COMMON DISEASES IN FAMILY PRACTICE

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Last Update:
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UP-PGH DFCM Intern's Committee

COMMON DISEASES

1. HYPERTENSION
2. DYSLIPIDEMIA
3. DYSPEPSIA
4. URINARY TRACT INFECTION
5. DIABETES MELLITUS
6. BRONCHIAL ASTHMA
7. PULMONARY TUBERCULOSIS
8. COMMUNITY ACQUIRED PNEUMONIA
9. PEDIATRIC COMMUNITY-ACQUIRED

HYPERTENSION

Eighth Joint National Committee (JNC 7 and 8)

2014

National Clinical Guideline Centre

National Institute for Health and Clinical Excellence (NICE)

2011

Evaluation and Treatment of Severe

Asymptomatic Hypertension Am Fam Physician. 2010

SCREENING

USPSTF 2014 (UNITED STATES PREVENTIVE SERVICES TASK FORCE)

EVERY 2 YEARS FOR PERSONS WITH A BP OF <120/80 MMHG.

YEARLY IF BP IS 120-139/80-89

HMBP

When using home blood pressure monitoring (HBPM) to confirm a diagnosis of hypertension, ensure that:

- for each blood pressure recording, two consecutive measurements are taken, at least 1 minute apart
- With the person seated
- BP is recorded twice daily, ideally in the morning and evening
- blood pressure recording continues for at least 4 days, ideally for 7 days

***NICE 2011**

HMBP

Discard the measurements taken on the first day and use the average value of all the remaining measurements to confirm a diagnosis of hypertension

***NICE 2011**

HYPERTENSION: Diagnosis

Physical examination

- Get the BP from both arms*
- Repeat the BP after consult if initial BP is ≥ 140/90
- Perform a neurologic exam
- Perform a fundoscopic exam

8. When considering a diagnosis of hypertension, measure blood pressure in both arms:
   - If the difference in readings between arms is more than 20 mmHg, repeat the measurements.
   - If the difference in readings between arms remains more than 20 mmHg on the second measurement, measure subsequent blood pressure in the arm with the higher reading. [new 2011]

***NICE 2011**

HYPERTENSION: Diagnosis

Table 3. Classification of blood pressure for adults

Blood Pressure Classification	SBP mmHg	DBP mmHg
Normal	<120	and <80
Prehypertension	120–139	or 80–89
Stage 1 Hypertension	140–159	or 90–99
Stage 2 Hypertension	≥160	or ≥100

SBP, systolic blood pressure; DBP, diastolic blood pressure

*JNC 7

HYPERTENSION

- Diagnostic workup:
  - FBS
  - Urinalysis
  - Serum Creatinine
  - Serum K
  - Lipid profile (HDL, LDL, Total Cholesterol, TG)
  - 12 L-ECG

***NICE 2011**

Initiating Treatment

Age ≥ 60 yrs

- SBP ≥ 150
- DBP ≥ 90

Recommendation 1

In the general population aged ≥60 years, initiate pharmacologic treatment to lower blood pressure (BP) at systolic blood pressure (SBP) ≥150 mm Hg or diastolic blood pressure (DBP) ≥90 mm Hg and treat to a goal SBP <150 mm Hg and goal DBP <90 mm Hg. (Strong Recommendation – Grade A)

Age <60 yrs

- DBP ≥ 90
- SBP ≥ 140

Recommendation 2

In the general population <60 years, initiate pharmacologic treatment to lower BP at DBP ≥90 mm Hg and treat to a goal DBP <90 mm Hg. (For ages 30-59 years, Strong Recommendation – Grade A; For ages 18-29 years, Expert Opinion – Grade E)

Recommendation 3

In the general population <60 years, initiate pharmacologic treatment to lower BP at SBP ≥140 mm Hg and treat to a goal SBP <140 mm Hg. (Expert Opinion – Grade E)

*JNC 8

Initiating Treatment

In the general nonblack population **(ANY)**

- Thiazide-type diuretics
- Calcium channel blocker (CCB)
- ACE inhibitor
- Angiotensin Receptor Blocker (ARB)

In the general black population

- Thizide-type diuretic **OR**
- CCB

Initiating Treatment

Recommendation 8

In the population aged ≥18 years with CKD, initial (or add-on) antihypertensive treatment should include an ACEI or ARB to improve kidney outcomes. This applies to all CKD patients with hypertension regardless of race or diabetes status. (Moderate Recommendation – Grade B)

Age ≥ 18 with CKD

Include an ACEI or ARB to improve kidney outcomes

Treatment Goals

Age ≥ 60 yrs

- SBP <150
- DBP <90

Age <60 yrs

- SBP <140
- DBP <90

Age ≥ 18 w/ CKD

- SBP <140
- DBP <90

Age ≥ 18 w/ DM

- SBP <140
- DBP <90

Modifying treatment

If BP goal is not achieved within 1 month of treatment

Options

- Increase the dose of the initial drug
- Add a second drug

Add a 3rd drug if uncontrolled with 2 drugs

- Do not use an ACEI and ARB combined
- If still uncontrolled with 3 drugs, antihypertensives from other classes can be used
- Referral to a specialist

Lifestyle Modifications in Hypertension

Healthy diet and regular exercise

Reduced alcohol consumption if excessive

Discourage excessive consumption of caffeine-rich products

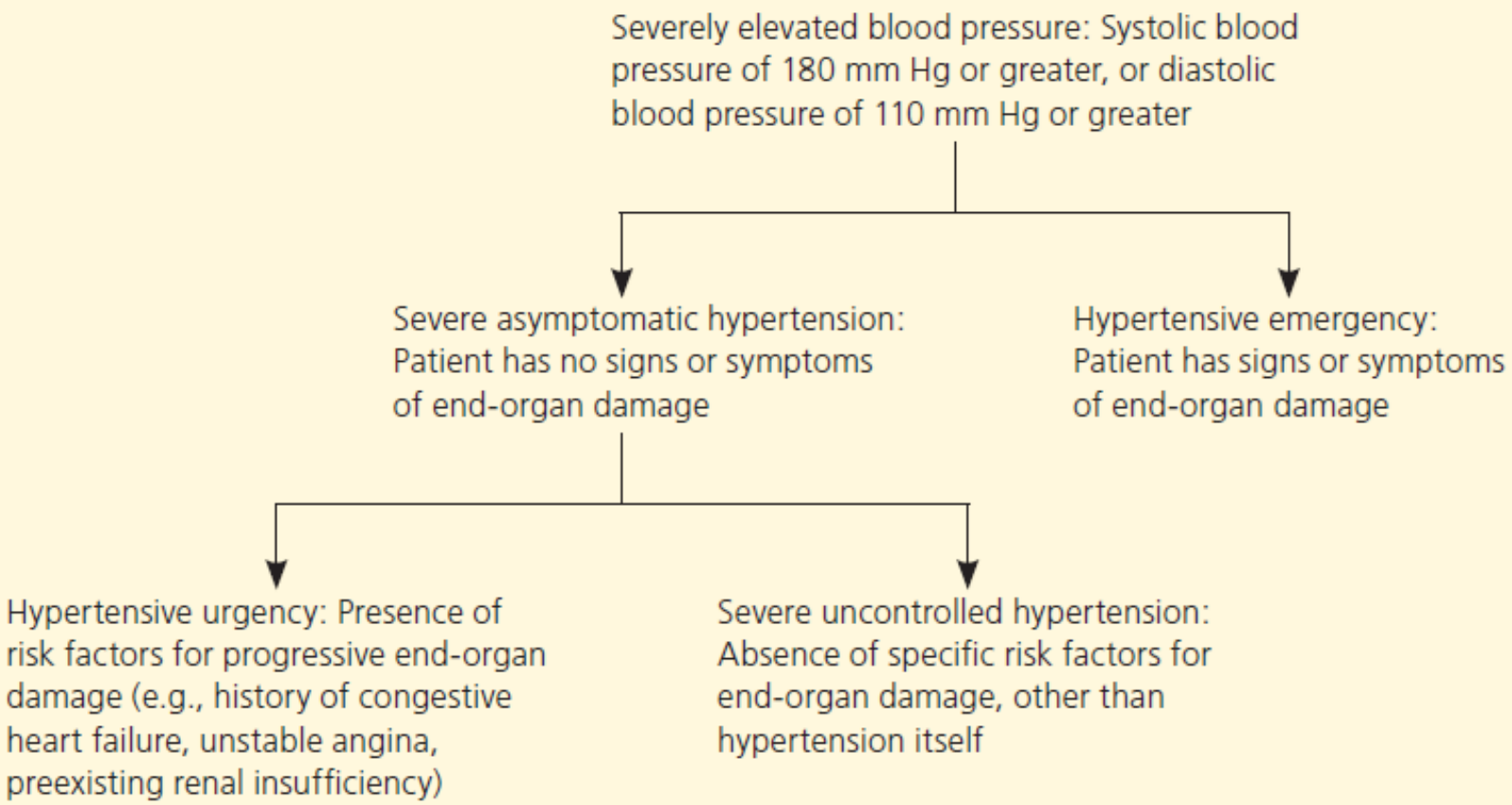
Keep dietary sodium intake low

Smoking cessation

*NICE 2011

Differentiating Uncontrolled Hypertension; Hypertensive Urgency; Hypertensive Emergency

Classification of Severely Elevated Blood Pressure



Risk Factors for end – Organ Damage

- Systolic blood pressure of greater than 160 mm Hg, with diastolic blood pressure of less than 70 mm Hg
- Diabetes mellitus
- Metabolic syndrome
- At least three cardiovascular risk factors (e.g., age older than 55 years for men or 65 years for women, smoking, dyslipidemia, impaired fasting glucose, obesity)
- One or more of the following findings associated with subclinical organ damage:
  - Left ventricular hypertrophy on electrocardiography (particularly with strain) or echocardiography (particularly concentric)
  - Reduced estimated glomerular filtration rate or creatinine clearance
  - Microalbuminuria or proteinuria
- Established cardiovascular or renal disease

Initial Laboratories

If the patient is at low risk of cardiovascular disease,* consider screening for acute renal failure with urinalysis. Check urine toxicology if drug use is suspected.

For a patient with moderate or high cardiovascular risk,* perform urinalysis and a basic metabolic profile.

