrobial therapy using pharmacokinetic and pharmacodynamic parameters. Clinical Microbiology and Infection. 2001 Nov 1;7(11):589–96. Accessed 16 Nov 2021..
Prepared by: Dr Khushboo Bisht, SR, Clinical Pharmacology; Dr Kanimozhi, JR,Pharmacology
Reviewed by: Prof. SS Handu (HOD Pharmacology) and Dr PK Panda (Asso Prof, Medicine)

ANTIMICROBIALS: INTRAVENOUS TO ORAL SWITCH

WHY TO SWITCH ?

- Low risk of IV infusion-site infections (Thrombophlebitis)
- Lower cost of therapy
- Decrease in overall cost of treatment
- Patient friendly approach (Early mobility, early discharge)

WHEN IS SWITCH INAPPROPRIATE*?

1. Deep seated-infection (abscess-not amenable on drainage)
2. Infected implant or prosthesis
3. Staphylococcus aureus bacteremia
4. Meningitis
5. Osteomyelitis
6. Encephalitis
7. Vascular graft
8. Septic arthritis
9. Malabsorption
10. Necrotizing soft tissue infection
11. Endocarditis
12. Cystic fibrosis
13. Central venous device infection
14. Necrotizing enterocolitis

***Seek infectious disease/clinical pharmacologist/microbiologist advice for antibiotic or oral switch plan for above indications.**

Reference:SA Health.IV to Oral Switch Clinical Guideline for adult patients: Can antibiotics S.T.O.P. Government of South Australia, 23 October 2017, Public-I1-A2; CG202, (1.1);1-7. Accessed on 16 Nov 2021. https://www.sahealth.sa.gov.au/wps/wcm/connect/86d0af8047ca4a108ca28dfc651ee2b2/Clinical_Guideline_IV+to+Oral_Switch_v1.1_06.06.2019.pdf.
Prepared by: Dr Khushboo Bisht, SR, Clinical Pharmacology; Dr Kanimozhi, JR, Pharmacology
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ANTIMICROBIALS: INTRAVENOUS TO ORAL SWITCH

WHEN TO SWITCH?

- ✓ Antimicrobial treatment indicated
- ✓ Patient has improved clinically
- ✓ Oral intake (food and fluids) well -tolerated
- ✓ Appropriate o ral antibiotic is available
- ✓ No indication for prolonged IV therapy or high tissue antibiotic concentration

Intravenous*	Oral suggestion*#
Benzylpenicillin 1.2g-1.8g 6-hourly **Amoxycillin 1-2g 8-hourly** **Ampicillin-sulbactam 1.5-3 g 6-hourly**	**Amoxycillin** 1g 8-hourly **Or** **Amoxycillin-clavulanate** 875/125mg 12-hourly
Benzyl penicillin 600mg-1.2g 6-hourly	**Amoxicillin** 500mg/1g/dose 8 hourly
Amoxycillin 500mg-1g 8-hourly	**Amoxicillin** 500mg 8 hourly
Amoxycillin-**clav**ulanate **1.2g**	**Amoxycillin-clavulanate** 875/125mg 12-Hourly
Oxacillin 1.5-2g 4-6-hourly	**Dicloxacillin** 500mg 6-hourly

Reference:SA Health.IV to Oral Switch Clinical Guideline for adult patients: Can antibiotics S.T.O.P. Government of South Australia, 23 October 2017, Public-11-A2; CG202, (1.1);1-7. Accessed on 16 Nov 2021. https://www.sahealth.sa.gov.au/wps/wcm/connect/86d0af8047ca4a108ca28dfc651ee2b2/Clinical_Guideline_IV+to+Oral_Switch_v1.1_06.06.2019.pdf.
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Flucloxacillin **1g-2g 6-hourly**	**Di/Flucloxacillin** 500mg-1g 6 hourly
Cefuroxime 750mg-1.5g 8-hourly	**Cefuroxime** 500mg 12-hourly
Ceftriaxone 1g – 2g daily	**Amoxycillin-clavulanate** **875/125mg 12-hourly **Or** **Cefuroxime** 500mg 12-hourly (if respiratory infection) **Or** **Cefixime** 200mg 12-hourly or 400mg 24-hourly **Or** **Erythromycin** (Base) 250 to 500mg 6 /12 hourly
Cefazolin 1g-2g 8 hourly	**Cefalexin** 500mg-1g 6 hourly
Ciprofloxacin 200-400mg 12-hourly	**Ciprofloxacin** 500mg-750mg 12-hourly
Piperacillin-tazobactam 4.5g 6 hourly OR 8 hourly	**Amoxycillin-clavulanate** 875/125mg 12-hourly [1] (Add **ciprofloxacin** 500-750mg 12-hourly or **levofloxacin** 500-750 mg daily if specific *Pseudomonas* cover needed)

