NATIONAL ANTIBIOTIC GUIDELINES 2017

DOH

National Antibiotic Guidelines 2017:

What Pediatricians Should Know

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Objectives

Discuss the National Antibiotic Guidelines

- What is it?
- Why is it needed?
- How is it used?

Guide pediatricians on how to use antibiotics judiciously

Outline

National Antibiotic Guidelines 2017:

- What? Why? How?

Use of the National Antibiotic Guidelines in Common Clinical Scenarios

What is the National Antibiotic Guidelines?

Is a set of treatment recommendations for infectious diseases across organ systems

Consists of brief descriptions of disease categories with etiologic agents and corresponding antibiotic regimens

Why is it needed?

Is integral to combat antimicrobial resistance

Is a core element of antimicrobial stewardship

- intended to improve antimicrobial prescribing and dispensing
- intended to optimize antimicrobial use and help improve quality of patient care

How did the guidelines come about?

Creation of the National Antibiotic Guidelines Committee in 2014

NAGCOM Composition

Chair: Dr. Mediadora C. Saniel (Dr. Estrella Paje-Villar)

Members:

Dr. M. Delos Reyes - Philippine Society for Microbiology and Infectious Diseases

Dr. B. Galvez - Philippine Hospital Infection Control Society

Dr. C. delos Reyes - ***Pediatric Infectious Disease Society of the Philippines***

Dr. O. Limuaco - Philippine Pharmacists Association

Dr. C. Lazarte - Formulary Executive Council

Dr. C. Carlos - Research Institute for Tropical Medicine

Dr. R. Vianzon - National Center for Disease Prevention and Control

Dr. M. Lansang - UP College of Medicine

Dr. V. Roque - National Epidemiology Center

Dr. C. Fabregas - National Center for Health Facilities and Development

Secretariat: Pharmaceutical Division of the Department of Health

How did the guidelines come about?

Review of evidence-based local and international guidelines and literature, with priority given to those that utilized the **GRADE system**

(***G***rading of ***R***ecommendations ***A***ssessment, ***D***evelopment *and* ***E***valuation)

How did the guidelines come about?

Adaptation of available guidelines and treatment recommendations were made with the following considerations:

- ARSP rates
- Approved drugs in the National Formulary
- Quality of evidence
- Balance of potential benefits and harm
- Cost-effectiveness
- Availability of diagnostic tests
- Feasibility and resource implications

How did the guidelines come about?

Interim recommendations were discussed *en banc* and a consensus reached

Guidelines were sent to specialty/subspecialty societies for inputs prior to release

Consultation with external technical experts and public health program implementers were done

Government Agencies, Academia and Professional Medical Societies as Resource Persons/Technical Experts

Philippine Dental Association
Philippine Dermatological Society
Philippine Academy of Pediatric Pulmonologists
Philippine College of Chest Physicians
Philippine College of Physicians
Philippine College of Surgeons
Philippine Pediatric Society
Philippine Obstetrical and Gynecological Society
Philippine Society of Otolaryngology Head and Neck Surgery
Philippine Academy of Ophthalmology
Philippine Academy of Family Physicians
Philippine Neurological Association
Philippine Society of Nephrology

How is it used?

http://icamr.doh.gov.ph

Antimicrobial Stewardship Toolkit

Antimicrobial Stewardship Program in Hospitals MOP

National Antibiotic Guidelines

GOVPH | Home | ICAMR | Data on AMR | Publications | Media

Republic of the Philippines

ICAMR

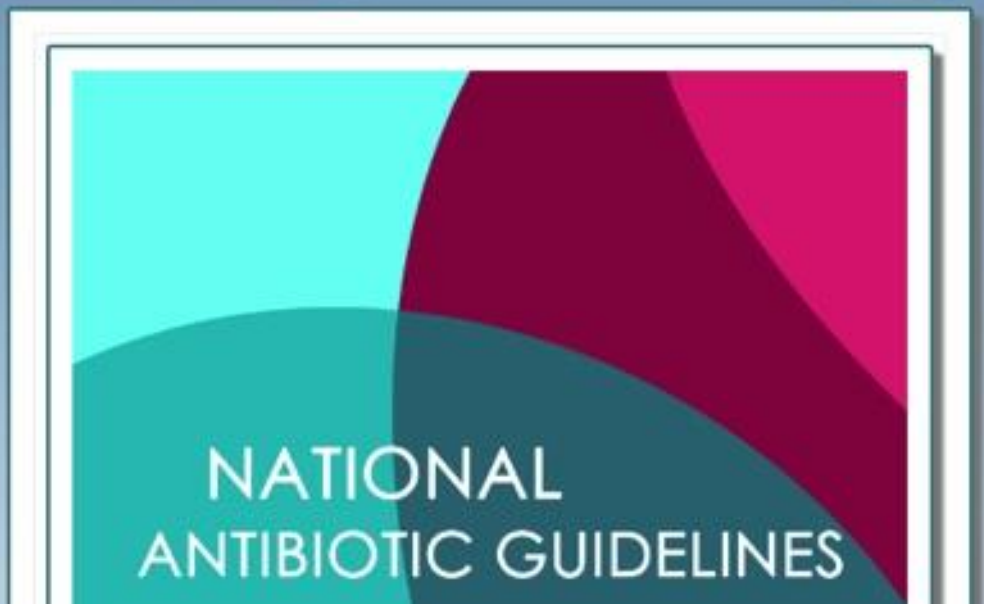
Interagency Committee on Antimicrobial Resistance

Philippine Standard Time
Monday, February 19, 2018, 10:21:10 PM

YOU ARE HERE: HOME / NATIONAL ANTIBIOTIC GUIDELINES

PAAW 2017
Philippine Antibiotic Awareness Week

PHILIPINE ANTIBIOTIC AWARENESS WEEK CELEBRATION



APEC Guideline to Tackle Antimicrobial Resistance in the Asia-

Antimicrobial Stewardship Toolkit

- Antimicrobial Stewardship Program in Hospitals Manual of Procedures
- National Antibiotic Guidelines

EVENTS

- AMR Summit
- AMS Workshop
- AMU Workshop

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NAGCom Guidelines

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Filariasis
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Malaria
Schistosomiasis
Sexually Transmitted Infections
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NAGCom Guidelines

Organ System Specific Infections
Blood
Bone and Joint
Cardiovascular
Central Nervous System
Dental and Oral

NAGCom Guidelines

Organ System Specific Infections
Gastrointestinal Tract
Ocular
Respiratory Tract
Skin and Soft Tissue
Urinary Tract Infection

Top Causes Child Mortality/Morbidity

1. Pneumonia
2. Diarrhea
3. Sepsis
4. Meningitis
5. UTI

Use of the National Antibiotic Guidelines in Common Clinical Scenarios

Case 1: Rosalinda

6 years, female

sudden onset of fever, sore throat, no cough

Associated symptoms: headache, vomiting

Relevant exposure: none

PE: hyperemic pharynx, enlarged tonsils with exudates, (+) palatal petechiae, enlarged and tender anterior cervical lymph nodes

Case 1: Rosalinda

Case 1: Rosalinda

What is your diagnosis?

