CHRONIC DISEASE AMID CHRONIC POVERTY

Nicholas Comninellis, MD, MPH, DIMPH
President & Professor

INSTITUTE FOR INTERNATIONAL MEDICINE

PRESENTATION OBJECTIVES

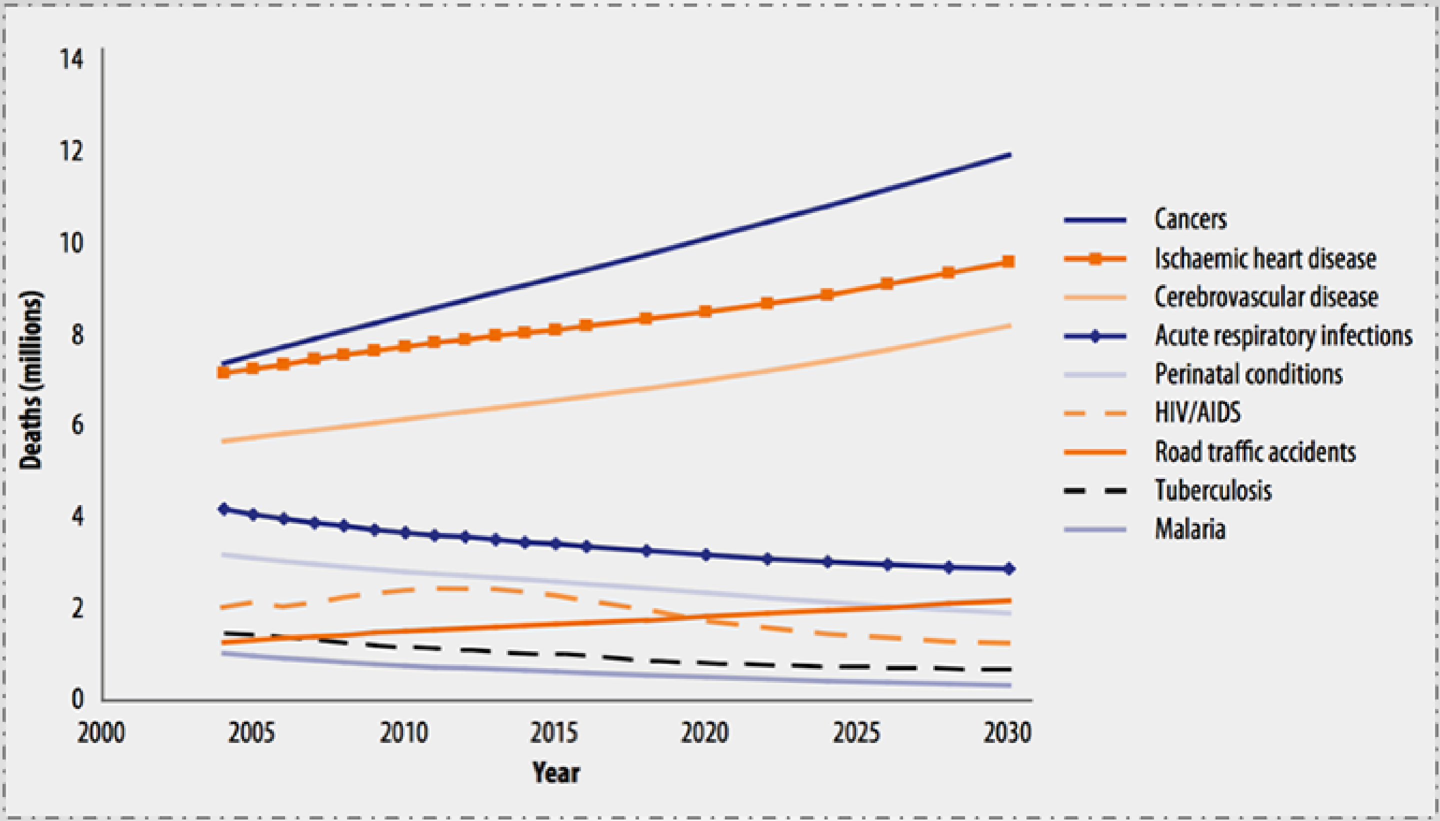
- Describe the burden of the chronic diseases in developing countries
- Innumerate the challenges of managing these illnesses in low-resource settings
- Describe effective strategies to combat the most pervasive chronic diseases

FROM WHAT DISEASE IS THIS MAN SUFFERING?

FROM WHAT DISEASE IS THIS MAN SUFFERING?