Reference:SA Health.IV to Oral Switch Clinical Guideline for adult patients: Can antibiotics S.T.O.P. Government of South Australia, 23 October 2017, Public-11-A2; CG202, (1.1);1-7. Accessed on 16 Nov 2021. https://www.sahealth.sa.gov.au/wps/wcm/connect/86d0af8047ca4a108ca28dfc651ee2b2/Clinical_Guideline_IV+to+Oral_Switch_v1.1_06.06.2019.pdf.
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Amoxycillin **Plus** Gentamicin **with or without** Metronidazole	**Amoxycillin**
Imipenem 500mg-1g 6 to 8-hourly (Based on Imipenem) Meropenem 1-2g 8-hourly	**Amoxycillin-clavulanate** 875/125mg 12-hourly **Or** **Cefixime** 200mg 12-hourly or 400mg 24-hourly. (Add **Ciprofloxacin** 500-750mg 12-hourly or **Levofloxacin** 500-750 mg daily if specific *Pseudomonas* cover needed)
Vancomycin 25mg/kg 12-hourly Linezolid 600 mg 12-hourly Clindamycin 450mg 8-hourly	**Clindamycin** 150-450mg 8-hourly or **Linezolid** 600 mg 12-hourly or **Cotrimoxazole** 80 mg TMP/400 mg SMX if MRSA is susceptible
Metronidazole 500mg 12-hourly	**Metronidazole** 400mg 8 to 12-hourly
Azithromycin 500mg daily	**Azithromycin** 500mg daily or **Doxycycline** 100mg daily
Amphotericin B (AMB) **0.1-1.5 mg/kg per day Liposomal AMB 3-6 mg/kg/day Fluconazole 400-800 mg once daily**	**Fluconazole** 400-800 mg once daily

*Note: Before administration: Check for antibiotic allergies and normal renal and hepatic function

**Note: Check for patient allergy status when converting to penicillin

#Note: Evaluate the antibiotic susceptibility pattern before switching

Reference:SA Health.IV to Oral Switch Clinical Guideline for adult patients: Can antibiotics S.T.O.P. Government of South Australia, 23 October 2017, Public-11-A2; CG202, (1.1);1-7. Accessed on 16 Nov 2021. https://www.sahealth.sa.gov.au/wps/wcm/connect/86d0af8047ca4a108ca28dfc651ee2b2/Clinical_Guideline_IV+to+Oral_Switch_v1.1_06.06.2019.pdf.

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ANTIMICROBIALS: INTRAVENOUS TO ORAL SWITCH

	Indication (Empiric IV therapy)	Empirical Oral switch(1st line)	Empiric Oral switch (2nd line)	Total Duration IV + Oral
1.	Community Acquired Pneumonia (High severity-No Previous antibiotics)	Doxycycline100mg 12 hourly	Amoxicillin1gram 8-hourly PLUS Clarithromycin 500mg 12hourly	7-10 days
2.	Community Acquired Pneumonia (With Previousantibiotics)	Doxycycline100mg 12 hourly	Co- trimoxazole 960mg 12hourly	7-10 days
3.	Severe Hospital AcquiredPneumonia	Co- Amoxiclav 625mg 8hourly	Levofloxacin 500mg 12hourly	7 days
4.	Aspiration Pneumonia	Amoxicillin 1gram 8-hourly PLUS Metronidazole400mg 8-hourly	Clarithromycin500mg 12hourly PLUS Metronidazole 400mg 8hourly	7 days
5.	Severe Infective Exacerbation of COPD	Co- Trimoxazole 960mg 12hourly OR Doxycycline 100mg 12-hourly	Clarithromycin500mg 12hourly	7 days
6.	Pyelonephritis/Urosepsis	Co- trimoxazole 960mg 12hourly		7 days
7.	Intra- abdominal sepsis	Metronidazole400mg 8 hourly PLUS Doxycycline 100-200 mgdaily	Metronidazole400mg 8 hourly PLUS Co- trimoxazole 960mg 12hourly	3-5 days
8.	Biliary Sepsis	Doxycycline100-200mg daily +/- Metronidazole 400mg 8 hourly	Co- trimoxazole 960mg 12 hourly +/- Metronidazole 400 mg 8hourly	7 days
9.	Cellulitis (moderate to severe)	Flucloxacillin1gm 6 hourly	Doxycycline100mg 12 hourly	7 to 14 days