Consider chest radiography and/or electrocardiography if the patient has clinical signs and symptoms that may suggest end-organ cardiopulmonary damage or cardiac ischemia.

Check hemoglobin levels only if anemia is suspected.

If initiating a new oral antihypertensive agent, particularly one that is renally metabolized, perform a basic metabolic profile to establish baseline renal function (via a calculated creatinine clearance), unless recent test results are available.

Treatment Recommendations

Hypertensive Urgencies

Initiate treatment and follow-up within 24 to 48 hours of presentation.

Initiate a maintenance dose of an oral medication before discharge in patients with SBP of 200 mm Hg or greater, or DBP of 120 mm Hg or greater; this is optional for patients with lower blood pressure.

Consider a short observation period, depending on the patient's risk factors.

Safely discharge the patient, emphasizing the importance of close follow-up.

If follow-up is uncertain and the patient has many risk factors, consider hospitalization for initial therapy.

Treatment Recommendations

Severe Uncontrolled Hypertension

Initiate treatment and follow-up within one to seven days of presentation.

Initiate a maintenance dose of an oral medication before discharge in patients with SBP of 200 mm Hg or greater, or DBP of 120 mm Hg or greater; this is optional for patients with lower blood pressure.

Safely discharge the patient, emphasizing the importance of close follow-up.

Hypertensive Emergency

Hypertensive emergencies are characterized by severe elevations in BP (>180/120 mmHg)

Complicated by evidence of impending or progressive target organ dysfunction

Require immediate BP reduction (not necessarily to normal) to prevent or limit target organ damage

Hypertensive Emergency

Examples

- Hypertensive encephalopathy
- Intracerebral hemorrhage
- Acute MI
- Acute left ventricular failure with pulmonary edema
- Unstable angina pectoris
- Dissecting aortic aneurysm,
- Eclampsia

Hypertensive Emergency

The initial goal of therapy in hypertensive emergencies is to reduce mean arterial BP by no more than 25 percent (within minutes to 1 hour), then if stable, to 160/100–110 mmHg within the next 2–6 hours

Excessive falls in pressure that may precipitate renal, cerebral, or coronary ischemia should be avoided.

DYSLIPIDEMIA

American College of Cardiology/

American Heart Association, 2013

Dyslipidemia

a.k.a High Cholesterol

Abnormal balance of fats (or lipids) circulating in the bloodstream

Manifested as elevation of plasma cholesterol, triglycerides (TGs), or both, or a low high-density lipoprotein level

Lifestyle Modification

- Cornerstone of treatment **prior to** and **in concert with** the use of cholesterol lowering drug therapies

1. Heart healthy diet
2. Regular exercise habits
3. Avoidance of tobacco products
4. Maintenance of a healthy weight

Four Major Statin Benefit Groups

ASCVD risk reduction clearly outweighs the risk of adverse events

1) with *clinical* ASCVD
2) primary elevations of LDL–C >190 mg/dL
3) diabetes aged 40 to 75 years with LDL–C 70 to189 mg/dL and without clinical ASCVD
4) without *clinical* ASCVD or diabetes with LDL–C 70 to189 mg/dL and estimated 10-year ASCVD risk >7.5%

First Statin Benefit Group

- ***Clinical* ASCVD** includes the following patients:

1. Acute coronary syndromes, or a history of MI, stable or unstable angina
2. Coronary or other arterial revascularization
3. Stroke or TIA
4. Peripheral arterial disease presumed to be of atherosclerotic origin

Table 5. High- Moderate- and Low-Intensity Statin Therapy (Used in the RCTs reviewed by the Expert Panel)*

High-Intensity Statin Therapy	Moderate-Intensity Statin Therapy	Low-Intensity Statin Therapy
Daily dose lowers LDL–C on average, by approximately ≥50%	Daily dose lowers LDL–C on average, by approximately 30% to <50%	Daily dose lowers LDL–C on average, by <30%
Atorvastatin (40†)–80 mg **Rosuvastatin 20 *(40)* mg**	**Atorvastatin 10 *(20)* mg** **Rosuvastatin (5) 10 mg** **Simvastatin 20–40 mg‡** **Pravastatin 40 *(80)* mg** **Lovastatin 40 mg** *Fluvastatin XL 80 mg* **Fluvastatin 40 mg bid** *Pitavastatin 2–4 mg*	*Simvastatin 10 mg* **Pravastatin 10–20 mg** **Lovastatin 20 mg** *Fluvastatin 20–40 mg* *Pitavastatin 1 mg*

2013 AHA/ACC Cholesterol Guidelines

- **Four main statin benefit groups**

ASCVD	• Age ≤ 75 – High-intensity statin† • Age > 75 – Moderate-intensity statin
LDL≥190	• High-intensity statin
Age 40-75 with diabetes LDL 70-189	• 10-year risk ≥7.5% - High-intensity statin • 10-year risk <7.5% - Moderate-intensity statin
Age 40-75 without ASCVD or diabetes 10-year risk ≥7.5%	• Moderate- to high-intensity statin

†Consider moderate-intensity statin if high-intensity is contraindicated, or if safety concerns are an issue

Stone NJ et al. *J Am Coll Cardiol* 2014;63(25 Pt B):2889-934.

HUSSON UNIVERSITY

DYSPEPSIA

Dyspepsia: Managing dyspepsia in adults in primary care

North England Dyspepsia Guideline Development Group

2004

DYSPEPSIA

- bloatedness, fullness, gnawing or burning
- epigastric area
- continously or intermittently
- **more than 2 weeks**
- chronic or recurrent
- associated with : anorexia, early satiety, belching, nausea, regurgitation, vomiting
- **with or without alarm symptoms/signs**

DYSPEPSIA: ALARM FEATURES

1. age at onset >55
2. weight loss
3. anemia
4. hematemesis
5. melena
6. hematochezia
7. dysphagia
8. odynophagia
9. persistent vomiting
10. abdominal mass
11. jaundice
12. chronic NSAID intake
13. chronic alcohol intake
14. previous history of ulcer

DYSPEPSIA WITH ALARM

PATIENTS WITH ALARM FEATURES SHOULD UNDERGO UPPER ENDOSCOPY WITHIN 2 WEEKS

DYSPEPSIA: Treatment

Pharmacologic Treatment:

2-4 wks Proton Pump Inhibitors, 1 tab OD pre-breakfast.

NSAIDS should be discontinued

Watch Out For:

increased abdominal pain

alarm symptoms

absence of improvement after >7days of treatment

Proton Pump Inhibitors

- Omeprazole 20 and 40mg OD
- Esomeprazole 20 and 40mg OD
- Pantoprazole 40mg OD
- Rabeprazole 20mg OD
- Lansoprazole 15 and 30 mg OD

DYSPEPSIA: Non-pharmacologic Treatment

- Small frequent feedings
- Avoid skipping meals
- Avoid alcohol, milk, tea, carbonated drinks, coffee, acidic food/beverages
- Avoid smoking
- Head elevation at bedtime
- Last meal should be two hours before bedtime

URINARY TRACT INFECTION

The Philippine Clinical Guidelines on the Diagnosis and Management of Urinary Tract Infections In Adults 2004, The Philippine Clinical Guidelines on the Diagnosis and Management of Urinary Tract Infections In Adults 2013

Uncomplicated Urinary Tract Infection

URINARY TRACT INFECTION

1. Acute Uncomplicated Cystitis
2. Acute Pyelonephritis
3. Asymptomatic Bacteriuria in Adults
4. Urinary Tract Infection in Pregnancy
5. Recurrent Urinary Tract Infection
6. Complicated Urinary Tract Infection
7. Urinary Tract Infection in Males

ACUTE UNCOMPLICATED CYSTITIS

- **Dysuria, frequency or gross hematuria, with or without backpain**
- Without symptoms of vaginitis, pyelonephritis, risk factors for subacute pyelonephritis or complicated UTI
- >100 CFU/mL; ≥5 wbc/hpf
- *Standard urine microscopy is not a prerequisite for treatment.*
- Pre-treatment urine culture and sensitivity is not recommended

ACUTE UNCOMPLICATED CYSTITIS

Nitrofurantoin macrocrystals 100 mg tab
QID for 5 days

OR

Fosfomycin 3g sachet in ½ glass water as
SD (single dose)

ACUTE UNCOMPLICATED CYSTITIS

Alternative treatment:

- Ofloxacin 200 mg BID for 3 days
- Ciprofloxacin 250 mg BID for 3 days
- Levofloxacin 250 mg OD for 3 days
- Co-amoxiclav 625 mg BID for 7 days
- Cefuroxime 250 mg BID for 7 days
- Cefaclor 500 mg TID for 7 days
- Cefixime 200 mg BID for 7 days

ACUTE PYELONEPHRITIS

- **fever (>38C), chills, flank pain, CVA tenderness, nausea, vomiting ±lower UTI symptoms**
- >10,000 CFU/mL; >5 wbc/hpf
- Urinalysis and gram stain are recommended
- *Urine culture and sensitivity should be performed routinely to facilitate cost-effective use of antibiotics*
- A non-pregnant patient without signs/symptoms of sepsis, adherent to treatment and likely to follow-up may be treated as outpatient.

ACUTE PYELONEPHRITIS

INDICATIONS FOR ADMISSION:

1. inability to maintain oral hydration or take medications
2. concern about compliance
3. Presence of possible complicating conditions
4. severe illness with high fever, severe pain, marked debilit and signs of sepsis

ACUTE PYELONEPHRITIS

Ceftriaxone 1 g IM/IV as single dose

PLUS

Oral medication

ACUTE PYELONEPHRITIS

	DRUG	DOSAGE	DURATION
High resistance rates to TMP-SMZ, thus it is no longer recommended for empiric treatment; can ONLY be used when the organism is susceptible to it on culture and sensitivity test. Aminopenicillins (amoxicillin or ampicillin) not recommended.	OFLOXACIN	400 mg BID	14 days
	CIPROFLOXACIN	500 mg BID	7-10 days
	LEVOFLOXACIN	250 mg OD	7-10 days

ASYMPTOMATIC BACTERIURIA IN ADULTS

• > 100,000 cfu/ml of one or more uropathogens in two (2) consecutive midstream urine specimen or in one catheterized urine specimen in the *absence of symptoms attributable to UTI.*

<u>Screening:</u>

- prior to genitourinary manipulation or instrumentation
- post-renal transplant patients up to the first six months
- diabetic patients with poor glycemic control
- ALL pregnant women

ASYMPTOMATIC BACTERIURIA IN ADULTS

- Any antibiotics for AUC can be used for treatment of ASB in the above group of patients

- *7-14 day course is recommended,* ***except for pregnant women.***

- Routine screening and treatment is not recommended for healthy adults. **URINE CULTURE** is the recommended screening test, but urine microscopy and gram stain may be used in the absence of culture.