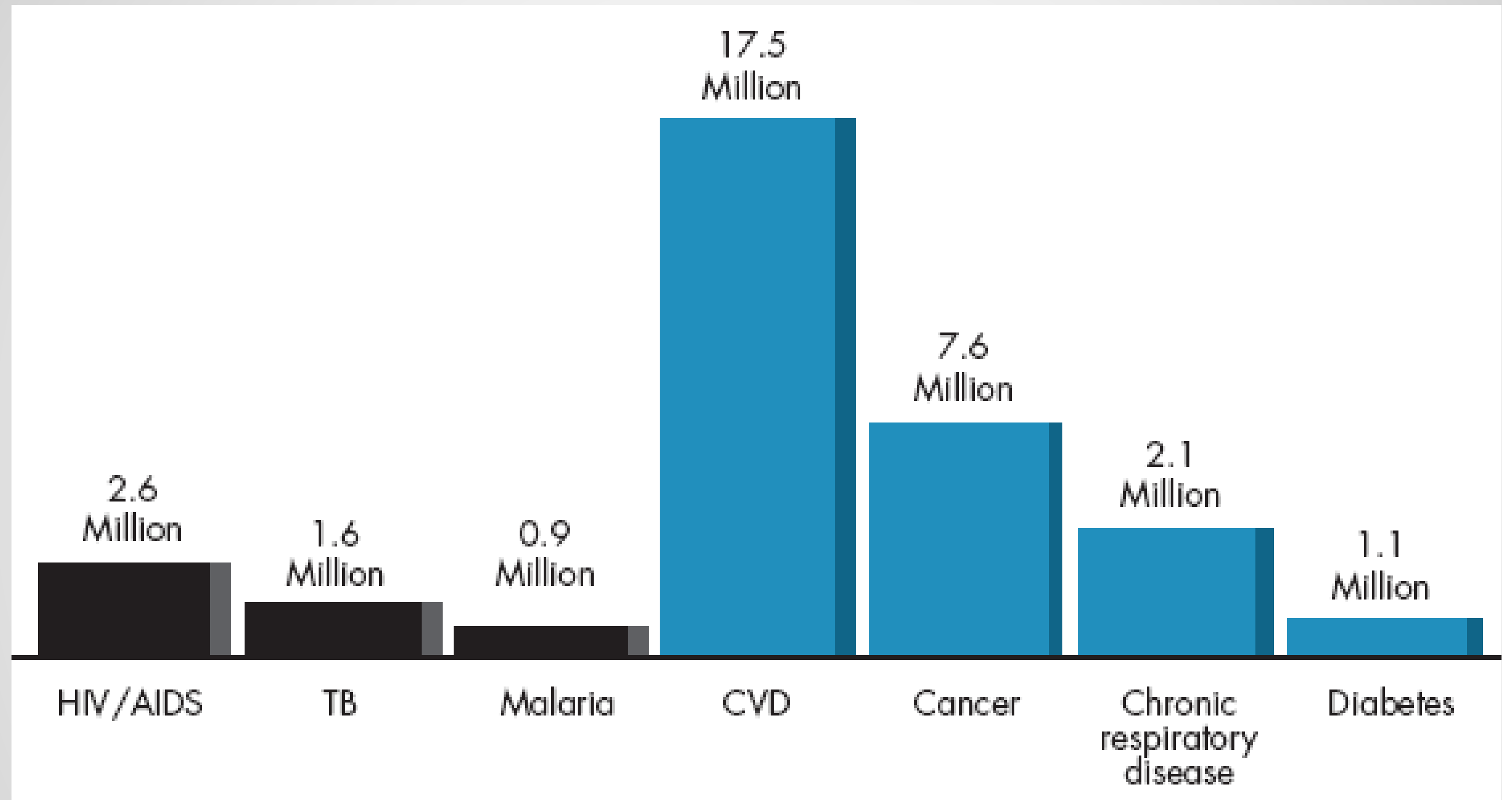
Damian, Type I diabetic

WHY A PRESENTATION ON CHRONIC DISEASES AT AN INTERNATIONAL HEALTH MEETING?



PARADIGM SHIFT: WORLD-WIDE RISE OF NON-COMMUNICABLE DISEASES

WHAT ARE THE LEADING CAUSES OF DEATH WORLD-WIDE?



WORLD-WIDE DEATHS BY CAUSE

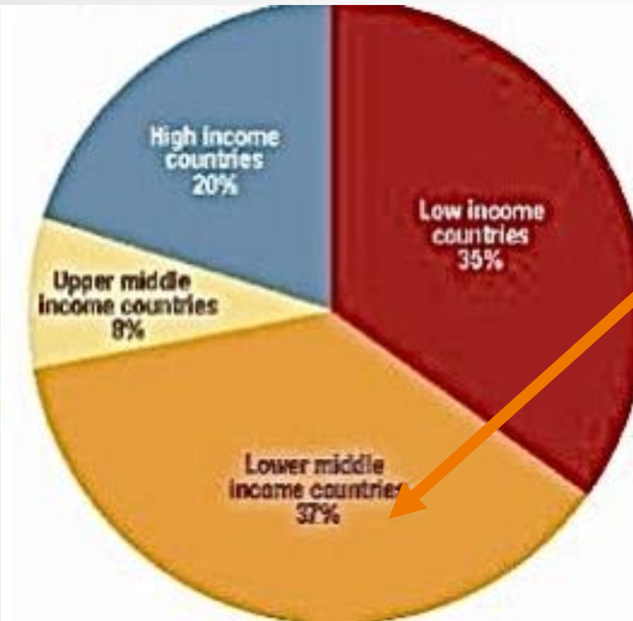
WHAT IS THE “DOUBLE BURDEN” OF DISEASE IN LOW/MIDDLE NATIONS?