What is the etiology?

What is your treatment?

Case 1: Rosalinda

A. Diphtheria
B. Infectious Mononucleosis
C. Exudative Pharyngitis

EXUDATIVE PHARYNGITIS

Etiology	Preferred Regimen	Comments
Group A, C, G Streptococci Fusobacterium	**Penicillin V** 50 mg/kg/day PO q6h x 10 days OR **Amoxicillin** 50 mg/kg/day PO q 8-12h **x 10 days** (Max: 1g/day) <u>Penicillin Allergy</u>: **Erythromycin** OR **Clarithromycin** OR **Azithromycin** may be given	**cough, rhinorrhea, hoarseness, oral ulcers suggest a viral etiology** Cotrimoxazole, Tetracyclines, FQs not effective; **Co-amoxiclav NOT recommended** Resistance to macrolides have been reported

Case 1: Rosalinda

Is an antibiotic necessary?

URTI Guidelines

Acute epiglottitis
Diphtheria
Gonococcal pharyngitis
Laryngitis
Lemierre's syndrome
Mastoiditis
Otitis Media
Peritonsillar abscess
Recurrent pharyngitis
Retropharyngeal abscess
Sinusitis
Viral pharyngitis

Case 2: Estrella

5 months, female

colds x 5 days

cough, wheezing, fever x 3 days

Relevant exposures: colds in both parents

PE: RR-55, T-38.4°C; rhinorrhea; intercostal and subcostal retractions, diffuse fine inspiratory crackles & expiratory wheezes

Case 2: Estrella

CBC:

normal WBC count,

differential ct.-mononuclear predominance

CXR:

hyperaerated lungs,

peribronchial thickening, no infiltrates

Case 2: Estrella

Case 2: Estrella

What is your diagnosis?

What is the etiology?

What is your treatment?

Case 2: Estrella

A. Bronchiolitis
B. Pertussis
C. Pneumonia

BRONCHIOLITIS

Etiology	Preferred Regimen	Comments
RSV 50% HPIV 25% Human Metapneumo-virus	< 5 y: **Ribavirin** for severe disease (requiring MV).	**ANTIBIOTICS ARE NOT INDICATED** unless there is secondary bacterial infection. The mainstay of therapy is supportive care.

Case 2 : Estrella

Is an antibiotic necessary?

Case 3: Lulu

6 years, female

colds x 2 days followed by productive cough 4 days later

Associated symptom: occasional vomiting

cough has been there for over a week and now with sputum purulence

PE: T-38 °C, crackles and scattered wheezes

Case 3: Lulu

CBC: not available

CXR: normal

Case 3: Lulu

What is your diagnosis?

What is the etiology?

What is your treatment?

Case 3: Lulu

A. Bronchiolitis

B. Bronchitis

C. Bronchiectasis

BRONCHITIS

Etiology	Preferred Regimen	Comments
<u><2 y</u>: Adenovirus **<u>>2-5 y</u>:** RSV PIV Human metapneumovirus	**No antibiotics**, unless there is sinusitis or if with heavy growth on throat culture for: *S. pneumoniae*, GAS, *H. influenzae*	**Purulent sputum alone is NOT an indication to start antibiotics.** Expect the illness to last for about 2 weeks.

Case 3: Lulu

Is an antibiotic necessary?


COUGH
COUGH

Case 4 : Josie

4 years, female
colds and cough x 4 days, with high fever
today with slight decrease in appetite

Relevant exposure: no illness within family
Immunization history: unknown

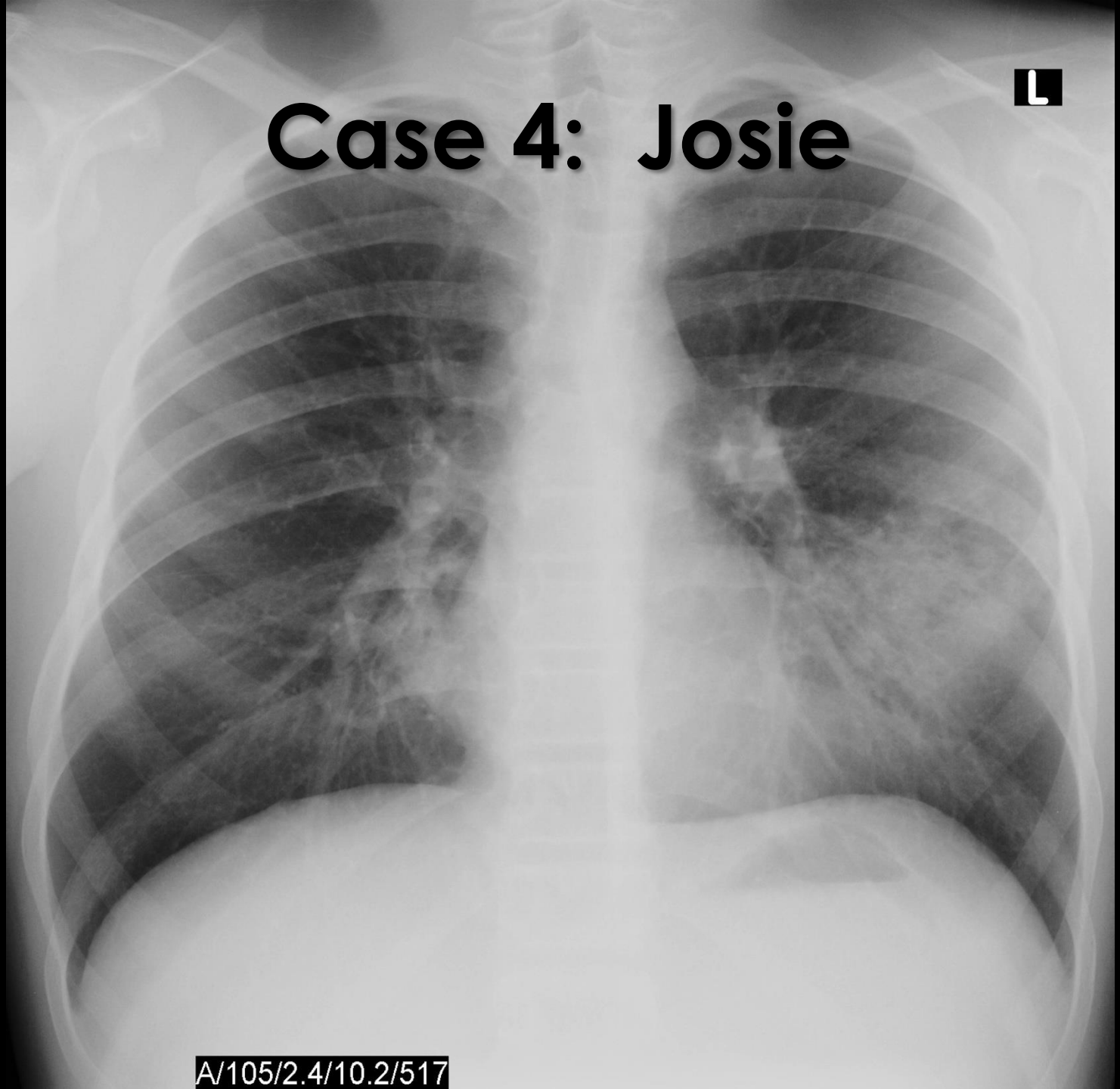
PE: RR-32, asleep, eyes not sunken, no nasal flaring, no subcostal and intercostal retractions, (+) scattered crackles and rhonchi

Case 4: Josie

CBC: WBC 15,000; ⇧segmenter

CXR: confluent infiltrates, LLL

Case 4: Josie



Case 4 : Josie

What is your diagnosis?