UTI IN PREGNANCY

- > 100,000 cfu/ml of one or more uropathogens in 2 consecutive midstream urine specimen or in one catheterized urine specimen *in the absence of symptoms attributable to UTI.*

- ***Must be screened on their first prenatal visit between 9-17 wks AOG.***

- **URINE CULTURE** of clean catch midstream urine is the test of choice.

UTI IN PREGNANCY

- Antibiotic treatment must be initiated upon diagnosis

- Follow-up cultures one week after completing the course of treatment.

- Treatment
  - Nitrofurantoin (*not for those near term*)
  - Co-amoxiclav and cephalexin
  - Cotrimoxazole (*not in the 1st and 3rd trimester*)

RECURRENT UTI

- Episodes of acute uncomplicated UTI documented by **urine culture occurring >2x/yr** in a non-pregnant woman without known urinary tract abnormality

- Treatment of individual episodes: *7-day treatment*

- Prophylaxis (continuous and post-coital)

RECURRENT UTI: PROPHYLAXIS

	LOW DOSE DAILY	SINGLE DOSE
NORFLOXACIN	200 mg HS	200 mg
TMP-SMZ	40/200 mg HS	40/200 mg
CIPROFLOXACIN	125 mg HS	125 mg
OFLOXACIN	---------	100 mg

COMPLICATED UTI

1. Presence of indwelling catheter or intermittent catheterization
2. Incomplete emptying of the bladder with >100 ml retained urine post-voiding
3. Obstructive uropathy due to bladder outlet obstruction, calculus and other causes
4. Renal transplant
5. Diabetes Mellitus
6. UTI in males, except in young males presenting exclusively with lower UTI symptoms

COMPLICATED UTI

- significant bacteriuria is >100,000 cfu/ml
- Urine sample for gram stain, culture and sensitivity testing pre-treatment is a MUST
- Recommendation for *mild to moderate illness*:

  oral fluoroquinolones for 7-14 days
- A repeat urine culture after one to two weeks of

COMPLICATED UTI

DRUG	DOSAGE	DURATION
NORFLOXACIN	400 mg BID	14 days
OFLOXACIN	200 mg BID	14 days
CIPROFLOXACIN	250-500 mg BID	14 days
LEVOFLOXACIN	250-500 mg OD	10 - 14 days

UTI IN MALES

- Generally considered **complicated.**
- However, the *1st episode of symptomatic LUTS* occurring in young (*15-40 years old*) otherwise healthy sexually active men with no clinical or historical evidence of structural or functional urologic abnormality is considered **uncomplicated UTI**.

UTI IN MALES

- Significant pyuria is >5wbc/hpf in a clean catch midstream urine specimen.
- TREATMENT: 7-day antibiotic regimen of TMP-SMZ or Fluoroquinolones may be used.

BRONCHIAL ASTHMA

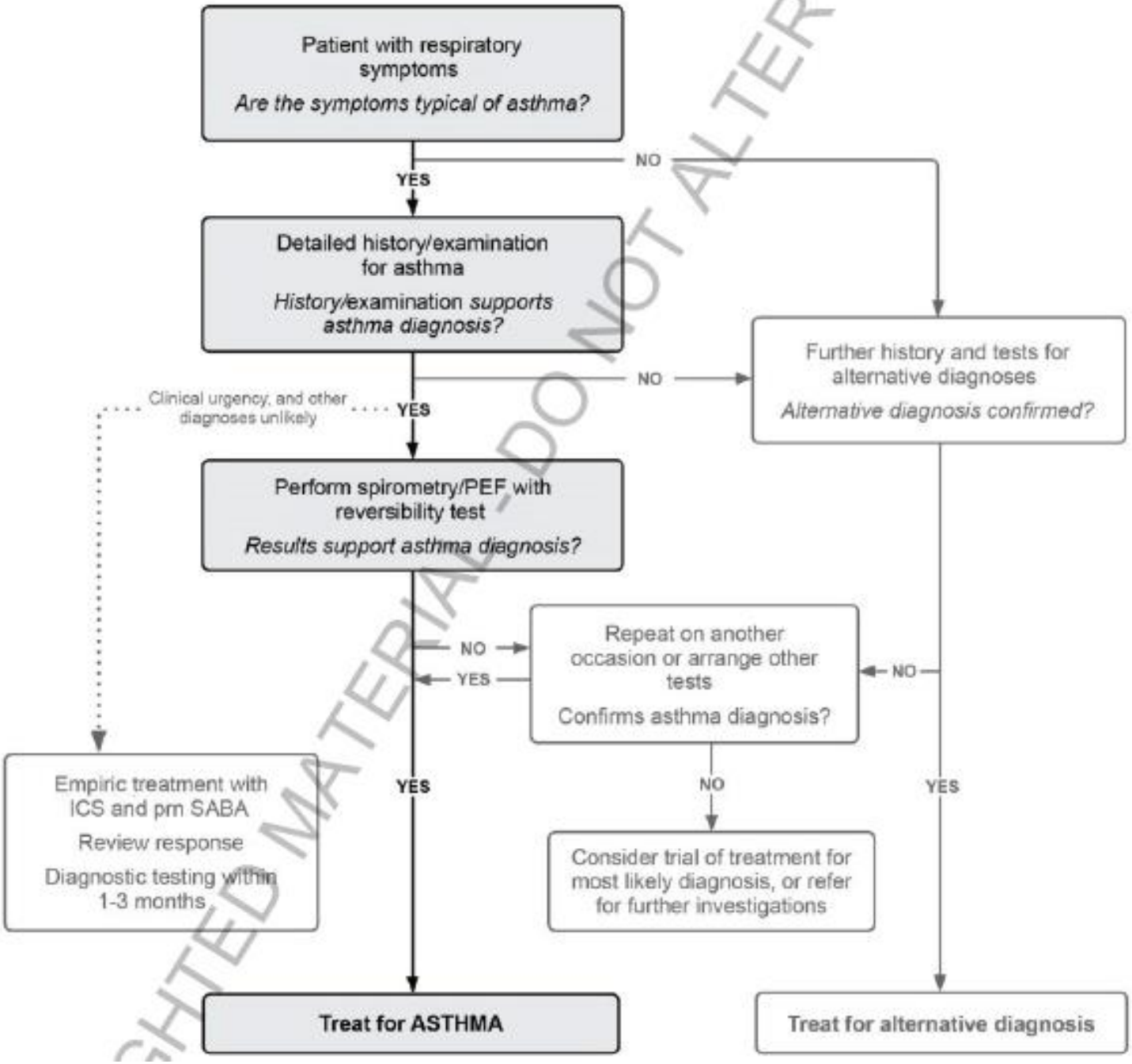
Global Strategy for Asthma Management and Prevention, Global Initiative for Asthma (GINA) 2014

ASTHMA:

Disease with many variations usually characterized by chronic airway infalmmation

2 key defining features

- A history of respirstory symptoms such as wheeze, shortness of breath, chest tightness and cough that vary over time and in intentsity AND
- Variable expiratory airflow limitation



ASSESSING ASTHMA CONTROL

A. Level of asthma symptom control				
In the past 4 weeks, has the patient had:		**Well controlled**	**Partly controlled**	**Uncontrolled**
Daytime symptoms more than twice/week?	Yes☐ No☐			
Any night waking due to asthma?	Yes☐ No☐	None	1–2	3–4
Reliever needed* more than twice/week?	Yes☐ No☐	of these	of these	of these
Any activity limitation due to asthma?	Yes☐ No☐			

ASSESSING ASTHMA CONTROL

B. Risk factors for poor asthma outcomes

Assess risk factors at diagnosis and periodically, particularly for patients experiencing exacerbations.

Measure FEV_1 at start of treatment, after 3–6 months of controller treatment to record personal best lung function, then periodically for ongoing risk assessment.

Potentially modifiable independent risk factors for exacerbations include:

- Uncontrolled asthma symptoms (as above)
- ICS not prescribed; poor ICS adherence; incorrect inhaler technique
- Excessive SABA use (>1x200-dose canister/month)
- Low FEV_1, especially if <60% predicted
- Major psychological or socioeconomic problems
- Exposures: smoking; allergen exposure if sensitized
- Comorbidities: obesity; rhinosinusitis; confirmed food allergy
- Sputum or blood eosinophilia
- Pregnancy

Other major independent risk factors for flare-ups (exacerbations) include:

- Ever being intubated or in intensive care for asthma
- Having 1 or more severe exacerbations in the last 12 months.