“DOUBLE BURDEN” OF DISEASE

In low/middle income countries chronic diseases are creating a double burden on top of infectious diseases like HIV, malaria, and TB.

IN WHAT NATIONS DO MOST CARDIOVASCULAR, CANCER, AND CHRONIC RESPIRATORY DEATHS OCCUR?

80% OF CHRONIC DISEASE DEATHS WORLDWIDE OCCUR IN



low and middle income countries.

AREN'T CHRONIC DISEASES ASSOCIATED WITH AFFLUENCE, RATHER THAN WITH POVERTY?

ACTUALLY, CHRONIC DISEASES ARE MOREOVER DISEASES OF POVERTY, NOT AFFLUENCE. WHY?

WHY ARE CHRONIC DISEASES ESPECIALLY ASSOCIATED WITH POVERTY?

SOCIAL DRIVERS OF CHRONIC DISEASES

- Desire for modern “westernized” lifestyle, diet, exercise patters
- Reduced influence of traditional cultures
- Urbanization with increased social influences

ECONOMIC DRIVERS OF CHRONIC DISEASES

- Increased international trade in processed food products
- Powerful advertising and marketing of unhealthy products worldwide
- Increases in sedentary jobs and women working outside the home
- Increases in disposable income

BEHAVIORAL DRIVERS OF CHRONIC DISEASES

- Adopting unhealthy behavior, such as smoking at relatively young age
- Changes in eating habits towards restaurants, fast foods, and meat and dairy products

CHRONIC DISEASES MAINLY AFFECT OLD PEOPLE. TRUE OR FALSE?

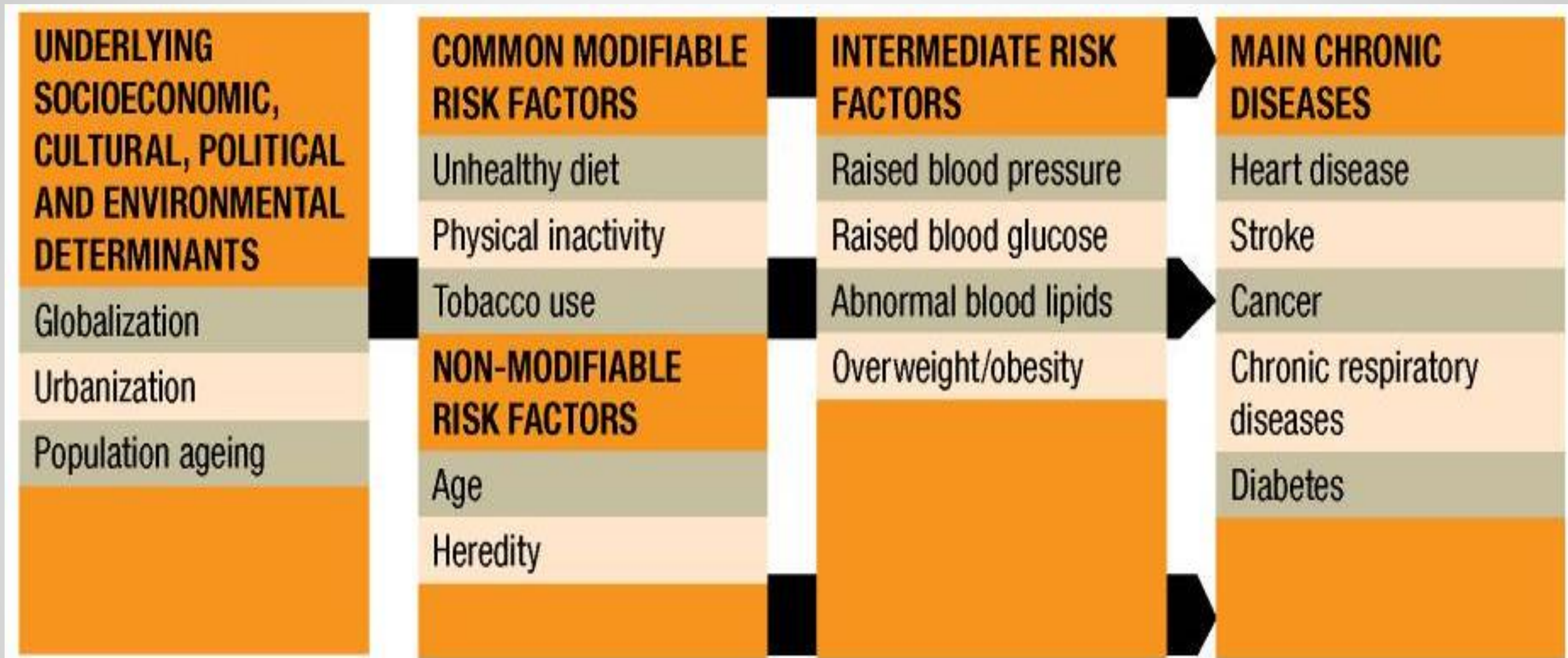
CHRONIC DISEASES OF MIDDLE AGE

Chronic diseases primarily affect 35-64 year old populations, and plunge such families into poverty with great impact on national economies.