What is the etiology?

What is your treatment?

Case 4: Josie

A. Bronchitis
B. Bronchiectasis
C. Pneumonia

CAP in CHILDREN UP TO 5 YEARS

Pediatric CAP (PCAP) Classification:

PCAP A/B (non-severe):

No or mild dehydration
no malnutrition
no pallor
awake
no signs of respiratory failure
respiratory rate of ≥50-≥60/min (3-12 mos.),
≥40-≤50/min (1-5y), ≥30-≤35/min (>5 years)

CAP in CHILDREN UP TO 5 YEARS

Pediatric CAP (PCAP) Classification:

PCAP C (severe):

Moderate dehydration
moderate malnutrition
with pallor
irritable (+) intercostal/ subcostal retractions, head bobbing, cyanosis)
respiratory rate of >60-≤70/min (3-12 mos), >50/min (1-5 y), >35/min (>5y)
NO grunting; NO apnea

CAP in CHILDREN UP TO 5 YEARS

Pediatric CAP (PCAP) Classification:

PCAP D (very severe):

Severe dehydration
severe malnutrition
with pallor
lethargic/ stuporous/in coma
(+)supraclavicular/intercostal/subcostal retractions,
head bobbing, cyanosis, grunting, apnea
respiratory rate >70/min (3-12 mos), >50/min (1-5 y),
>35/min (>5 y)

ARSP 2016

***S. pneumoniae*:** **Cumulative resistance** rate of isolates from all specimen types reported for 2016 **against penicillin**, using meningitis breakpoints, was at **6.1%** (n=427).

H. influenzae For 2016, **7.8% of isolates were resistant to ampicillin** (n= 461) and 5.8% were resistant to amoxicillin-clavulanic acid (n=431).

CAP in CHILDREN UP TO 5 YEARS

Etiology	Preferred Regimen	Comments
S. pneumoniae in 30%-50% *Hib* in 10%-30% *S. aureus* *K. pneumoniae* *NTHI*	**PCAP A or B** If with complete Hib vaccination: **Amoxicillin** 80-90 mg/kg/d div q12h PO x 5d If with no Hib vaccination or incomplete or unknown vaccination history: **Co-amoxiclav (80-90 mg/kg/d)** OR **Cefuroxime**	Equal efficacy between oral amoxicillin and IV penicillin if feeding is tolerated.

CAP in CHILDREN UP TO 5 YEARS

Etiology	Preferred Regimen	Comments
S. pneumoniae in 30%-50% *Hib* in 10%-30% *S. aureus* *K. pneumoniae* *NTHI*	**PCAP C:** If with complete Hib vaccination: **Penicillin** OR **Ampicillin** If with no Hib vaccination: **Cefuroxime** OR **Ceftriaxone** OR **Ampicillin-Sulbactam**	Switch from IV to oral form 2-3 days after initiation of treatment in patients who are: 1. Responding 2. Able to feed 3. Free from pulmonary/ extrapulmonary complications

CAP in CHILDREN UP TO 5 YEARS

Etiology	Preferred Regimen	Comments
S. pneumoniae in 30%-50% *Hib* in 10%-30% *S. aureus* *K. pneumoniae* *NTHI*	**PCAP D:** Refer to Specialist; Admit to Critical Care Unit	

OTITIS MEDIA

Etiology	Preferred Regimen	Comments
Bacterial pathogens account for 85% of middle ear infections: *S. pneumoniae* in 49% *H. influenzae* in 29% *M. catarrhalis* in 28%. Viruses cause up to 6% of middle ear infections.	First Line: (No abx use the prior month) **Amoxicillin** 80-90mg/kg/d PO div q12h Treatment Duration: <2y: 10 d 2-5y: 7 d >5y: 5-7d	Prevention includes immunization against Hib, *Strep. pneumoniae*

OTITIS MEDIA

Etiology	Preferred Regimen	Comments
Bacterial pathogens account for 85% of middle ear infections: *S. pneumoniae* in 49% *H. influenzae* in 29% *M. catarrhalis* in 28%. Viruses cause up to 6% of middle ear infections.	<u>Second Line:</u> With anaphylaxis: **Clarithromycin** 15mg/kg/d PO q12h No anaphylaxis: **Cefuroxime axetil** 30mg/kg/d q12h **DOT:** <2y: 10 d; 2-5y: 7 d; >5y: 5-7d OR **Ceftriaxone** 50mg/kg/d IM/IV x 3d	For patients above 2 years old with no fever and ear pain with a negative or questionable exam, consider analgesic treatment without antimicrobials. There may be favorable results in mostly afebrile patients with waiting for 48 hours before deciding to use antibiotics.

SINUSITIS

Etiology	Preferred Regimen	Comments
S. pneumonia *H. influenzae* *M. catarrhalis* *S. aureus* Anaerobic bacteria Other Streptococcal sp.	First Line: **Co-amoxiclav** x 10-14d 1-3 mos.: 30mg/kg/d div q12h ≥3 mos.: 20-40mg/kg/d div q8h or 25-45mg/kg/d div q12h *For bid dosing, use the following formulations:* 200/28.5mg or 400/57mg	**Use Antibiotics If**: 1) with high fever and purulent nasal discharge or facial pain for > 3 days 2) still symptomatic after 10 days with no antibiotic 3) symptoms worsen after a typical viral illness that lasted 5 days and had initially improved.

SINUSITIS

Etiology	Preferred Regimen	Comments
S. pneumonia *H. influenzae* *M. catarrhalis* *S. aureus* Anaerobic bacteria Other Streptococcal sp.	<u>Second Line:</u> **Co-amoxiclav** ≥3 mos. AND <40 kg: 90 mg/kg/d q12h using **600/42.9mg/5 ml** OR **Cefuroxime** 30mg/kg/d div q12h x min 10d For patients with severe penicillin allergy (pediatric): Type 1: **Clarithromycin** 15mg/kg/d div q12h Type 2: **Cefuroxime** 30mg/kg/d div q12h x min 10d	

Case 4: Josie

Is there a need to obtain specimen for microbiologic testing prior to treatment?