Reference: Adult Antibiotic Intravenous to Oral Switch Therapy (IVOST) Guidance, 2021. Accessed 16 Nov 2021. https://www.nhsgrampian.org/globalassets/foidocument/foi-public-documents1---all-documents/Guide_IVOST.pdf.
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Disease	Drug	Duration
1. Cholera	Azithromycin 1g PO stat Doxycycline 300 mg PO stat	1 day
2. Bacterial dysentery	Azithromycin 1g OD	3 days
3. Amoebic dysentery	Metronidazole 500-750 mg PO/IV 8 hourly or Tinidazole 2gm PO OD (Add diloxanide furoate 500 mg 8hourly)	7-10 days 3 days 7-10 days
4. Enteric fever	Cotrimoxazole 960mg Oral BD or Azithromycin 1gm start f/b 500mg Oral OD or Cefixime 20mg/kg/day	2 weeks 7 days 14 days
5. Liver Abscess	Cefoperazone-Sulbactam 3 g IV 12 hourly or Piperacillin-tazobactam 4.5 g IV 6 hourly with Metronidazole 500mg-750 mg IV/PO 8hourly	2 weeks 7-10 days
6. Cellulitis	Cefazolin 1-2 g IV 8 hourly Or Cephalexin 750 mg oral BD/ 500mg TID Or Amoxicillin-Clavulanate 1 gm oral BD/ 1.2 g IV TDS +/- Clindamycin 600-900 mg IV 8 hourly	7 days (longer if clinically indicated)
7. Acute pharyngitis	Amoxicillin 500 mg – 1000mg 8 hourly PO/IV or Azithromycin 500 mg OD (for penicillin allergic)	10 days 5 days
8. Acute bacterial rhinosinusitis	Co-amoxiclav 1g BD or 625 mg 8 hourly oral or 1.2 g IV 8 hourly	5-7 days
9. Acute uncomplicated Cystitis (collect urine before antibiotics)	Nitrofurantoin 100mg BD or Fosfomycin 3 g or Cotrimoxazole 960 mg BD	5 days Single dose 3 days
10. Vaginal Candidiasis	Tab Fluconazole 150 mg Oral or 500mg vaginal tablet Local Clotrimazole	Single dose
11. Bacterial vaginosis	Metronidazole 400 mg oral BD	7 days
12. Varicella Zoster	Acyclovir 800 mg five times a day or Valacyclovir 1g oral TID	10 days
13. Acute bacterial Meningitis	Ceftriaxone 2 g IV 12 hourly or Cefotaxime 2 g IV 4-6 hourly PLUS Vancomycin 1 g IV 8-12 hourly Ampicillin 2g IV 4 hourly (for listeria)	10-14 days (21 days for listeria)
14. Community acquired Pneumonia	Co-amoxiclav 1gm oral BD/ 625mg oral TID or 1.2 g IV TID Macrolides (Azithromycin 500 mg IV/Oral OD or Clarithromycin 500 mg oral BD)	5-8 days
15. Lung abscess	Piperacillin-Tazobactam 4.5 g IV 6 hourly or Cefoperazone Sulbactam 3 g IV 12 hourly plus Clindamycin 600-900 mg IV 8 hourly	3-4 weeks

Reference: Jacobs MR. Optimisation of antimicrobial therapy using pharmacokinetic and pharmacodynamic parameters. Clinical Microbiology and Infection. 2001 Nov 1;7(11):589–96. Accessed 16 Nov 2021.
Prepared by: Dr Khushboo Bisht, SR, Clinical Pharmacology; Dr Kanimozhi, JR,Pharmacology
Reviewed by: Prof. SS Handu (HOD Pharmacology) and Dr PK Panda (Asso Prof, Medicine)