CHRONIC DISEASES MAINLY AFFECT MEN.
TRUE OR FALSE?

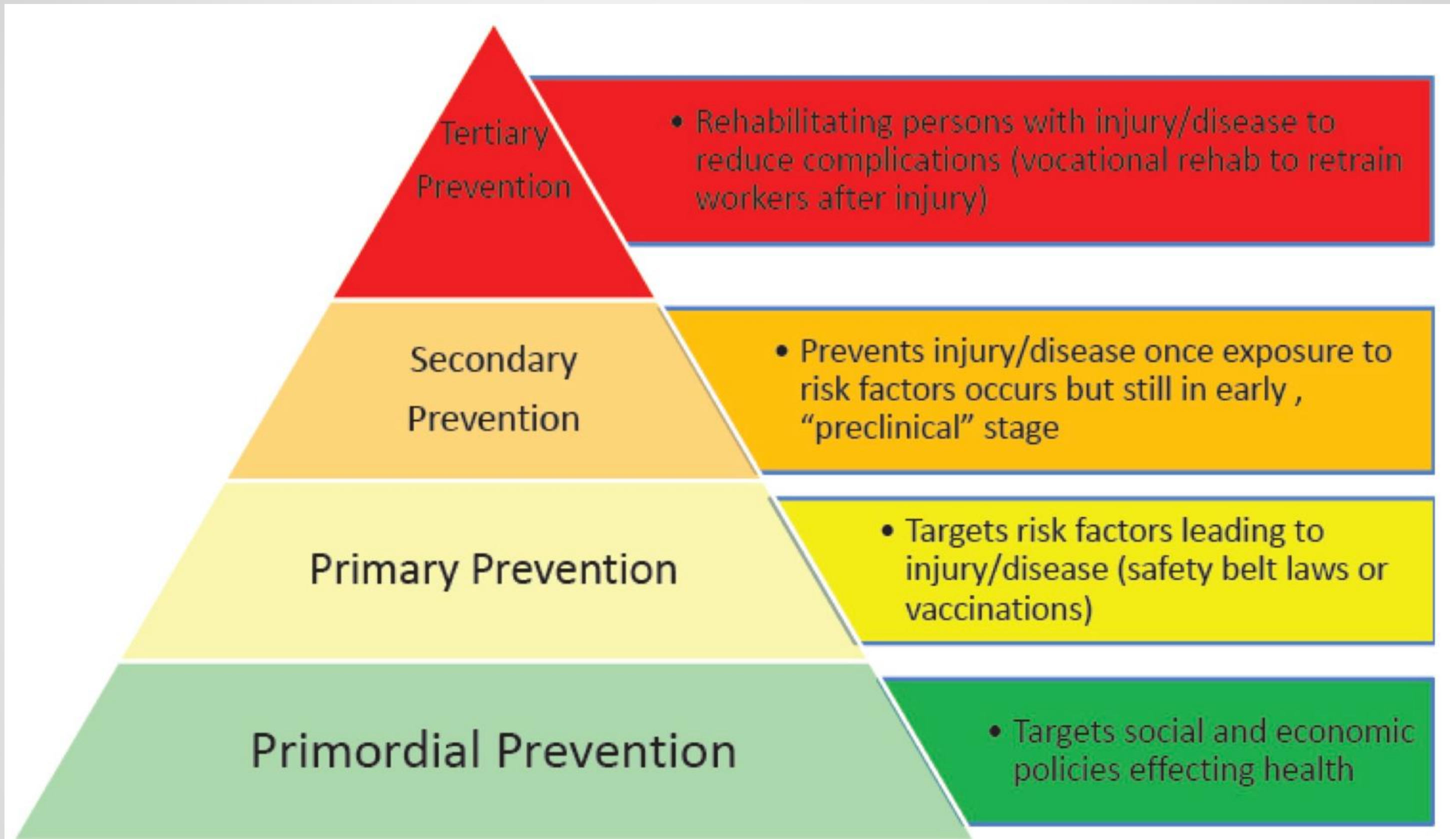
CHRONIC DISEASES OF EQUALITY

Around the world, chronic diseases affect women and men almost equally.



RISK FACTORS PROGRESSING TOWARDS CHRONIC DISEASES

HOW CAN CHRONIC, NON-COMMUNICABLE DISEASES (NCDs) BE CONTROLLED?



LEVELS OF PREVENTION

CONTROL OF NCDs DISEASES

- Advocacy: raise awareness in general population (primordial)
- Prevention: interventions integrated into national primary health care services (primary)
- Community-based interventions on these diseases and their risk factors (secondary and tertiary)

CONTROL OF NCDs DISEASES

- Strengthen epidemiological surveillance of NCDs and risk factors within the National Health System
- Establish partnerships and networks with other supporting agencies, NGOs and professional organizations
- Promote research on cost-effective prevention and management of NCDs

WHAT ARE SOME CHALLENGES OF CHRONIC RESPIRATORY DISEASES?