LRTI Guidelines

Influenza

Empyema

Lung abscess

Pertussis

Ventilator-associated Pneumonia

Case 5: Jimmy

3 years old, male

loose bowel movement x 5 days

Other sx: vomiting, abdominal pain, high fever, anorexia

Relevant exposure: attends daycare where 2 children have been reported to have diarrhea

PE: lethargic, sunken eyes; distended abdomen, hyperactive bowel sounds, abdominal tenderness; rectal exam not done

Case 5: Jimmy

CBC: WBC 15,000; bands > segmenters

Electrolytes: ↓ Na, K, Ca

Stool exam: (+) fecal blood, >50 PMNs/HPF

Case 5: Jimmy

What is your diagnosis?

What is the etiology?

What is your treatment?

Case 5: Jimmy

A. Amoebiasis
B. Dysentery
C. Inflammatory Bowel Disease

ACUTE DIARRHEA AND GASTROENTERITIS

Classification of dehydration status of children 2 months to 5 years of age (IMCI 2014):

Severe dehydration

(when 2 of the following signs are present)

- Lethargic or unconscious / Sunken eyes
- Not able to drink or drinking poorly / Skin pinch goes back very slowly

ACUTE DIARRHEA AND GASTROENTERITIS

Classification of dehydration status of children 2 months to 5 years of age (IMCI 2014):

Some dehydration

(when 2 of the following signs are present)

- Restless, irritable / Sunken eyes
- Drinks eagerly / Skin pinch goes back slowly

ACUTE DIARRHEA AND GASTROENTERITIS

Etiology	Preferred Regimen	Comments
<u><12 months</u> Rotavirus ETEC *Cryptosporidium* **<u>12-23 months</u>** Rotavirus ETEC *Shigella*	IMCI protocol for neonates up to 2 months: *For dysentery:* **Ciprofloxacin** tab 30 mg/kg/d div 2 doses x 3d	IMMUNIZATION of infants starting at 6 weeks of age with either of 2 available live attenuated rotavirus vaccines is recommended to afford protection against severe rotavirus disease.

ACUTE DIARRHEA AND GASTROENTERITIS

Etiology	Preferred Regimen	Comments
<u>24-59 months</u> Rotavirus *Shigella* *Vibrio cholera*	IMCI protocol for child 2 months to 5 years: *For cholera:* **Erythromycin** 250 mg tab qid x 3d OR **Tetracycline** *For suspected dysentery:* **Ciprofloxacin** 30 mg/kg/d div 2 doses x 3d	**ARSP 2016:** Combined 2014-2016 data reveals **emerging resistance of *Shigella* species against the fluoroquinolones** with cumulative rate of resistance at 13.7% against ciprofloxacin (n=51).

Case 5: Jimmy

Is there a need to obtain specimen for microbiologic testing prior to treatment?

ACUTE DIARRHEA AND GASTROENTERITIS

Etiology	Preferred Regimen	Comments
S. typhi	First Line: **Amoxicillin** 75-100mg/kg/d q8h x 14d (Max: 500mg 2 caps q6h) OR **Ampicillin** 100-200mg/kg/d IV q6h x 14d (Max: 12g/24h) OR **Chloramphenicol** 50-75mg/kg/d q6h x 14-21d (Max: 500mg 2 caps q6h) OR **TMP-SMX** 8mg/kg/d (TMP component) q12h x 14d	

ACUTE DIARRHEA AND GASTROENTERITIS

Etiology	Preferred Regimen	Comments
MDR *S. typhi*	<u>Second Line:</u> **Cefixime** 15-20mg/kg/d q12h x 7-10d (Max: 200mg 1 tab q12h) OR **Azithromycin** 20mg/kg/d q24h x 5-7d (Max: 500mg 1 tab q24h) OR **Ciprofloxacin** 30mg/kg/d q12h x 7-10d (Max: 500mg 1 tab q12h)	Second Line antibiotics reserved for suspected or proven **MDR *S. typhi***: Failure to respond after 5-7 days tx with a first line antibiotic; Household contact with a documented case or during an epidemic of MDRTF; Clinical deterioration on tx

ACUTE DIARRHEA AND GASTROENTERITIS

Etiology	Preferred Regimen	Comments
Nontyphoidal Salmonella (in the setting of severe diarrhea in infants less than 6 months, malnourished, immuno-compromised children)	**Ceftriaxone** 75-100 mg/kg/d IV q24h X 14d OR **Azithromycin** 6 mg/kg/d PO OD x 5d OR **Ciprofloxacin** 30 mg/kg/d IV in 2 div. doses x 10-14d	**Increasing resistance of nontyphoidal salmonella to ciprofloxacin** (n= 187) is noted with rate at 12.8% for 2016.

GASTROINTESTINAL TRACT GUIDELINES

CAPD-Associated Peritonitis

Gallbladder Infection

Hepatitis A B C

Liver Abscess

Primary Spontaneous Bacterial Peritonitis

Secondary Peritonitis

Case 6: Meg

4 days old, female

fever by touch, poor feeding

Maternal & Birth History:

35 year old G1; unremarkable pre-natal and perinatal course; discharged within 24 hours from a lying-in clinic

PE: T-38.5 °C, CR-165, RR-61, weak cry, flat anterior fontanel, (-) jaundice, (-) alar flaring, supple neck, clear breath sounds, (-) murmur, (-) periumbilical erythema, soft abdomen, full pulses, CRT 2-3s,

(-) skin pustules

Case 6: Meg

What is your diagnosis?

What is the etiology?

What is your treatment?

Case 6: Meg

A. Dehydration Fever
B. Neonatal Sepsis

SEPSIS

Etiology	Preferred Regimen	Comments
POTENTIALLY SEPTIC: asymptomatic, with documented maternal risk factors (UTI during last trimester, membranes ruptured >18h before delivery, fever > 38°C before delivery or during labor and/or purulent amniotic fluid)		
Gram-negative bacilli Group B Streptococcus *S. pneumoniae* *S. aureus*	**Ampicillin** PLUS **Gentamicin** OR **Amikacin**	Consider DC abx in infants who remain Asx and whose initial blood CS are negative after 72h

SEPSIS

Etiology	Preferred Regimen	Comments
NEONATAL SEPSIS: non-specific Sg and Sx or with focal signs of infection		
Gram-negative bacilli Group B Streptococcus *S. pneumoniae* *S. aureus*	First Line: **Cefotaxime** PLUS **Gentamicin** OR **Amikacin** Second Line: **Ceftazidime** PLUS **Gentamicin** OR **Amikacin**	Add **Oxacillin or Vancomycin** (MRSA) if with skin/soft tissue infections Precautions should be observed with **Ceftriaxone**

Case 7: Celia

- 5 weeks, female
- live preterm, 29 weeks by PA, 705 g, SGA, delivered by CS secondary to bleeding placenta previa, AS 8,9
- HMD s/p surfactant (1/13), resolved
- Nosocomial Pneumonia (1/20), resolved
- Clinical Nosocomial Sepsis, resolved (1/26)
- NEC Stage IIB, resolved
- PDA, s/p medical closure
- Candidemia (2/2), resolved
- *Klebsiella pneumoniae* MDRO Sepsis (2/15)

Case 7: Celia

What is your diagnosis?

