

Hypertension & Syndrome Management Protocols



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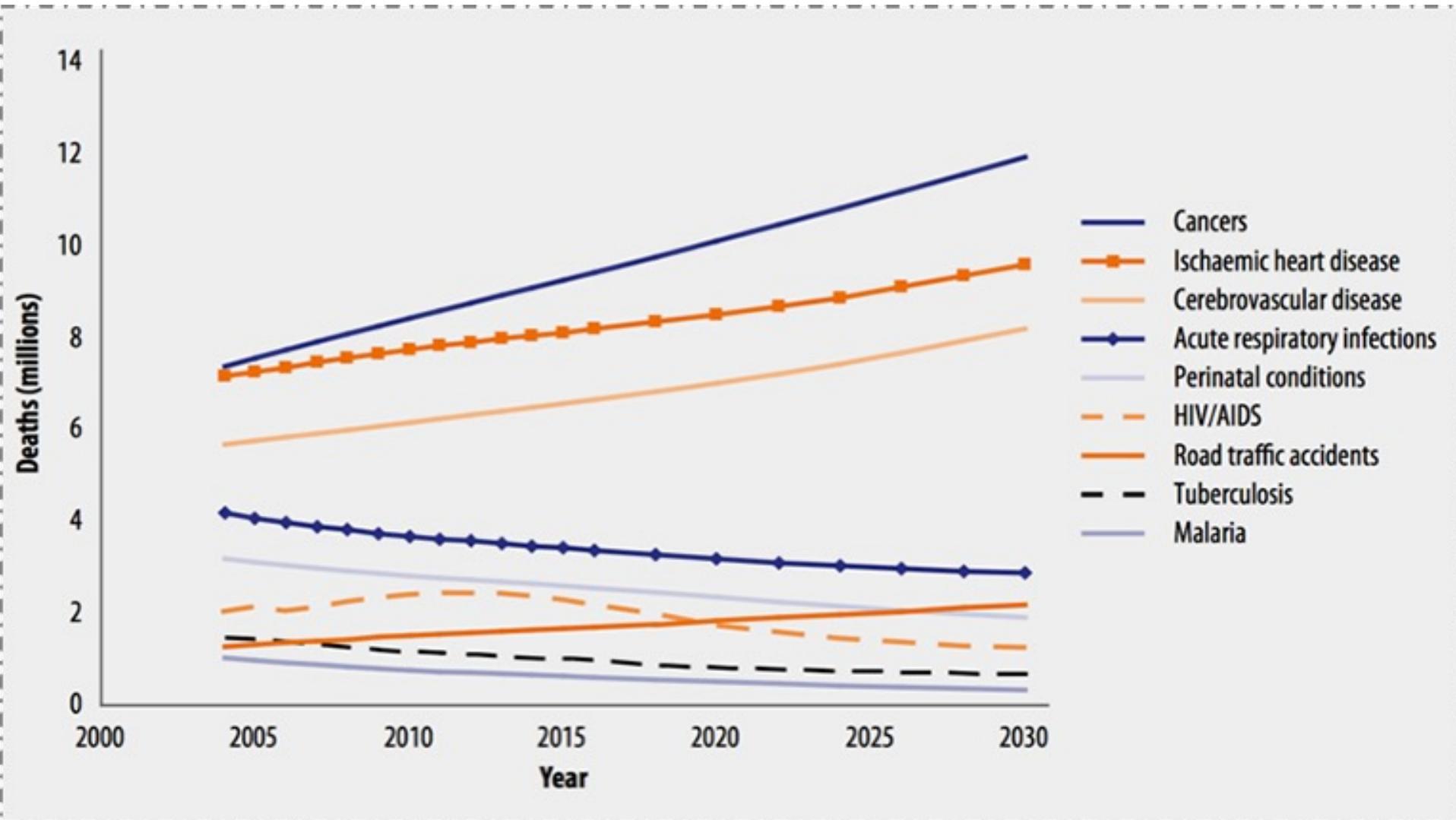
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Presentation Objectives