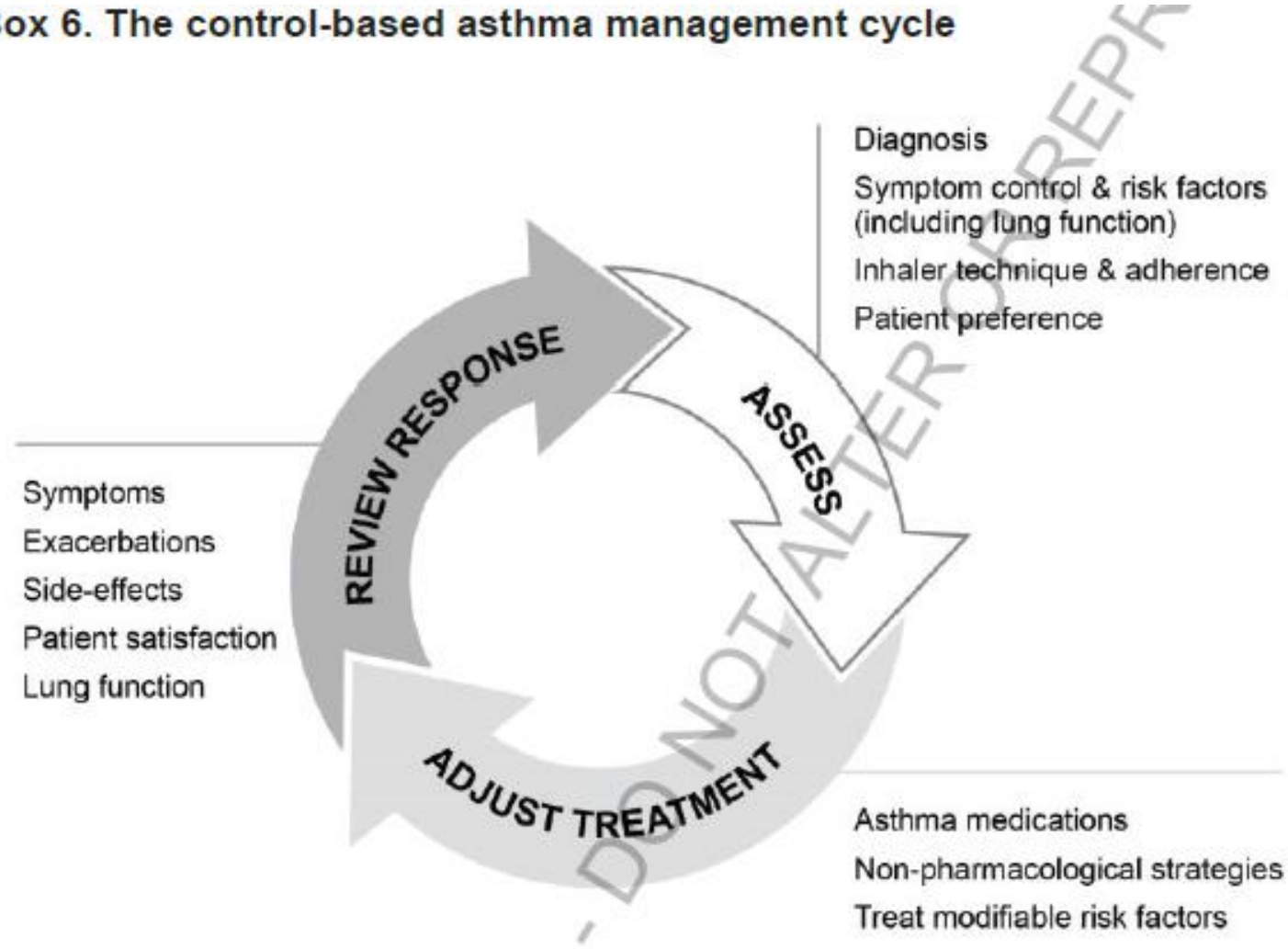
Having one or more of these risk factors increases the risk of exacerbations even if symptoms are well controlled.

Risk factors for developing fixed airflow limitation include lack of ICS treatment; exposure to tobacco smoke, noxious chemicals or occupational exposures; low FEV_1; chronic mucus hypersecretion; and sputum or blood eosinophilia

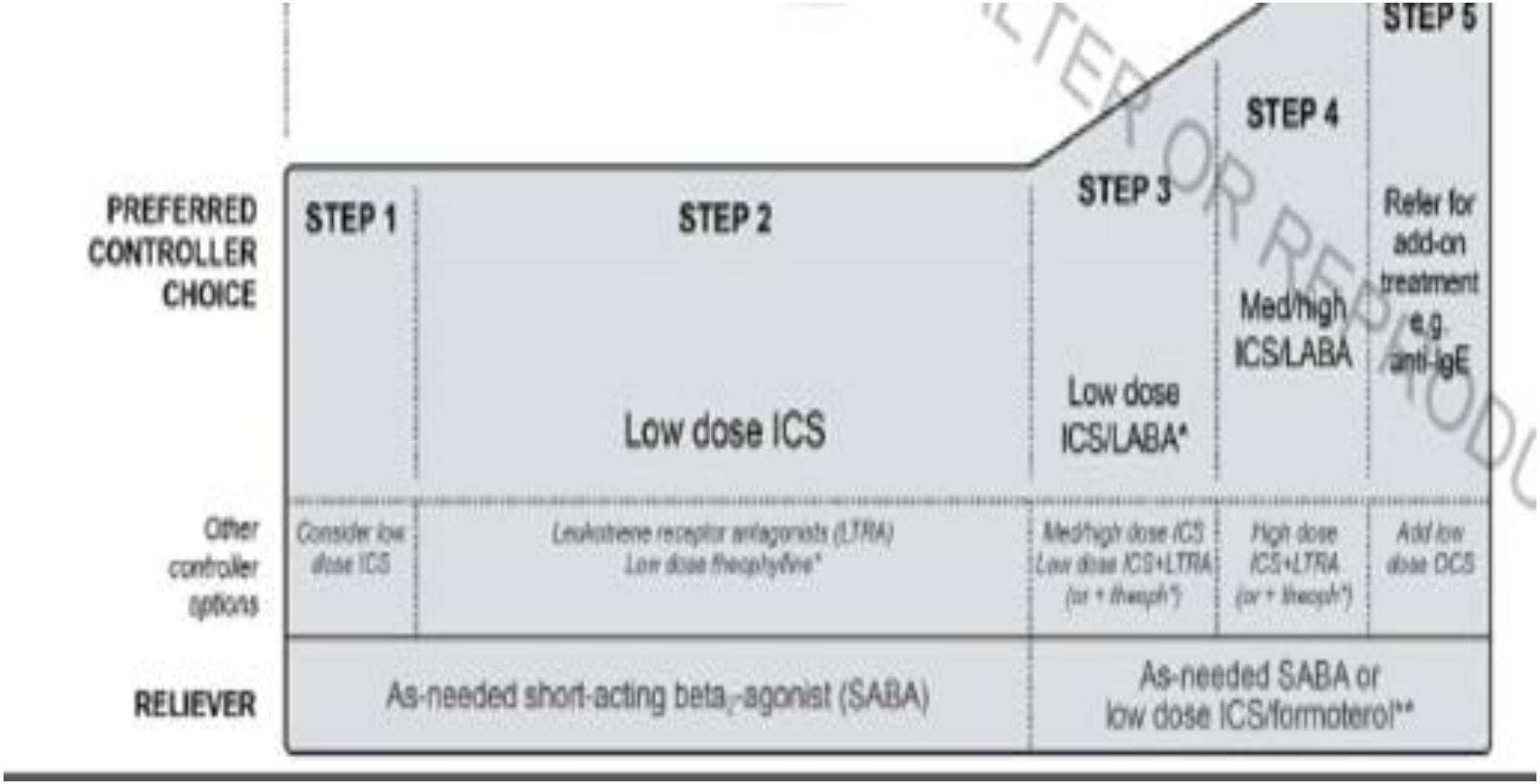
Risk factors for medication side-effects include:

- *Systemic*: frequent OCS; long-term, high dose and/or potent ICS; also taking P450 inhibitors
- *Local*: high-dose or potent ICS; poor inhaler technique

Box 6. The control-based asthma management cycle



Management


STEP 5
STEP 4
STEP 3
STEP 2
STEP 1
PREFERRED CONTROLLER CHOICE
Refer for add-on treatment e.g. anti-IgE
Med/high ICS/LABA
Low dose ICS/LABA*
Low dose ICS
Other controller options
Consider low dose ICS
Leukotriene receptor antagonists (LTRA)
Low dose theophylline*
Med/high dose ICS
Low dose ICS+LTRA
(or + theoph*)
High dose ICS+LTRA
(or + theoph*)
Add low dose OCS
RELIEVER
As-needed short-acting beta2-agonist (SABA)
As-needed SABA or
low dose ICS/formoterol**

PULMONARY TUBERCULOSIS

National Tuberculosis Control Program

Manual of Procedures (5th Edition)

PRESUMPTIVE PTB

For patients **15 years old and above**, a presumptive TB has any of the following:

i. Cough of at least 2 weeks duration with or without the following symptoms:
   - Significant and unintentional weight loss,
   - Fever,
   - Bloody sputum (hemoptysis),
   - Chest/back pains not referable to any musculoskeletal disorders,
   - Easy fatigability or malaise,
   - Night sweats, and
   - Shortness of breath or difficulty of breathing;

ii. Unexplained Cough of any duration in: 1) a close contact of a known active TB case; 2) high-risk clinical groups (HIV/AIDS, diabetes, end-stage renal disease, cancer, connective tissue diseases, autoimmune diseases,

PRESUMPTIVE PTB

For patients **below 15 years old**, a presumptive PTB has any of the following:

i. at least three (3) of the following clinical criteria:
   - Coughing/wheezing of 2 weeks or more, especially if unexplained;
   - Unexplained fever of 2 weeks or more after common causes such as malaria or pneumonia have been excluded;
   - Loss of weight/ failure to gain weight/ weight faltering/ loss of appetite;
   - Failure to respond to 2 weeks of appropriate antibiotic therapy for lower respiratory tract infection;
   - Failure to regain previous state of health 2 weeks after a viral infection or exanthema (e.g., measles); and,
   - Fatigue, reduced playfulness, or lethargy (child has lost his/her normal energy)

ii. ANY one of the above signs and symptoms (clinical criteria) in a child who is a close contact of a known active TB case.

PRESUMPTIVE PTB

Chest x- ray Finding of PTB with or without symptoms irregardless of age

Presumptive PTB cases should undergo sputum microscopy /tuberculin test (childen)

CATEGORIES of PTB BASED ON HISTORY OF PREVIOUS TREATMENT

Table No. 9 - TB Disease Registration Groups

Registration Group		Definition of Terms
New		A patient who has never had treatment for TB* or who has taken anti-TB drugs for less than one (<1) month.
Retreatment	Relapse	A patient previously treated for TB, who has been declared cured or treatment completed in their most recent treatment episode, and is presently diagnosed with bacteriologically-confirmed or clinically-diagnosed TB.
	Treatment After Failure	A patient who has been previously treated for TB and whose treatment failed at the end of their most recent course. *(See definition of Failed treatment outcome in Section H)*; This includes: • A patient whose sputum smear or culture is positive at 5 months or later during treatment. • A clinically-diagnosed patient (e.g., child or EPTB) for whom sputum examination cannot be done and who does not show clinical improvement anytime during treatment.
	Treatment After Lost to Follow-up (TALF)	A patient who was previously treated for TB but was lost to follow-up for two months or more in their most recent course of treatment and is currently diagnosed with either bacteriologically-confirmed or clinically-diagnosed TB.
	Previous Treatment Outcome Unknown (PTOU)	Patients who have been previously treated for TB but whose outcomes after their most recent course of treatment are unknown or undocumented.
Other		Patients who do not fit into any of the categories listed above.