ANTI-AEROBICS
1. Metronidazole and doripenem 2. Metronidazole and imipenem 3. Metronidazole and meropenem 4. Metronidazole and ertapenem 5. Metronidazole and amoxicillin-sulbactam 6. Metronidazole and piperacillin-tazobactam
ANTI-MRSA
1. Daptomycin and linezolid 2. Vancomycin and daptomycin 3. Vancomycin and linezolid
DUAL β-LACTAMS
1. Cefepime and doripenem 2. Cefepime and ertapenem 3. Cefepime and imipenem 4. Cefepime and meropenem 5. Cefepime and piperacillin-tazobactam 6. Ceftriaxone and doripenem 7. Ceftriaxone and ertapenem 8. Ceftriaxone and imipenem 9. Ceftriaxone and meropenem 10. Ceftriaxone and piperacillin-tazobactam 11. Piperacillin-tazobactam and doripenem 12. Piperacillin-tazobactam and ertapenem 13. Piperacillin-tazobactam and imipenem 14. Piperacillin-tazobactam and meropenem

World Antimicrobial Awareness Week (WAAW) 2021

Spread Awareness, Stop Resistance

World Health Organization

Reference: Schultz L, et al. Economic Impact of Redundant Antimicrobial Therapy in US Hospitals. Infection control and hospital epidemiology [Internet]. 2014 Oct;35(10):1229. Accessed 16 Nov 2021.
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All India Institute of Medical Sciences (AIIMS) Rishikesh

World Health Organization

"World Antimicrobial Awareness Week" Celebration

18 - 24 November 2021

Events (All days)
Integrated Antimicrobial Stewardship (IAS) Practice Addendums

Theme
Spread Awareness, Stop Resistance

Patron	Co-Patron
Prof. Arvind Rajvanshi, Director	Prof. Manoj Gupta, Dean (A) Prof. Ashwani K. Dalal, MS

Chairperson	Co-Chairperson
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Secretary	Joint secretary
Dr. Prasan K. Panda, Asso. Prof., Medicine	Mr. Maneesh Sharma, Asst. Prof., College of Nursing Mrs Rakhi Mishra, Asst. Prof., College of Nursing

Organizing team members	Experts
Dept of Medicine, Nursing College, Microbiology, Pharmacology, and CFM, Dr Avneet, Dr Ashish, Dr Jithesh, Dr Khusboo, Dr Anant, Dr Arjun, Dr Pathik, Dr Subhash, Dr Manjunath, Dr Kanimozhi, Dr Nishant, Dr Guruvinder, Mr Jyothis, Mr Kamlesh, Ms Ritika, Ms Sonia, Ms Kirti, Mr Vishwas, Mr Pradeep, Mr Giriraj, Mr Umesh, Mr Prakash, MS Deepa	Prof UB Mishra, Prof Neelam Kaistha, Prof Shailendra Handu, Dr Balram Ji Omer, Dr VS Pai, Dr Santosh Kumar, Dr Mukesh Bairwa, Dr Puneet Damija, Dr Gaurav Chikara, Dr Amber Prasad, Dr Biswajeet Sahoo, Dr Vanya, and all ICNs

Venue: Virtual, AIIMS Rishikesh, and Community area

Organizer: Dept of Medicine and Nursing College (+ other Dept)

8D's

Right Do's and Don'ts of ISP, Right Diagnosis of DSP, Right Drug, Dose, Delivery, Decision on follow-up, and Duration of ASP

(Version 1.0, A better integrated antimicrobial stewardship (IAS) practice)

PK Panda
Associate Professor
Dept of Medicine (ID Division), AIIMS, Rishikesh

A growing body of evidence demonstrates that Integrated Antimicrobial Stewardship (IAS) Practice can optimize the outcomes by improving understanding towards right hospital infection prevention and control activities (ISP), right microbial diagnostic steps (DSP), and right use of antimicrobials (ASP). One of the core components of IAS practice is evidence based practice guideline to incorporate. This is first and essential element to be practiced by all health professionals. This will optimalise right Do's (1st D) and Don'ts (2nd D) of ISP, Right Diagnosis (3rd D) of DSP, Right Drug (4th D), Dose (5th D), Delivery (6th D), Decision on follow-up (7th D), and Duration (8th D) of ASP.

This first version of IAS book will be based on these primary 8D's. This is based on available evidence and prepared with help of all departments where infections are diagnosed and antimicrobials are used regularly.

This booklet shared steps are essential for a patient-treated area to implement with intention to have quality-driven care for betterment of both patients and HCWs. One has to provide true practices as asked in this document and if not followed these practices, one has to promise oneself to achieve ASAP.

Let's be determine in practicing the IAS in all our daily practices.

WAAW 2021 Team

Acknowledgement: Our sincere thanks to those who helped during preparation of this book directly and indirectly. We dedicate this text to all departments where antibiotics are used. We hope you find it useful.

Printed in Rishikesh.