CHRONIC RESPIRATORY DISEASES

COPD

- Dramatic increase in **tobacco use**
- Residual fibrosis from cured TB
- Air pollution
- Indoor cooking

Asthma

CHRONIC RESPIRATORY DISEASES

"Tobacco is the only legally available consumer product which kills people when it is used entirely as intended." ~ The Oxford Medical Companion, 1994

HOW TO REDUCE CHRONIC RESPIRATORY DISEASES?

REDUCE CHRONIC RESPIRATORY DISEASES

- Warn about the dangers of tobacco
- Monitor tobacco use policies
- Enforce bans on tobacco advertising, promotion, and sponsorship
- Offer help to people to quit tobacco
- Protect people from tobacco smoke
- Raise taxes on tobacco!

WHAT ARE SOME PRINCIPLES OF COPD TREATMENT?

COPD MEDICATION TREATMENT

- Stage I, FEV1 >80%
  - Lifestyle modification, smoking cessation
- Stage II, FEV1 60-80% with continuing sx's
  - Inhaled salbutamol/albuterol (100 ug) prn 2-4 puffs prn
- Stage III, FEV1 40-60%
  - Add ipratropium bromide 2-6 puffs q6hrs
- Stage IV, FEV 1 <40%
  - Add long-acting theophylline at low dosages
  - Consider adding inhaled beclomethasone 100 ug BID

HOW IS HYPERTENSION DEFINED?

HYPERTENSION DEFINITIONS

Minimize error by taking BP at least twice on at least 2 different occasions.

- Normal: <120 systolic, <80 diastolic
- Elevated: 120-129 systolic, <80 diastolic
- HTN Stage 1: 130-139 systolic, 80-90 diastolic
- HTN Stage 2: ≥140 systolic, ≥90 diastolic

Note: HTN should be treated earlier in people with other risk factors for CAD

WHAT ARE CAUSES OF SECONDARY HYPERTENSION THAT SHOULD BE CONSIDERED?

SECONDARY HYPERTENSION CAUSES

Most hypertension is “essential” but also consider secondary causes:

- Kidney failure
- Hyperaldosteronism (uncommon)
- Hyperthyroidism (uncommon)
- Pheochromocytoma (rare)

WHAT SIMPLE TESTS COULD HELP IDENTIFY CAUSES OF SECONDARY HYPERTENSION?

TESTS FOR CAUSES OF SECONDARY HYPERTENSION

Most hypertension is “essential” but also consider secondary causes:

- Urine analysis to detect protein and blood (kidney failure)
- Serum creatinine and blood urea nitrogen (kidney failure)
- Serum potassium (hyperaldosteronism)

WHAT ARE TODAY'S LEADING BEHAVIORAL INTERVENTIONS AGAINST HYPERTENSION?

LEADING INTERVENTIONS AGAINST HYPERTENSION

Behavior improvement:

- Low salt, high fruit/vegetable diet
- Ideal body weight
- Regular exercise
- Moderation of alcohol

WHAT ARE THE FIRST-LINE MEDICATIONS TO TREAT HYPERTENSION?

FIRST-LINE HYPERTENSION MEDICATIONS

- Thiazide diuretics: chlorthalidone, hydrochlorothiazide, metalazone
- ACE-inhibitors: captopril, enalapril, lisinopril
- Angiotensin receptor blockers: losartan, azilsartan
- Calcium channel blockers: amlodipine, nifedipine

WHAT ARE THE SECOND-LINE MEDICATIONS TO TREAT HYPERTENSION?

SECOND-LINE HYPERTENSION MEDICATIONS

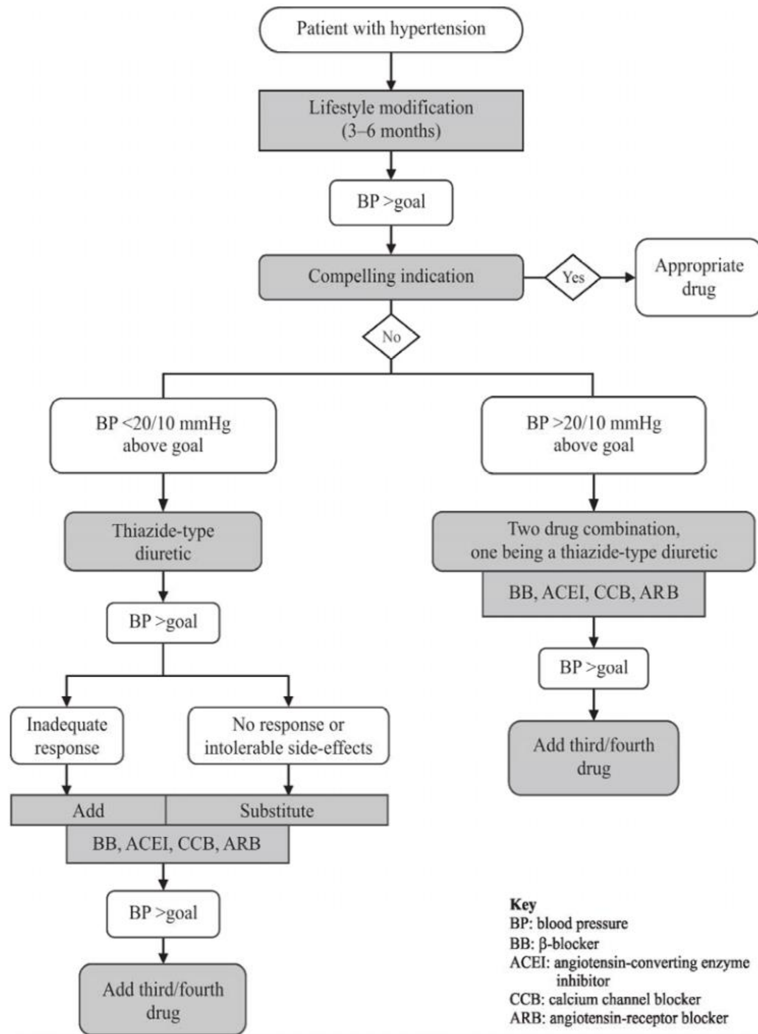
- Diuretics: furosemide, triamterene, spironolactone
- Beta-blockers: atenolol, metoprolol, propranolol
- Alpha 1 blockers: prazosin, terazosin
- Centrally acting: clonidine, methyldopa
- Direct vasodilators: hydralazine, minoxidil