CLASSIFICATION

Classifications of TB Disease[16]

1. **Classification based on bacteriological status**

   a. **Bacteriologically-confirmed** – A TB patient from whom a biological specimen is positive by smear microscopy, culture or rapid diagnostic tests (such as Xpert MTB/RIF).

   b. **Clinically-diagnosed** – A PTB patient who does not fulfill the criteria for bacteriological confirmation but has been diagnosed with active TB by a clinician or other medical practitioner who has decided to give the patient a full course of TB treatment. This definition includes cases diagnosed on the basis of CXR abnormalities or suggestive histology, and extra-pulmonary cases without laboratory confirmation.

CLASSIFICATION

2. **Classification based on anatomical site**

   a. **Pulmonary TB (PTB)** – Refers to a case of tuberculosis involving the lung parenchyma. A patient with both pulmonary and extra-pulmonary TB should be classified as a case of pulmonary TB.

   b. **Extra-pulmonary TB (EPTB)** – Refers to a case of tuberculosis involving organs other than the lungs (e.g., larynx, pleura, lymph nodes, abdomen, genito-urinary tract, skin, joints and bones, meninges). Histologically-diagnosed EPTB through biopsy of appropriate sites will be considered clinically-diagnosed TB. Laryngeal TB, though likely sputum smear-positive, is considered an extra-pulmonary case in the absence of lung infiltrates on CXR.

CLASSIFICATION

Table No. 6 - TB Disease Classification Based on Anatomical Site and Bacteriological Status

Anatomical Site	Bacteriological status	Definition of Terms	
	Bacteriologically-confirmed	Smear-positive	A patient with at least one (1) sputum specimen positive for AFB, with or without radiographic abnormalities consistent with active TB
		Culture-positive	A patient with positive sputum culture for MTB complex, with or without radiographic abnormalities consistent with active TB
		Rapid diagnostic test-positive	A patient with sputum positive for MTB complex using rapid diagnostic modalities such as Xpert MTB/RIF, with or without radiographic abnormalities consistent

CLASSIFICATION

		consistent
Pulmonary (PTB)	Clinically-diagnosed	A patient with two (2) sputum specimens negative for AFB or MTB, or with smear not done due to specified conditions but with radiographic abnormalities consistent with active TB; and there has been no response to a course of empiric antibiotics and/ or symptomatic medications; and who has been decided (either by the physician and/or TBDC) to have TB disease requiring a full course of anti-TB chemotherapy **OR** A child (less than 15 years old) with two (2) sputum specimens negative for AFB or with smear not done, who fulfills three (3) of the five (5) criteria for disease activity (i.e., signs and symptoms suggestive of TB, exposure to an active TB case, positive tuberculin test, abnormal chest radiograph suggestive of TB, and other laboratory findings suggestive of tuberculosis); and who has been decided (either by the physician and/or TBDC) to have TB disease requiring a full course of anti-TB chemotherapy **OR** A patient with laboratory or strong clinical evidence for HIV/AIDS with two (2) sputum specimens negative for AFB or MTB or with smear not done due to specified conditions but who, regardless of radiographic results, has been decided (either by physician and/or TBDC) to have TB disease requiring a full course of anti-TB chemotherapy.

CLASSIFICATION

Extra-pulmonary (EPTB)	Bacteriologically-confirmed	A patient with a smear/culture/rapid diagnostic test from a biological specimen in an extra-pulmonary site (i.e., organs other than the lungs) positive for AFB or MTB complex
	Clinically-diagnosed	A patient with histological and/or clinical or radiologic evidence consistent with active extra-pulmonary TB and there is a decision by a physician to treat the patient with anti-TB drugs

TREATMENT: WHO REGIMEN

WHO Category	TB Patients	Initial Phase	Cont. Phase
I	New Smear (+) PTB; New smear (-) PTB w/ extensive parenchymal involvement; New cases of severe form of extrapulmonary TB	2 HRZE	4HR
II	Sputum smear(+); Relapse; Treatment failure; Treatment after interruption	2HRZES and 1HRZE	5HRE
III	New smear(-) PTB (other than Category I patients); New less severe forms of extrapulmonary TB	2HRZE	4HR

TREATMENT: DOH REGIMEN

Table No. 10 - Recommended Treatment Regimen for Adults and Children[24, 25]

Category of Treatment	Classification and Registration Group	Treatment Regimen
Category I	Pulmonary TB, new (whether bacteriologically-confirmed or clinically-diagnosed) Extra-pulmonary TB, new (whether bacteriologically-confirmed or clinically-diagnosed) except CNS/ bones or joints	2HRZE/4HR
Category Ia	Extra-pulmonary TB, new (CNS/bones or joints)	2HRZE/10HR

*Legend: R - Rifampicin, I - Isoniazid, S - Streptomycin, Z - Pyrazinamide, Km - Kanamycin. Lfx - Levofloxacin, Pto - Prothionamide. C - Cycloserine. *Note: In TB meningitis among adults, ethambutol should be replaced by Streptomycin.*

TREATMENT: DOH REGIMEN

Category II	Pulmonary or extra-pulmonary, Previously treated drug-susceptible TB (whether bacteriologically-confirmed or clinically-diagnosed) • Relapse • Treatment After Failure • Treatment After Lost to Follow-up (TALF) • Previous Treatment Outcome Unknown • Other	2HRZES/1HRZE /5HRE
Category IIa	Extra-pulmonary, Previously treated drug-susceptible TB (whether bacteriologically-confirmed or clinically-diagnosed – CNS/bones or joints)	2HRZES/1HRZE /9HRE
Standard Regimen Drug-resistant (SRDR)	Rifampicin-resistant TB or Multidrug-resistant TB	ZKmLfxPtoCs • Individualized once DST result is available • Treatment duration for at least 18 months
XDR-TB Regimen	Extensively drug-resistant TB	Individualized based on DST result and history of previous treatment

TREATMENT: ADVERSE REACTION MANAGEMENT

Table No. 15 - Guide in Managing Adverse Reactions to Anti-TB Drugs

Adverse Reactions	Drug(s) probably responsible	Management
Minor		
1. Gastro-intestinal intolerance	Rifampicin/Isoniazid/ Pyrazinamide	Give drugs at bedtime or with small meals.
2. Mild or localized skin reactions	Any kind of drugs	Give anti-histamines.
3. Orange/red colored urine	Rifampicin	Reassure the patient.
4. Pain at the injection site	Streptomycin	Apply warm compress. Rotate sites of injection.
5. Burning sensation in the feet due to peripheral neuropathy	Isoniazid	Give Pyridoxine (Vitamin B6): 50-100 mg daily for treatment, 10 mg daily for prevention.
6. Arthralgia due to hyperuricemia	Pyrazinamide	Give aspirin or NSAID. If symptoms persist, consider gout and request for blood chemistry (uric acid determination) and manage accordingly.
7. Flu-like symptoms (fever, muscle pains, inflammation of the respiratory tract)	Rifampicin	Give antipyretics.

TREATMENT: SIDE EFFECTS

Major		
1. Severe skin rash due to hypersensitivity	Any kind of drugs (especially Streptomycin)	Discontinue anti-TB drugs and refer to appropriate specialist.
2. Jaundice due to hepatitis	Any kind of drugs (especially Isoniazid, Rifampicin, and Pyrazinamide)	Discontinue anti-TB drugs and refer to appropriate specialist. If symptoms subside, resume treatment and monitor clinically.
3. Impairment of visual acuity and color vision due to optic neuritis	Ethambutol	Discontinue Ethambutol and refer to an ophthalmologist.
4. Hearing impairment, ringing of the ear, and dizziness due to damage of the eighth cranial nerve	Streptomycin	Discontinue Streptomycin and refer to appropriate specialist .
5. Oliguria or albuminuria due to renal disorder	Streptomycin/ Rifampicin	Discontinue anti-TB drugs and refer to appropriate specialist.
6. Psychosis and convulsion	Isoniazid	Discontinue Isoniazid and refer to appropriate specialist.
7. Thrombocytopenia, anemia, shock	Rifampicin	Discontinue anti-TB drugs and refer to appropriate specialist

Recommended dosages

Drug	Adults[25]	Children[26]
Isoniazid (H)	5 (4-6) mg/kg, not to exceed 400mg daily	10 (10-15) mg/kg, not to exceed 300mg daily
Rifampicin (R)	10 (8-12) mg/kg, not to exceed 600mg daily	15 (10-20) mg/kg, not to exceed 600mg daily
Pyrazinamide (Z)	25 (20-30) mg/kg, not to exceed 2g daily	30 (20-40) mg/kg, not to exceed 2g daily
Ethambutol (E)	15 (15-20) mg/kg, not to exceed 1.2g daily	20 (15-25) mg/kg, not to exceed 1.2g daily
Streptomycin (S)	15 (12-18) mg/kg, not to exceed 1g daily	30 (20-40) mg/kg, not to exceed 1g daily

DIABETES MELLITUS

ExStandards of Medical Care in Diabetes 2015.

DIABETES MELLITUS: Classification

Type 1 diabetes	results from β-cell destruction, usually leading to absolute insulin deficiency
Type 2 diabetes	results from progressive insulin secretory defect on the background of insulin resistance
Specific types of diabetes due to other causes	e.g., monogenic diabetes syndromes (such as neonatal diabetes), diseases of the exocrine pancreas (such as cystic fibrosis), and drug- or chemical-induced diabetes
Gestational diabetes mellitus	diabetes diagnosed in the second or third trimester of pregnancy that is not clearly overt diabetes

DIABETES: Criteria for Diagnosis

TABLE 2. Criteria for the Diagnosis of Prediabetes and Diabetes

	Prediabetes	Diabetes
A1C	5.7–6.4%	≥6.5%
FPG	100–125 mg/dL (5.6–6.9 mmol/L)	≥126 mg/dL (7.0 mmol/L)
OGTT	140–199 mg/dL (7.8–11.0 mmol/L)	≥200 mg/dL (11.1 mmol/L)*
RPG		≥200 mg/dL (11.1 mmol/L)†

**In the absence of unequivocal hyperglycemia, results should be confirmed by repeat testing.*

† Only diagnostic in a patient with classic symptoms of hyperglycemia or hyperglycemic crisis. RPG, random plasma glucose.