What is the etiology?

What is your treatment?

Etiology	Preferred Regimen	Comments
HEALTHCARE-ASSOCIATED SEPSIS		
Gram-negative bacilli *S. aureus*	**Ceftazidime** OR **Cefepime** OR **Piperacillin-Tazobactam** OR **Meropenem** w/ or w/o **Amikacin** w/ or w/o **Vancomycin**	Choice of empiric antibiotic should be based on current antimicrobial susceptibility pattern within an institution
SEPSIS (MDRO): Microorganims, predominantly bacteria that are resistant to one or more agents in 3 or more classes of antimicrobial categories.		
MRSA VRE ESBL PRSP	**Refer to Specialist**	

Case 7: Celia

Is monotherapy acceptable or is combination therapy required?

Blood-borne Infections

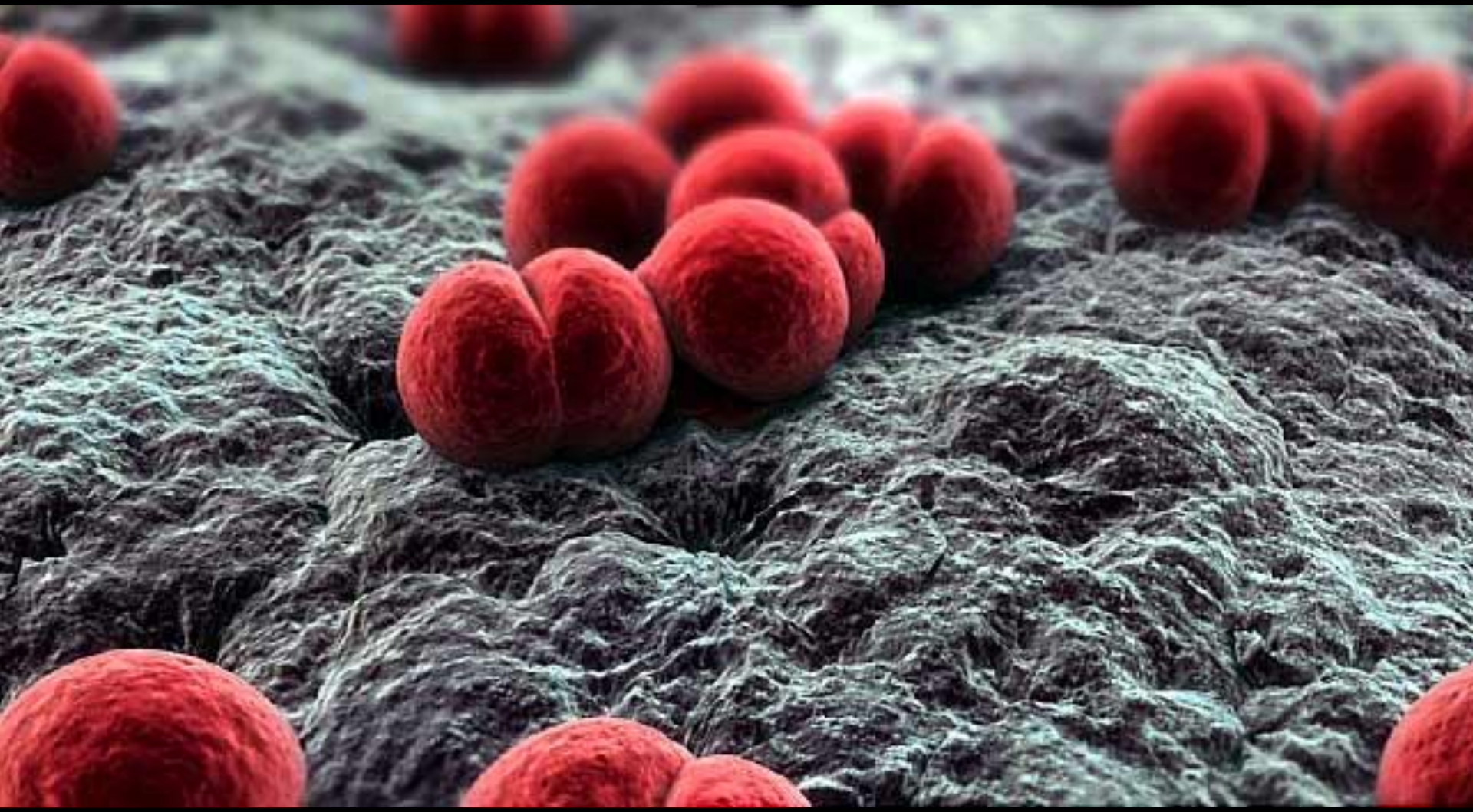
Sepsis, without focus

Sepsis, intra-abdominal source

Sepsis, urinary source

Sepsis, severe and septic shock

TSS (Staphylococcal, Streptococcal)



Case 8: May

6 months, female
fever with associated cough over the last 4 days
feeding poorly for the last 2 days
brought for seizures

Immunization Hx: (+)BCG, (+) 1 Hepatitis B
Family Hx: BFC, 3 year old sibling (no shots)

PE: T- 39.5 °C, CR-150, RR-55, irritable; bulging anterior fontanel, (+) nuchal rigidity; diffuse coarse crackles; CRT 3s, (-) rash

Case 8: May

What is your diagnosis?

What is the etiology?

What is your treatment?

Case 8: May

A. Benign Febrile Convulsions
B. Bacterial Meningitis
C. Encephalitis

BACTERIAL MENINGITIS

Etiology	Preferred Regimen	Comments
<2 months *E. coli* *S. pneumoniae* *Klebsiella* *Enterobacter* *GBS*	**Ampicillin** OR **Cefotaxime**	**Give antibiotics immediately after obtaining cultures** Repeat LT in neonates tp verify sterilization in gram-negative meningitis
>2 months-5 years *S. pneumoniae* *H. influenzae** *N. meningitidis**	**Cefriaxone** OR **Chloramphenicol**	Add Dexamethasone for Hib meningitis; Give Rifampicin prophylaxis*
>5–18 years *S. pneumoniae* *N. meningitidis*	**Ceftriaxone**	

Case 8: May

CSF analysis:
Opening pressure: 250 mm H20
Turbid
Leucocytes: 2,000/mm3, PMNs predominate
Protein: 300 mg/dl
CSF to Serum Glucose Ratio: 20%
Gram Stain: (+) gram-negative coccobacilli
CSF Bactigen: requested

Treatment:
Ceftriaxone 100 mg/kg/24h

Case 8 : May

Is use of the drug for the condition supported by evidence?

Is the dose appropriate to the site and type of infection?

Case 9 : Lester

Lester is the 3 year old sibling of May (probable Hib meningitis)

asymptomatic, normal PE

Case 9 : Lester

Is there a need for prophylaxis for exposed close contacts of May?