WHAT ARE SOME FACTORS TO CONSIDER IN SELECTING AN APPROPRIATE HYPERTENSION MEDICATION?

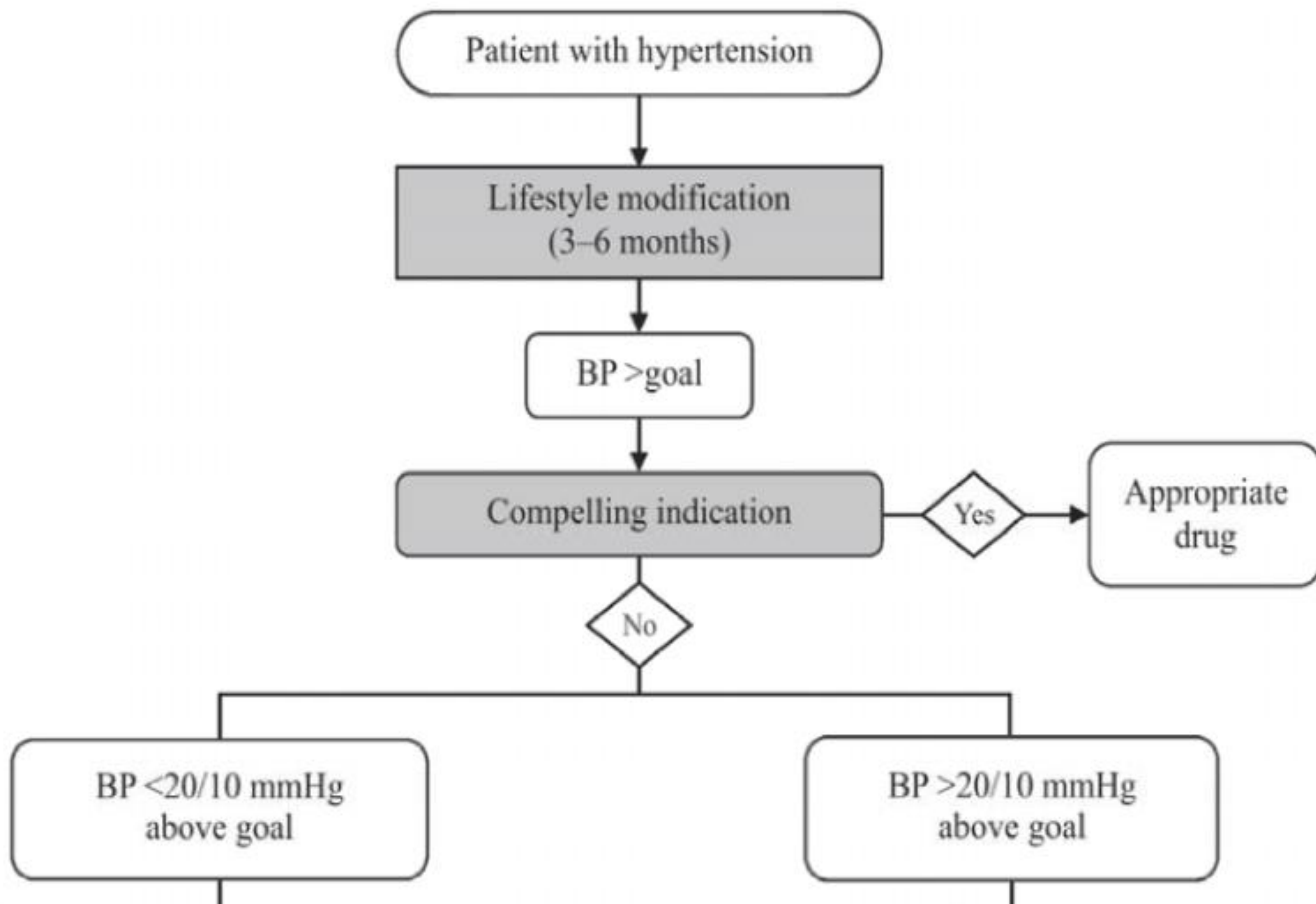
HYPERTENSION MEDICATION SELECTION FACTORS