DIABETES: Screening in Adults

Testing should be considered in adults who are overweight (BMI ≥25 kg/m^2 or ≥23 kg/m^2 in Asian Americans) and have additional risk factors:

- Physical inactivity
- First-degree relative with diabetes
- High-risk race/ethnicity (e.g., African American, Latino, Native American, Asian American, Pacific Islander)
- Women who delivered a baby weighing >9 lb or were diagnosed with GDM
- Hypertension (≥140/90 mmHg or on therapy for hypertension)
- HDL cholesterol level <35 mg/dL (0.90 mmol/L) and/or a triglyceride level >250 mg/dL (2.82 mmol/L)
- Women with polycystic ovary syndrome
- A1C ≥5.7%, IGT, or IFG on previous testing
- Other clinical conditions associated with insulin resistance (e.g., severe obesity, acanthosis nigricans)
- History of CVD

DIABETES MELLITUS: Evaluation

Medical history

- Age and characteristics of onset of diabetes (e.g., diabetic ketoacidosis, asymptomatic laboratory finding)
- Eating patterns, physical activity habits, nutritional status, and weight history; growth and development in children and adolescents
- Presence of common comorbidities, psychosocial problems, and dental disease
- Diabetes education history
- Review of previous treatment regimens and response to therapy (A1C records)
- Current treatment of diabetes, including medications, medication adherence and barriers thereto, meal plan, physical activity patterns, and readiness for behavior change
- Results of glucose monitoring and patient's use of data
- Diabetic ketoacidosis frequency, severity, and cause
- Hypoglycemic episodes
  - Hypoglycemia awareness
  - Any severe hypoglycemia: frequency and cause
- History of diabetes-related complications
  - Microvascular: retinopathy, nephropathy, neuropathy (sensory, including history of foot lesions; autonomic, including sexual dysfunction and gastroparesis)
  - Macrovascular: coronary heart disease, cerebrovascular disease, and peripheral arterial disease

DIABETES MELLITUS: Evaluation

Physical examination

- Height, weight, BMI
- Blood pressure determination, including orthostatic measurements when indicated
- Fundoscopic examination
- Thyroid palpation
- Skin examination (for acanthosis nigricans and insulin injection sites)
- Comprehensive foot examination
  - Inspection
  - Palpation of dorsalis pedis and posterior tibial pulses
  - Presence/absence of patellar and Achilles reflexes
  - Determination of proprioception, vibration, and monofilament sensation

DIABETES MELLITUS: Evaluation

Laboratory evaluation

- A1C, if results not available within past 3 months
- If not performed/available within past year
  - Fasting lipid profile, including total, LDL, and HDL cholesterol and triglycerides, as needed
  - Liver function tests
  - Test for urine albumin excretion with spot urine albumin-to-creatinine ratio
  - Serum creatinine and calculated glomerular filtration rate
  - TSH in type 1 diabetes, dyslipidemia, or women over age 50 years

DIABETES MELLITUS: Evaluation

Referrals

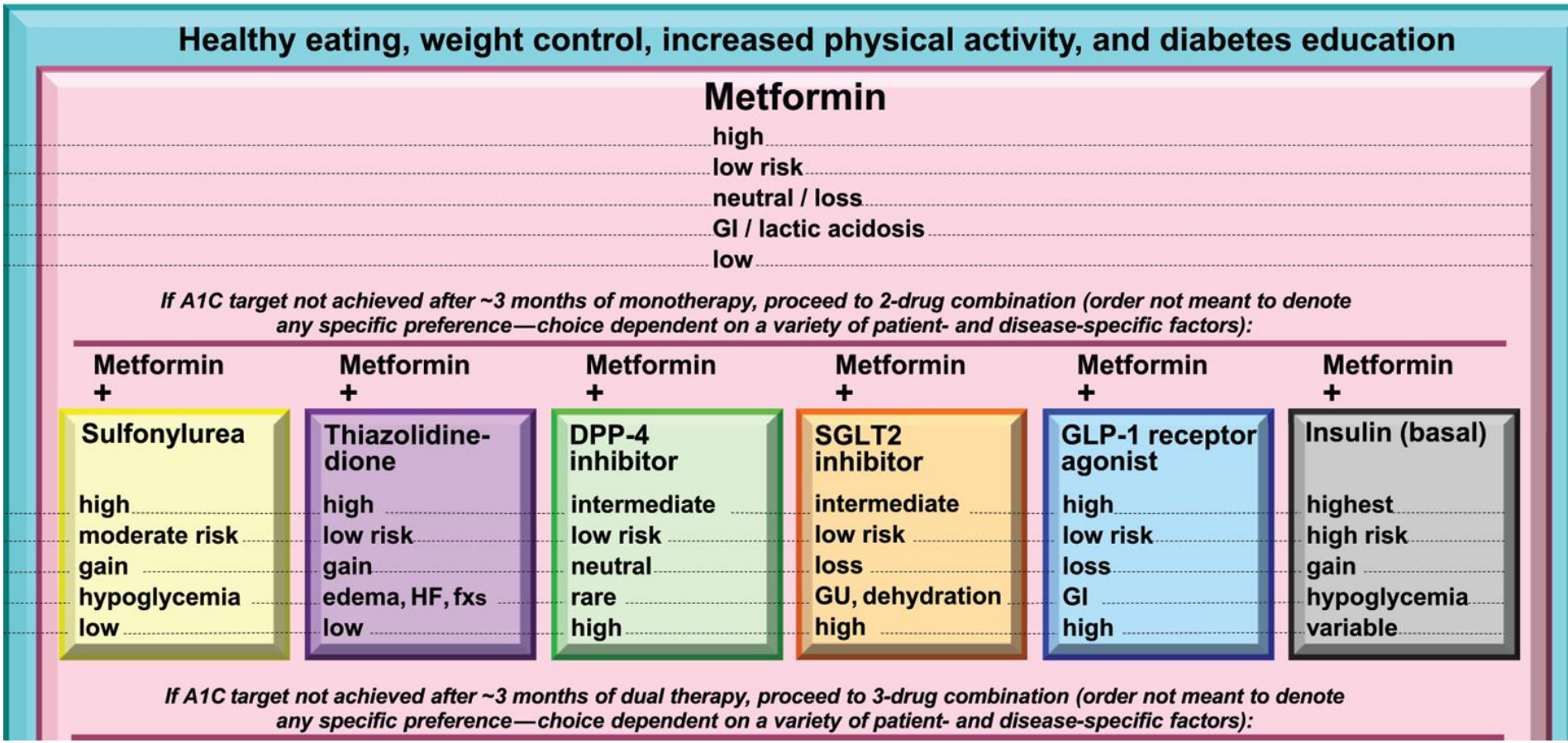
- Eye care professional for annual dilated eye exam
- Family planning for women of reproductive age
- Registered dietitian for medical nutrition therapy
- DSME/DSMS
- Dentist for comprehensive periodontal examination
- Mental health professional, if needed

DIABETES MELLITUS: Glycemic Control

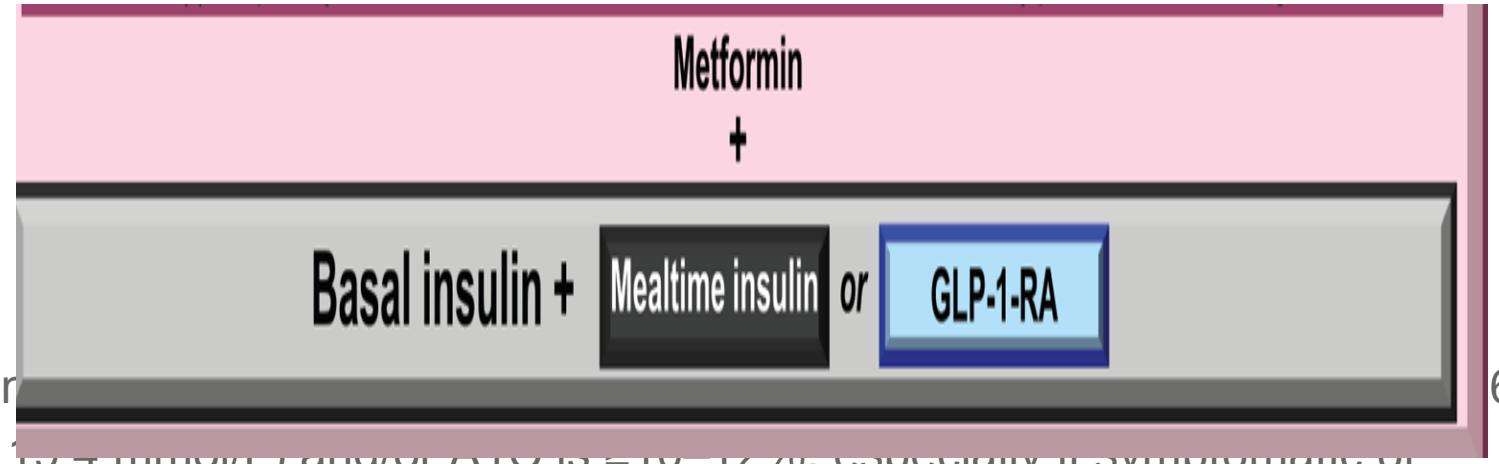
A1C	<7.0%*
Preprandial capillary plasma glucose	80–130 mg/dL* (4.4–7.2 mmol/L)
Peak postprandial capillary plasma glucose†	<180 mg/dL* (<10.0 mmol/L)

Goals should be individualized based on duration of diabetes, age/life expectancy, comorbid conditions, known CVD or advanced microvascular complications, hypoglycemia unawareness, and individual patient considerations

DIABETES MELLITUS: Treatment



DIABETES MELLITUS: Treatment



Cor… 6.7–
15.4 mmol/L) and/or A1C is ≥10–12%, especially if symptomatic or catabolic features are present, in which case insulin + mealtime is the preferred initial regimen

DIABETES MELLITUS: Treatment

Drug	Compound	Action
Biguanide	Metformin	↓ Hepatic glucose production ↓ Intestinal glucose absorption ↑ Insulin action
Sulfonylureas (2nd gen)	Glibenclamide Gliclazide	↑ Insulin secretion
Meglitinides	Repaglinide	↑ Insulin secretion
Thiazolidinediones	Pioglitazone	↑ Peripheral insulin sensitivity
α-Glucosidase inhibitors	Acarbose Miglitol	Slows intestinal carbohydrate digestion

DIABETES MELLITUS

A. OBESE PATIENTS

BIGUANIDES

- Metformin 500mg OD, BID, TID
- Optimal dose 1,500mg/day
- Starting dose: 500mg BID after meals

DIABETES MELLITUS

B. ELDERLY (>60 YEARS)

SULFONYLUREAS

Glipizide 2.5-30 mg OD or in divided doses

Gliclazide 80-240 mg OD or in divided doses

Glimepiride 1-4mg/day OD

DIABETES MELLITUS

ACE inhibitors and ARBs provide selective benefit in slowing decline in GFR in patients with higher levels of albuminuria

Two of three specimens collecte within a 3- to 6-month period should be abnormal before considerin a patient to have developed albuminuria

DIABETES MELLITUS

- **Low-dose aspirin** (75–162 mg/day) for primary prevention is reasonable for most men over age 50 years and most women over age 60 years with one or more major risk factors (smoking, hypertension, dyslipidemia, family history of premature CVD, and albuminuria).