Rifampicin Prophylaxis

Patients <10 yrs. with confirmed Hib meningitis should receive Rifampicin prophylaxis to eradicate the carrier state.

Dose:

<3*yrs*: Rifampicin 10 mkday for 4 d

>3-*10yrs*: Rifampicin 20 mkday for 4 d

Max dose: 600 mg

CNS Guidelines

Brain Abscess

Encephalitis

Fungal Meningitis

Case 10: Betty

3 years, female

urinary frequency, dysuria, foul-smelling urine; no vomiting or any abnormal Sx

PE:

T-37.4 °C, (+) suprapubic pain on palpation

Case 10: Betty

Urinalysis:

(+) pyuria

(+) leucocyte esterase

(+) nitrite

Urine culture: awaiting result

Case 10: Betty

What is your diagnosis?

What is the etiology?

What is your treatment?

Case 10: Betty

A. Acute Cystitis

B. Acute Pyelonephritis

UTI

Acute Uncomplicated UTI

Acute pyelonephritis: Condition that indicates renal parenchymal involvement where infants and children may present with fever with any or all of the following symptoms:

abdominal, back, or flank pain
malaise
nausea
vomiting
occasionally, diarrhea

Infants and children who have bacteriuria and fever≥ 38°C OR those presenting with fever <38°C with loin pain/tenderness and bacteriuria should be worked up for acute pyelonephritis.

UTI

Acute Uncomplicated UTI

Acute cystitis: condition that indicates urinary bladder involvement where infants and children may present with any or all of the following symptoms:

dysuria
urgency
frequency
suprapubic pain
incontinence

malodorous urine.

Patients usually have no systemic signs or symptoms.

UTI

Etiology	Preferred Regimen	Comments
E. coli *Klebsiella* *Enterobacter* *Enterococcus* GBS	Infants < 2 months: **Cefotaxime** PLUS **Amikacin** for 10-14 days	Early onset is usually due to maternal transmission. Adjust therapy based on culture. Use ceftriaxone if cefotaxime is not available and the neonate is not jaundiced.

UTI

Etiology	Preferred Regimen	Comments
E. coli *Klebsiella* *Enterobacter* *Citrobacter*	2 months to 18 years Oral options: **Amoxicillin-clavulanate:** <40 kg: 20-40 mg (amoxicillin)/kg/d q8h OR 25-45 mg/kg/d q12h using the 200 mg/5mL or 400 mg/5mL >40 kg: 500-875 mg q8h maximum dose: 2g/d OR **Cefuroxime** >3 mos - 12 yrs: 20 - 30 mg/kg/d PO q12h	**Oral therapy is equally effective as IV therapy.**

UTI

Etiology	Preferred Regimen	Comments
E. coli *Klebsiella* *Enterobacter* *Citrobacter*	Adolescents: **Cefuroxime** 250-500 mg PO q12h OR **Nitrofurantoin** (only for cystitis) 5-7 mg/kg/d q6h, maximum dose: 400 mg/d IV: **Ampicillin-Sulbactam**100-200 mg/kg/d of ampicillin q6h IM or IV infusion over 10-15 min OR **Cefuroxime** 75-150 mg/kg/d q8h, max dose: 6 g/d. For those >40 kg, use adult dose. **Duration of therapy** (IV/PO): 7-14d	IV therapy is preferred for seriously ill children and for those who cannot take oral medications.

Case 10: Betty

Started on oral Co-amoxiclav

Urine CS: *E. coli*, 100,000 col./ml urine

Sensitive:

Amoxicillin
Ampicillin
Amoxicillin-Clavulanic Acid
Amikacin
Cefuroxime
Ceftriaxone
Piperacillin-Tazobactam
Meropenem

Case 10: Betty

Is my antibiotic of choice
the narrowest spectrum drug
to target the condition?

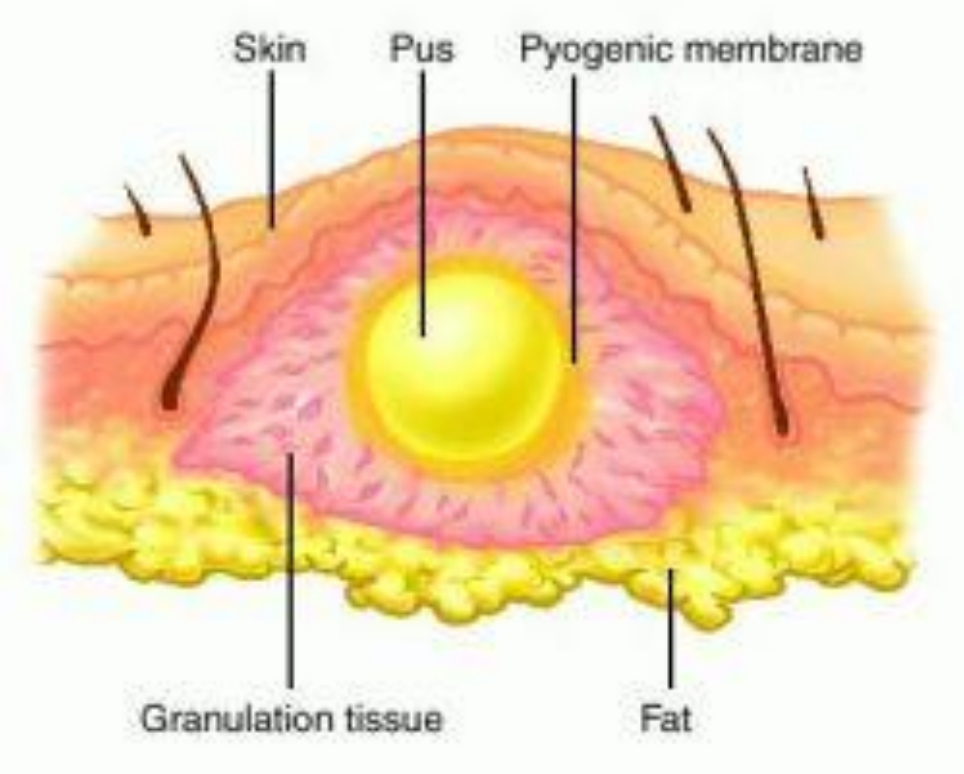
UTI Guidelines

UTI recurrent

UTI catheter-related

UTI hospital acquired

Perinephric Abscess


Skin
Pus
Pyogenic membrane
Granulation tissue
Fat

Case 11: Sally & Liza

7 and 5 years old respectively, females

Recurrent purulent skin lesions over the last 8 months

1st episode: <2 cm abscess over L thigh; no antibiotics; hot packs applied with resolution

2nd episode: 6 cm abscess over the R axilla; I & D done; given Cotrimoxazole PO x 10 days c/o LHC

1st episode: 2 cm pimple-like lesion over the forehead with spontaneous rupture and resolution

2nd episode: 7 cm fluctuant mass over the R inguinal area, treated with Cloxacillin with no improvement

Case 11: Liza

PE: T-38.5 °C, 7 cm fluctuant mass,
R inguinal area with cellulitis

Case 11: Liza

Case 11: Sally & Liza

What is your diagnosis?