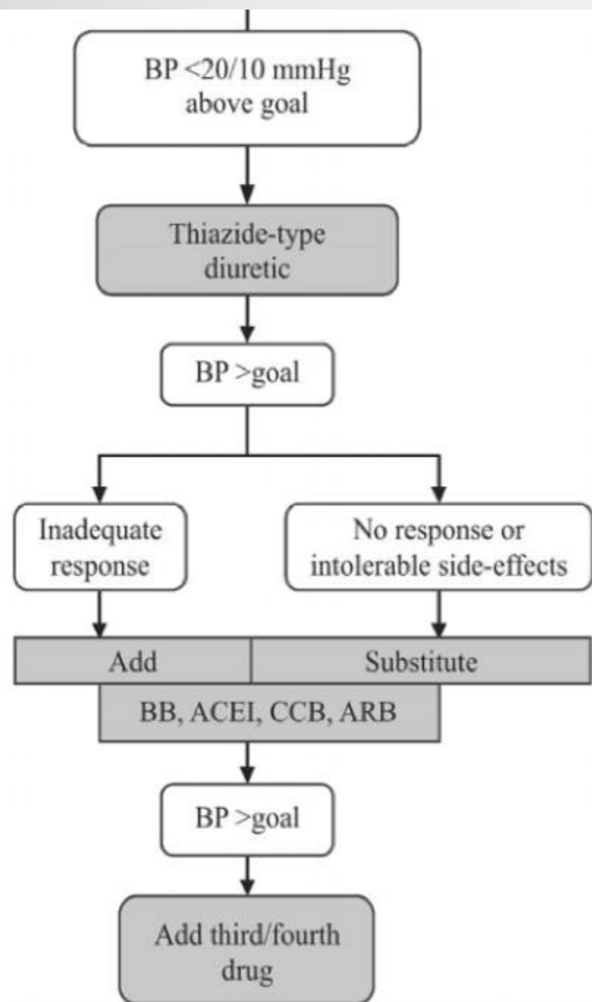
- Cost
- Availability
- Dosage interval
- Effectiveness
- Side effects
- Patient acceptance

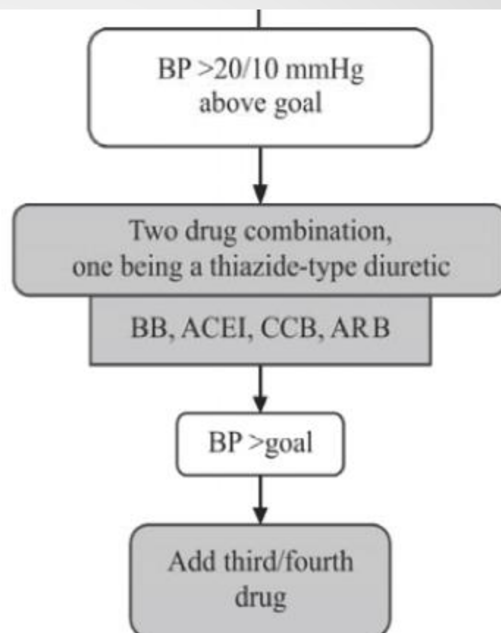
WHAT DO YOU KNOW ABOUT HYPERTENSION MANAGEMENT PROTOCOLS?



SAMPLE HYPERTENSION MANAGEMENT PROTOCOL


Patient with hypertension
Lifestyle modification
(3–6 months)
BP >goal
Compelling indication
Yes
Appropriate
drug
No
BP <20/10 mmHg
above goal
BP >20/10 mmHg
above goal





Key

BP: blood pressure

BB: β-blocker

ACEI: angiotensin-converting enzyme inhibitor

CCB: calcium channel blocker

ARB: angiotensin-receptor blocker

HOW LARGE A PROBLEM IS DIABETES MELLITUS?

EPIDEMIOLOGY OF DIABETES MELLITUS

- 380 million people will be affected by 2025, 5% of world population
  - Largest increases in prevalence will be in developing countries
  - 3.8 million deaths annually (probably grossly underestimated)
- 50% people with diabetes are unaware (80% unaware in developing countries)

WHAT ARE LEADING RISK FACTORS FOR DIABETES MELLITUS ?

LEADING RISK FACTORS FOR DIABETES MELLITUS

- Overweight, BMI > 23-25
- Physical inactivity
- First degree relative with DM
- Hypertension
- Hyperlipidemia
- African, Asian, or native American; Latino; Pacific Islander

WHAT ARE DIAGNOSIS CRITERIA FOR DIABETES MELLITUS ?

DIAGNOSIS CRITERIA FOR DIABETES MELLITUS

- Fasting blood glucose >126 mg/dl
- Post-prandial (anytime) BG > 200 mg/dl
- 2-hour BG >200 during oral glucose tolerance test
- Hemoglobin A1C >6.5%

WHAT ARE SOME IMPORTANT ISSUES OF DIABETES MELLITUS TREATMENT?