Vaccination

Annually provide an influenza vaccine to all patients with diabetes ≥6 months of age.

Administer pneumococcal polysaccharide vaccine 23 (PPSV23) to all patients with diabetes ≥2 years of age.

Adults ≥65 years of age, if not previously vaccinated, should receive pneumococcal conjugate vaccine 13 (PCV13), followed by PPSV23 6–12 months after initial vaccination.

Vaccination

Adults ≥65 years of age, if previously vaccinated with PPSV23, should receive a follow-up ≥12 months with PCV13.

Administer hepatitis B vaccination to unvaccinated adults with diabetes who are aged 19–59 years.

COMMUNITY-ACQUIRED PNEUMONIA

Philippine Clinical Practice Guidelines on the Diagnosis, Empiric Management, and Prevention of Community-Acquired Pneumonia (CAP) in Immunocompetent Adults 2016 Update

COMMUNITY-ACQUIRED PNEUMONIA

acquired in the community within **24 hours to less than 2 weeks.**

acute cough, abnormal vital signs of tachypnea (respiratory rate >20 breaths per minute), **tachycardia** (cardiac rate >100/minute), and **fever** (temperature >37.8ºC) with at least one **abnormal chest finding of diminished breath sounds, rhonchi, crackles, or wheeze.**

COMMUNITY-ACQUIRED PNEUMONIA

Clinical findings: 60-76% predictability

Uncommon presentations of CAP (i.e., minimal physical findings and extrapulmonary symptoms)

CAP: Chest Radiograph

A *new parenchymal infiltrate* in the **chest radiograph** remains the reference. CXR is a diagnostic standard for pneumonia.

A CXR may **not be** routinely done in patients strongly suspected to have CAP with the following conditions:

- Healthy individuals or those with stable co-morbid conditions, **and**
- Normal vital signs and physical examination findings, **and**

CLINICAL FEATURES OF PATIENTS WITH CAP ACCORDING TO RISK CATEGORIES

Low-risk CAP	Moderate-risk CAP	High-risk CAP
Presence of:	Any of the following:	Any of the criteria under moderate- risk CAP category **plus**
Stable vital signs; RR <30 breaths/min • PR <125 beats/min • Temp >36 °C or <40 °C • SBP ≥90 mmHg • DBP >60 mmHg	Unstable vital signs: RR ≥30 breaths/min • PR ≥125 beats/min • Temp ≥40°C or ≤36°C • SBP <90 mmHg, • DBP ≤60 mmHg	Severe Sepsis and Septic shock
No altered mental state of acute onset	altered mental state of acute onset	Need for mechanical ventilation
No suspected aspiration	Suspected aspiration	
No or stable comorbid conditions	Decompensated co-morbid condition	
Chest X-ray: - localized infiltrates - no evidence of pleural effusion, abscess	Chest X-ray: - multilobar infiltrates - pleural effusion or abscess	

Co-morbidities:

Chronic Obstructive Pulmonary diease

Diabetes Mellitus

Congestive Heart failure

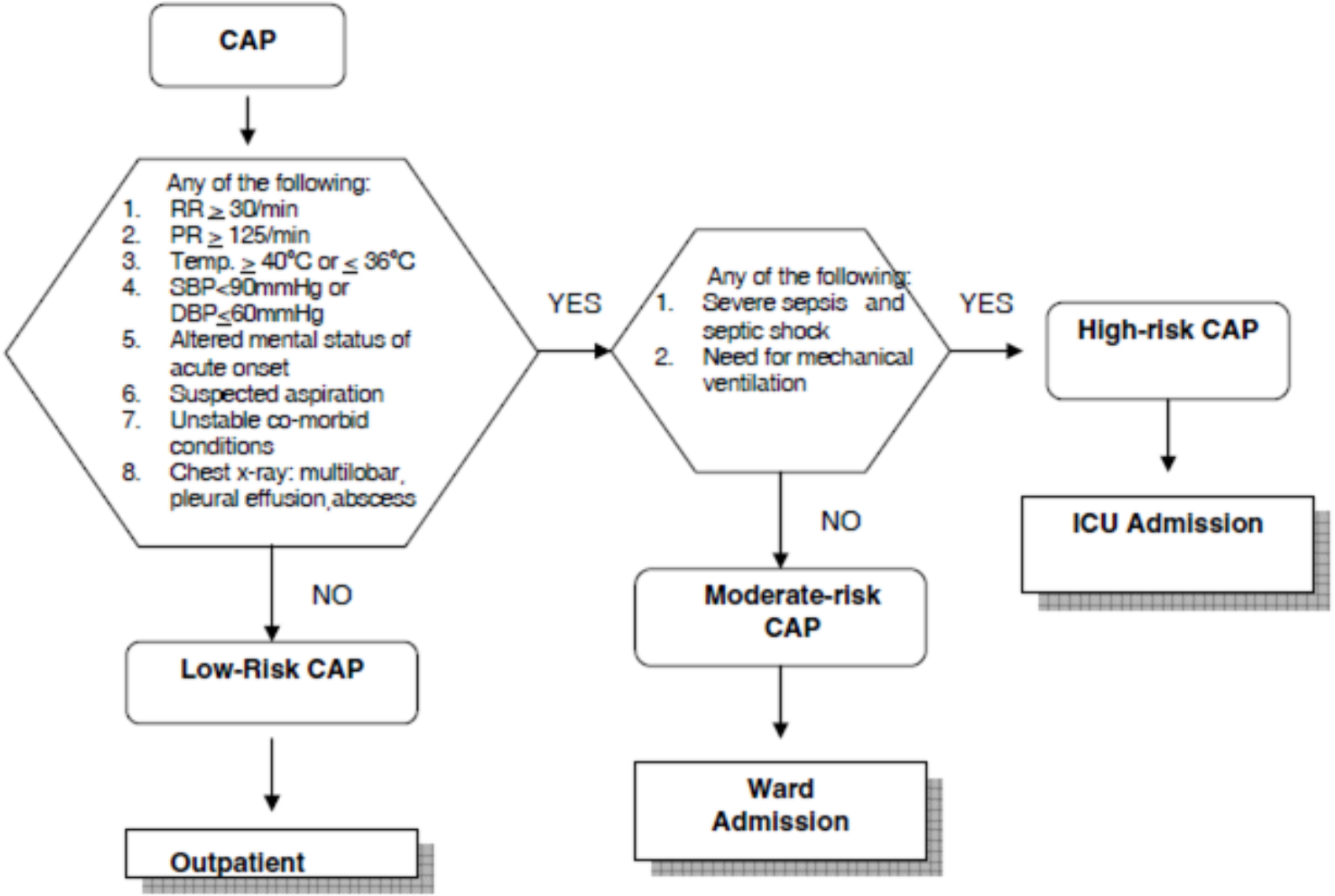
Chronic renal failure

Chronic liver disease

Chronic alcohol abuse

Malnutrition

Algorithm for the management-oriented risk stratification of CAP among immunocompetent adults



EMPIRIC ANTIMICROBIAL THERAPY FOR CAP

RISK STRATIFICATION	POTENTENTIAL PATHOGEN	EMPIRIC THERAPY
Low-risk CAP Stable Vital signs RR<30/minute PR<125/min SBP> 90 mm Hg DBP > 60 mm Hg Temp >36°C or <40°C No altered mental state of acute onset No suspected aspiration No or stable c o-morbid conditions Chest X ray – localized infiltrates - No evidence of pleural effusion	*Streptococcus pneumoniae* *Haemophilus influenzae* *Chlamydophila pneumoniae* *Mycoplasma pneumoniae* *Moraxella catarrhalis* Enteric Gram-negative bacilli (among those with co-morbid illness)	**Without co-morbid illness** Amoxicillin 1 gm TID OR Extended macrolides[a]: Azithromycin 500 mg OD OR Clarithromycin 500 mg BID **With stable co-morbid illness** β-lactam/β-lactamase inhibitor combination (BLIC)[b] OR 2nd gen oral cephalosporin[c] +/- extended macrolides[a] Co-amoxiclav 1 gm BID OR Sultamicillin 750 mg BID OR Cefuroxime axetil 500 mg BID +/- Azithromycin 500 mg OD OR Clarithromycin 500 mg BID

EMPIRIC ANTIMICROBIAL THERAPY FOR CAP

Moderate-risk CAP Unstable Vital Signs: RR ≥ 30/min PR ≥ 125/min Temp ≤ 36°C or ≥ 40°C SBP<90 mmHg DBP ≤60 mmHg Altered mental state of acute onset Suspected aspiration Unstable/Decompensated comorbid condition -uncontrolled diabetes mellitus, -active malignancies -neurologic disease in evolution, -congestive heart failure (CHF) Class II-IV -unstable coronary artery disease	*Streptococcus pneumoniae* *Haemophilus influenzae* *Chlamydophila pneumoniae* *Mycoplasma pneumoniae* *Moraxella catarrhalis* Enteric Gram-negative bacilli *Legionella pneumophila* Anaerobes (among those with risk of aspiration)	IV non-antipseudomonal β-lactam[d] (BLIC, cephalosporin) + extended macrolides[a] or respiratory fluoroquinolones[e] (PO) Ampicillin-Sulbactam 1.5 gm q6h IV OR Cefuroxime 1.5 g q8h IV OR Ceftriaxone 2 g OD + Azithromycin 500 mg OD PO OR Clarithromycin 500 mg BID PO OR Levofloxacin 500 mg OD PO OR Moxifloxacin 400 mg OD PO