What is the etiology?

What is your treatment?

Case 11: Sally & Liza

A. Abscess

B. Lymphoma

C. TB Adenitis

Skin and Soft Tissue Infections

Etiology	Preferred Regimen	Comments
Etiology: *S. aureus*: Methicillin sensitive (MSSA), Methicillin resistant (MRSA)	**Incision and drainage is the mainstay of therapy** **Cloxacillin** 50-100mg/kg/d in 4 doses (Max: 2g/d) OR **Cephalexin** *Mild to moderate infections:* 25-50mg/kg/d in 3-4 doses *Severe infections:* 75-100mg/kg/d in 3-4 doses (Max: 4g/d)	**Community-acquired MRSA is of increasing concern.**

Skin and Soft Tissue Infections

Etiology	Preferred Regimen	Comments
Etiology: *S. aureus*: Methicillin sensitive (MSSA), Methicillin resistant (MRSA)	**Oxacillin** *Mild to moderate infections:* 100-150mg/kg/d IV/IM in 4 doses (Max: 4 g/d) *Severe infections:* 150-200mg/kg/d IV/IM in 4-6 doses (Max: 12 g/d) OR **Cefazolin** *Mild to moderate infections:* 50mg/kg/d IV/IM in 3-4 doses (Max: 3g/d) *Severe infections:* 100-150mg IV/IM in 3-4 doses (Max: 6g/d)	

Skin and Soft Tissue Infections

Etiology	Preferred Regimen	Comments
Etiology: *S. aureus*: Methicillin sensitive (MSSA), Methicillin resistant (MRSA)	Second Line: **Clindamycin** 10-30mg/kg/d PO in 3-4 doses (Max: 1.8g/d) OR **Cotrimoxazole** 8-12mg/kg/d in 2 doses (TMP component) (Max: 320mg/d) OR **Doxycycline** 2-4mg/kg/d in 1-2 doses (Max: 200mg/d) OR **Linezolid** *Mild to moderate infections:* **<12 yrs.:** 30mg/kg/d in 3 doses **≥12 yrs.:** 1200mg/d in 2 doses *Severe infections:* Same (Max: 1.2g/d) **DOT**: 7-10d	

Skin and Soft Tissue Infections

Etiology	Preferred Regimen	Comments
Etiology: *S. aureus*: Methicillin sensitive (MSSA), Methicillin resistant (MRSA)	Second Line: **Clindamycin** 25-40mg/kg/d IV in 3-4 doses (Max: 2.7g/d) **OR** **Vancomycin** 40-60 mg/kg/d IV in 4 doses (Max: 4 g/d) **OR**	

Comments on SSTI

I & D: May treat patients with incision and drainage only and in outpatient setting if there is no diabetes or immunosuppression, and boil or abscess is **<5 cm** in diameter.

I & D PLUS Systemic therapy: may be effective in abscess **>5 cm** in diameter and in **multiple abscesses.**

Comments on SSTI

Antibiotic therapy is recommended for abscesses with the following conditions:

severe or extensive disease

(e.g., involving multiple sites of infection)

rapid progression in presence of cellulitis

presence of systemic inflammatory response syndrome (SIRS), such as temperature >38°C or <36°C, tachypnea >24 breaths per minute, tachycardia >90 beats per minute, or white blood cell count >12,000 or <4000 cells/µL

Comments on SSTI

Antibiotic therapy is recommended for abscesses with the following conditions:

associated comorbidities or immunosuppression; extremes of age abscess

in areas difficult to drain (e.g., face, hand and genitalia)

lack of response to I&D alone

Comments on SSTI

An agent active against **MRSA** is recommended for any of the following:

Patients with carbuncles or abscesses who have failed initial antibiotic treatment against MSSA

Those with markedly impaired host defenses or

Those with SIRS and hypotension

Case 11: Sally & Liza

What is the mimimum duration of therapy to treat the condition?

Case 11: Sally & Liza

Are there other adjuncts to treatment apart from systemic antibiotics?