DIABETES TREATMENT PRINCIPLES

- Achieve ideal body weight with exercise
- Limit simple sugars in diet
- First oral agent: Metformin
- Add Sulfonylureas (glipizide, glyburide)
- Insulin for those who respond poorly or are Type 1
- Control comorbidities hypertension and kidney disease

RELIABLE SUPPLY OF INSULIN = LIFE OR DEATH

- 1% of children in sub-Saharan Africa are alive 6 years after Type I DM diagnosis.
- Insulin is expensive. East African patients pays 229$/year
- Insulin is not available. In Mozambique only 20% of hospitals and no health centers stocked insulin.
- Also need needles and syringes, glucose monitoring, trained healthcare personnel.

QUESTION

Which ONE of the following statements regarding chronic diseases is TRUE?

A. Providing continuity of care for chronic diseases is essential for successful treatment.

B. The prevalence of cigarette smoking worldwide is on the decline, especially in poorer nations.

C. Diabetes mellitus is usually diagnosed very early in the disease process.

D. Hypertension is generally difficult to manage for lower-level practitioners.

ANSWER

Which ONE of the following statements regarding chronic diseases is TRUE?

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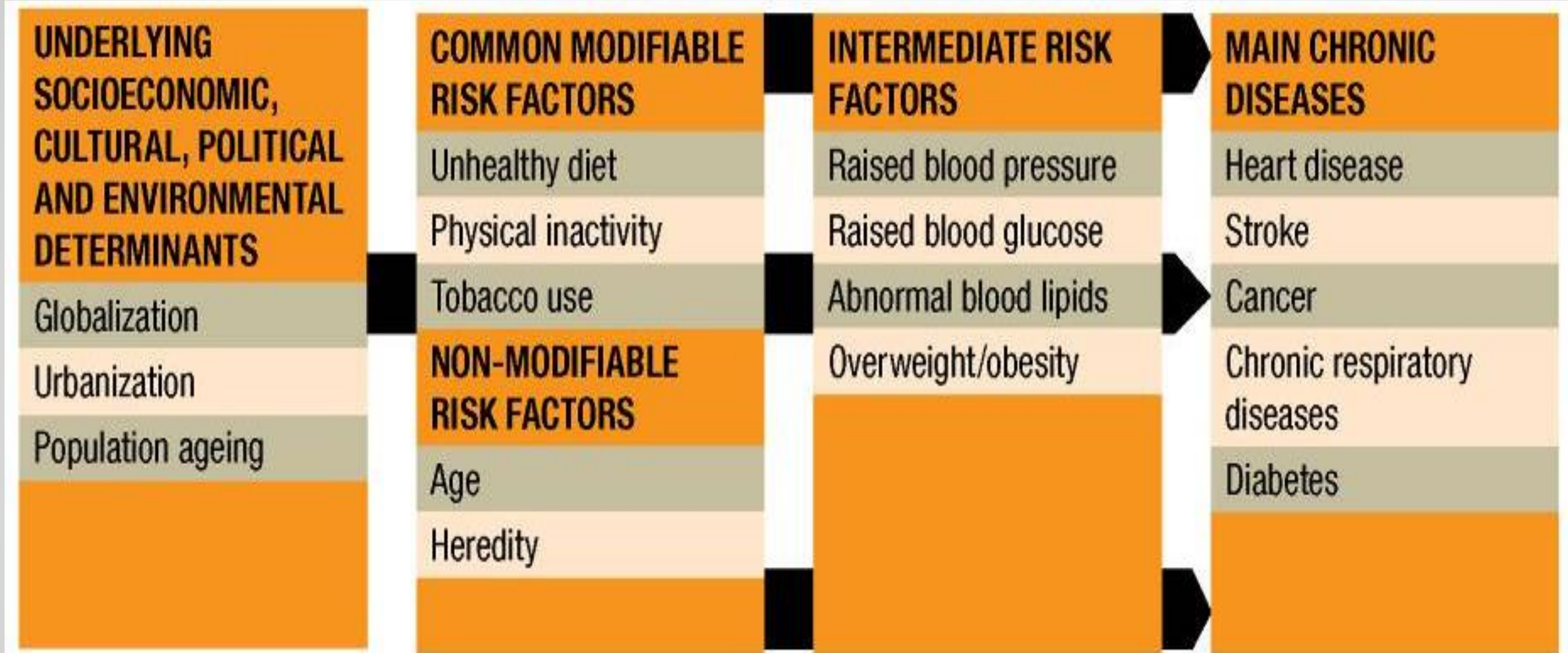
WHERE THERE IS NO INSULIN

Damian, Type I diabetic



RISK FACTORS PROGRESSING TOWARDS CHRONIC DISEASES

INTERNATIONAL HEALTH LEARNING OPPORTUNITIES

EQUIP YOURSELF TO BETTER SERVE FORGOTTEN PEOPLE

INSTITUTE FOR INTERNATIONAL MEDICINE

Nicholas Comninellis, MD, MPH, DIMPH
+1 816-444-6400, nicholas@inmed.us

www.inmed.us