EMPIRIC ANTIMICROBIAL THERAPY FOR CAP

-renal failure on dialysis -uncompensated COPD -decompensated liver disease		If aspiration pneumonia is suspected and, a regimen containing ampicillin-sulbactam and/or moxifloxacin is used, there is no need to add another antibiotic for additional anaerobic coverage. If another combination is used may add clindamycin to the regimen to cover microaerophilic streptococci. Clindamycin 600 mg q8h IV OR Ampicillin-Sulbactam 3 g q6h IV OR Moxifloxacin 400 mg OD PO

EMPIRIC ANTIMICROBIAL THERAPY FOR CAP

High-risk CAP Any of the clinical feature of Moderate risk CAP plus any of the following: Severe Sepsis and Septic Shock OR Need for Mechanical Ventilation	*Streptococcus pneumoniae* *Haemophilus influenzae* *Chlamydophila pneumoniae* *Mycoplasma pneumoniae* *Moraxella catarrhalis* Enteric Gram-negative bacilli *Legionella pneumophila* Anaerobes (among those with risk of aspiration) *Staphylococcus aureus* *Pseudomonas aeruginosa*	***No risk for P. aeruginosa*** IV non-antipseudomonal β-lactam[a] + IV extended macrolides[b] or IV respiratory fluoroquinolones[c] Ceftriaxone 2 gm OD OR Ertapenem 1 gm OD + Azithromycin dihydrate 500 mg OD IV OR Levofloxacin 500 mg OD IV OR Moxifloxacin 400 mg OD IV ***Risk for P. aeruginosa*** IV antipneumococcal antipseudomonal β-lactam[d] (HLIC, cephalosporin or carbapenem) + IV extended macrolides[b] + aminoglycoside[e] Piperacillin-tazobactam 4.5 gm q6h OR Cefepime 2 gm q8–12h OR Meropenem 1 gm q8h + Azithromycin dihydrate 500 mg OD IV + Gentamicin 3 mg/kg OD OR Amikacin 15 mg/kg OD OR

EMPIRIC ANTIMICROBIAL THERAPY FOR CAP

		IV antipneumococcal antipseudomonal β-lactam† (BLIC, cephalosporin or carbapenem) + IV ciprofloxacin / high dose levofloxacin Piperacillin-tazobactam 4.5 gm q6h OR Cefepime 2 gms q8-12h OR Meropenem 1 gm q8h + Levofloxacin 750 mg OD IV OR Ciprofloxacin 400 mg q8-12h IV **If MRSA pneumonia is suspected, add** Vancomycin 15 mg/kg q8-12 h OR Linezolid 600 mg q12h IV OR Clindamycin 600 mg q8h IV

DURATION OF ANTIBIOTIC USED BASED ON ETIOLOGY

ETIOLOGIC AGENT	DURATION OF THERAPY (DAYS)
Most bacterial pneumonias except enteric Gram-negative pathogens *S. aureus (MSSA and MRSA)*, and *P. aeruginosa*	5-7 days 3-5 (azalides) for *S. pneumoniae*
Enteric Gram-negative pathogens, *S. aureus (MSSA and MRSA)*, and *P. aeruginosa*	MSSA community-acquired pneumonia a. non-bacteremic - 7-14 days b. bacteremic - longer up to 21 days MRSA community-acquired pneumonia a. non-bacteremic - 7-21 days b. bacteremic - longer up to 28 days *Pseudomonas aeruginosa* a. non-bacteremic - 14-21 days b. bacteremic - longer up to 28 days
Mycoplasma and *Chlamydophila*	10 - 14 days
Legionella	14-21; 10 (azalides)

a. Extended macrolides: azithromycin, clarithromycin
b. Oral β-lactam/β-lactamase inhibitor combination (BLIC) – amoxicillin-clavulanic acid, sultamicillin
c. Oral second-generation cephalosporin: cefuroxime axetil
d. IV non-antipseudomonal β-lactam (BLIC, cephalosporin or carbapenem): ampicillin-sulbactam, cefuroxime Na, ceftriaxone, ertapenem
e. Respiratory fluoroquinolones: levofloxacin, moxifloxacin
f. IV antipneumococcal, antipseudomonal β-lactam (BLIC, cephalosporin or carbapenem): piperacillin-tazobactam, cefepime, imipenem-cilastatin, meropenem
g. Aminoglycosides: gentamicin, amikacin

WHAT TO REMEMBER!

What other information should be explained and discussed with the patient?

Explain to patients with CAP that after starting treatment their symptoms are expected to steadily improve, although the rate of improvement will vary with the severity of the pneumonia. Most people can expect that by:

1 week: fever should have resolved

4 weeks: chest pain and sputum production should have substantially reduced

6 weeks: cough and breathlessness should have substantially reduced

3 months: most symptoms should have resolved but fatigue may still be present

6 months: most people will feel back to normal.

CAP: Prevention

Influenza vaccination

Pneumococcal vaccination for the prevention of invasive pneumococcal disease in adults.

Smoking cessation

PEDIATRIC COMMUNITY-ACQUIRED PNEUMONIA

2012 PAPP Update in the Evaluation and Management of Pediatric Community-Acquired Pneumonia

Age-Specific Normal Vital Signs

Age	Heart Rate	Blood Pressure	Respiratory Rate
Premature	120-170	55-75/35-45	40-70
0-3 mos	100-150	65-85/45-55	35-55
3-6mos	90-120	70-90/50-65	30-45
6-12mos	80-120	80-100/55-65	25-40
1-3yrs	70-110	90-105/55-70	20-30
3-6yrs	65-110	95-110/60-75	20-25
6-12yrs	60-95	100-120/60-75	14-22
12yrs	55-85	110-135/65-85	12-18

PCAP: Diagnosis

Patient presenting with cough and/or respiratory difficulty **PLUS** any of the following predictors of radiographic pneumonia:

- Tachypnea as defined by WHO in a patient aged 3 months to 5 years; **OR**
- Fever at any age; **OR**
- Oxygen saturation less than or equal to 92% at room air at any age in the absence of co-existing illness

PCAP: Diagnosis

The presence of pneumonia should be determined using a **chest radiograph** in a patient presenting with

Cough and/or respiratory difficulty in the following situations:

- Presence of dehydration aged 3 months to 5 years
- Presence of severe malnutrition aged less than 7 years

High grade fever and leukocytosis aged 3 to 24 months without respiratory symptoms

PCAP: Risk Stratification

1. Revised risk classification for pneumonia-related mortality[a] [*Recommendation Grade D*]

CLASSIFICATION PROVIDED BY Philippine Academy of Pediatric Pulmonologists Philippine Health Insurance Corp World Health Organization	**pCAP A or B** --- Nonsevere	**pCAP C** Pneumonia I Severe	**pCAP D** Pneumonia II Very severe
VARIABLES[b]			
Clinical			
1. Dehydration[c]	None | Mild	Moderate	Severe
2. Malnutrition[d]	None	Moderate	Severe
3. Pallor	None	Present	Present
4. Respiratory rate			
3 to12 months[e]	≥50/min to ≤60/min	>60/min to ≤70	>70/min
1 to 5 years[e]	≥40/min to ≤50/min	>50/min	>50/min
> 5 years	≥30/min to ≤35/min	>35/min	>35/min
5. Signs of respiratory failure			
a. Retraction	None	IC/subcostal	Supraclavicular/IC/SC
b. Head bobbing	None	Present	Present
c. Cyanosis	None	Present	Present
d. Grunting	None	None	Present
e. Apnea	None	None	Present
f. Sensorium	None	Irritable	Lethargic/stuporous/comatose
Diagnostic aid at site-of-care[f]			
1. Chest x ray findings of any of the following: effusion; abscess; air leak or lobar consolidation	None	Present	Present
2. Oxygen saturation at room air using pulse oximetry	95%	<95%	<95%
ACTION PLAN			
1. Site-of-care	Outpatient	Admit to ward	Admit to a critical care facility
2. Follow-up	End of treatment		

PCAP: Diagnosis

Patients under 5 years old [Grade B] and more than 5 years old [Grade D] who are classified as pCAP C but whose chest x-ray is without any of the following:

Effusion, lung abscess, air leak or multilobar consolidation

Oxygen saturation is ≥ 95% at room air

Can be managed initially on an outpatient basis

PCAP A or B: Treatment

For pCAP A or B, an antibiotic **may be** administered if a patient is

- Beyond 2 years of age [Grade D]
- With high grade fever without wheeze [Grade D]

PCAP A or B: Treatment

- Amoxicillin [40-50 mg/kg/day, maximum dose of 1500 mg/day in 3 divided doses for at most 7 days] is the drug of choice
  - May be given for a minimum of 3 days [Grade A]
  - May be given in 2 divided doses for a minimum of 5 days [Grade B]
- Alternative
  - Azithromycin [10 mg/kg/day OD for 3 days or 10 mg/kg/day at day 1 then 5 mg/kg/day for days 2-5, max dose of 500mg/day]
  - Clarithromycin [15mg/kg/day, maximum dose of 1000 mg/day in 2 divided doses for 7 days]

PCAP C

For pCAP C, an antibiotic

Should be administered if alveolar consolidation on chest x-ray is present

May be administered if a patient is with any of the ff:

- Elevated serum CRP [Grade A]
- Elevated serum procalcitonin [Grade B]
- Elevated WBC [Grade D]
- High grade fever without wheeze [Grade D]
- Beyond 2 years of age [Grade D]

PCAP C: Treatment

For a patient classified as PCAP C without previous antibiotic and who has completed the primary immunization against *Haemophilus influenza type b,* Penicillin G [100,000 units/kg/day in 4 divided doses] is the drug of choice

If a primary immunization against *Hib has not been completed,* intravenous Ampicillin [100 mg/kg/day in 4 divided doses] should be given

PCAP D: Treatment

For a patient classified as PCAP D, a specialist should be consulted.

THANK YOU!

UPDATED since APRIL 2016

ARP, MD