Recurrent Staphylococcal Infections

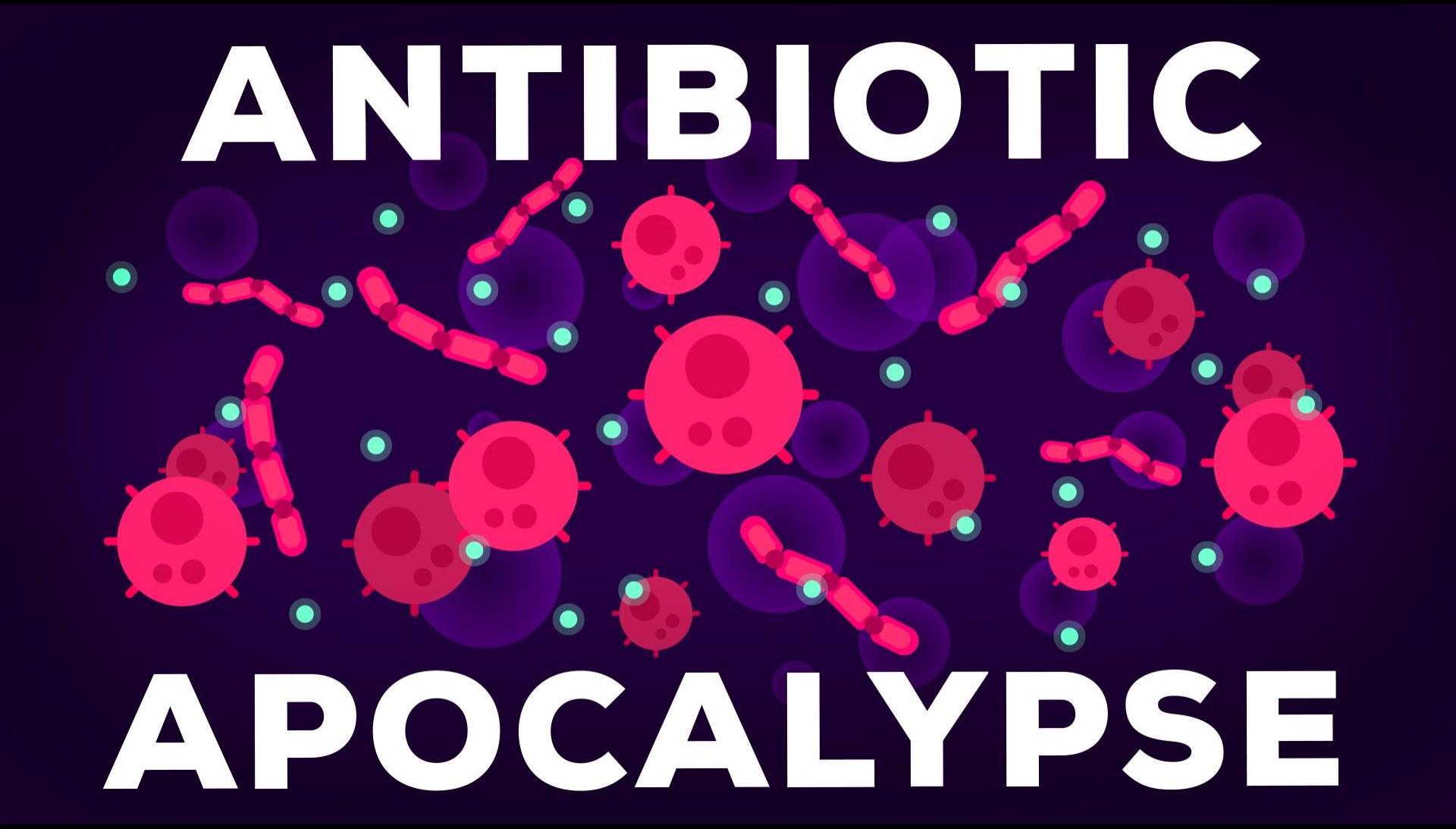
Decolonization

Recurrent: 2 or more episodes in 1 year or other household members develop infection

Mupirocin ointment in anterior nares and under fingernails bid x 7d **PLUS** Chlorhexidine 4% shower daily x 7d

Bleach baths (tub of warm water with ¼ cup of 6% sodium hypochlorite (household bleach) for 15 minutes, is as effective as use of chlorhexidine shower body washes

ANTIBIOTIC APOCALYPSE



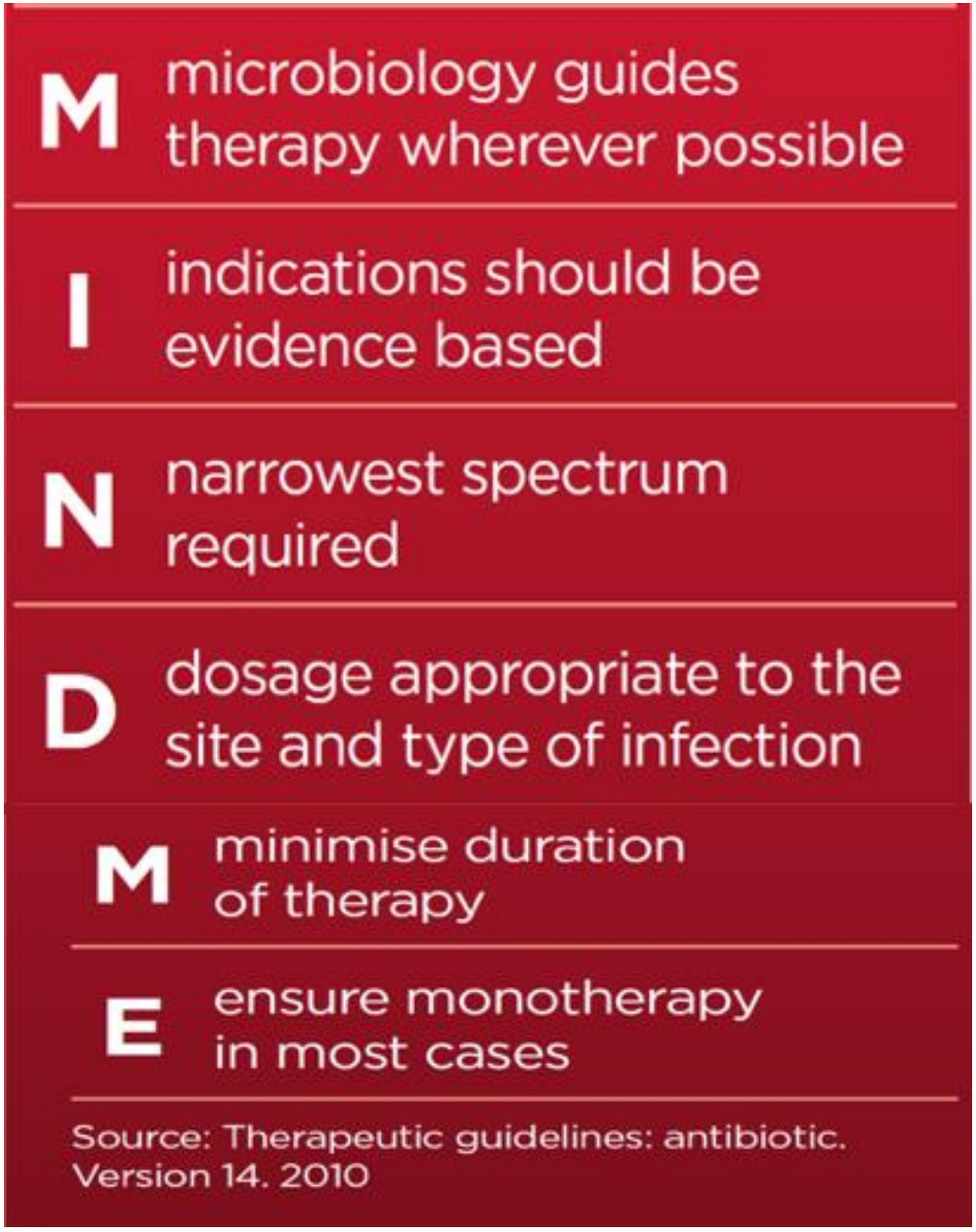
National Antibiotic Guidelines

Are a core element of antimicrobial stewardship.

Provide guidance in the management of infectious diseases, in the selection of the most appropriate antimicrobial, to discourage the misuse of antimicrobials, and improve patient care.

MINDME
The Antimicrobial Creed

Antimicrobial Prescribing Clinical Guideline 2014, Government of South Australia
Antibiotic Expert Group, *Therapeutic Guidelines: Antibiotic Version 14. 2010, Melbourne: Therapeutic Guidelines Limited.*


M
microbiology guides therapy wherever possible
I
indications should be evidence based
N
narrowest spectrum required
D
dosage appropriate to the site and type of infection
M
minimise duration of therapy
E
ensure monotherapy in most cases
Source: Therapeutic guidelines: antibiotic. Version 14. 2010

National Antibiotic Guidelines

Are not intended to supersede a healthcare provider's clinical judgment.

Used by taking into account variation in a patient's clinical presentation (co-morbidities), patient preferences, and limitation in resources.

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Guidelines do not implement themselves

How is it used?

- http://icamr.doh.gov.ph
  - **Antimicrobial Stewardship Toolkit**
    - **Antimicrobial Stewardship Program in Hospitals MOP**
    - **National Antibiotic Guidelines**

On behalf of NAGCOM

WE WELCOME FEEDBACK ON THE USE OF THE NATIONAL ANTIBIOTIC GUIDELINES !

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Acknowledgement

Dr. Mediadora Saniel

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- All references are cited at the end of each guideline

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THANK YOU!

HAPPY ANNIVERSARY!