At the completion of this presentation, participants in a low-resource community will be able to more effectively:

- Grasp the rise in non-communicable diseases
- Implement HTN control interventions
- Express the rationale for using syndrome management protocols
- Design and build consensus for protocol use



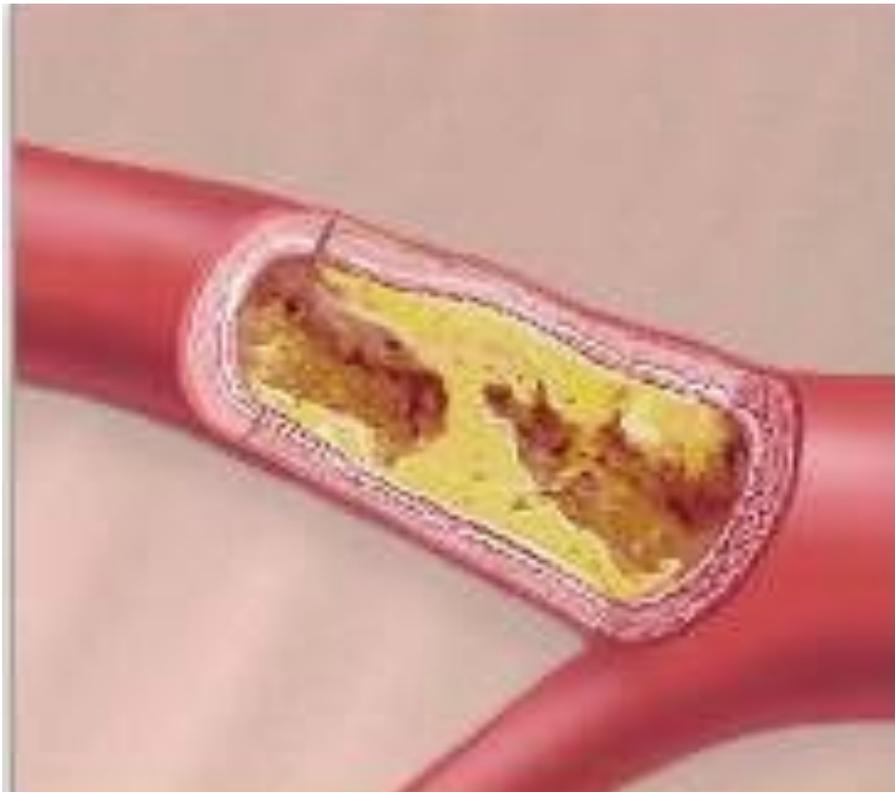


Paradigm Shift: World-wide Rise of Non-Communicable Diseases

What Are The *Leading Risk Factors* for life years (DALYs) lost in Lowest-income Nations?

Risk Factors	Percentage of Total <u>DALYs</u> Lost
Childhood underweight	9.9
Unsafe water, sanitation and hygiene	6.3
Unsafe sex	6.2
Suboptimal breastfeeding	4.1
Indoor smoke from solid fuel	4.0
Vitamin A deficiency	2.4
Hypertension	2.2
Alcohol	2.1
High blood glucose	1.9
Zinc deficiency	1.7

Top 10 Risk Factors for DALYs Lost in Lowest-income Nations



Coronary Artery Diseases (CAD) & Cerebrovascular Accident (CVA) are 13-14th Leading Causes of DALYS Lost in Low-Income Nations

**What are the
leading risk
factors for
atherosclerosis
world-wide?**



Risk Factors For Atherosclerosis Are Identical World-Wide

Leading *controllable* risk factors include:

- Hypertension
- Diabetes mellitus
- Tobacco smoking
- Hyperlipidemia
- Obesity
- Physical inactivity
- Diet high in saturated and *trans* fats, cholesterol, sodium and sugar

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?

- A Providing continuity of care for chronic diseases is essential for successful treatment.
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- D Hypertension is generally difficult to manage for lower-level practitioners.

**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, metolazone
- 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 antihypertension medication?

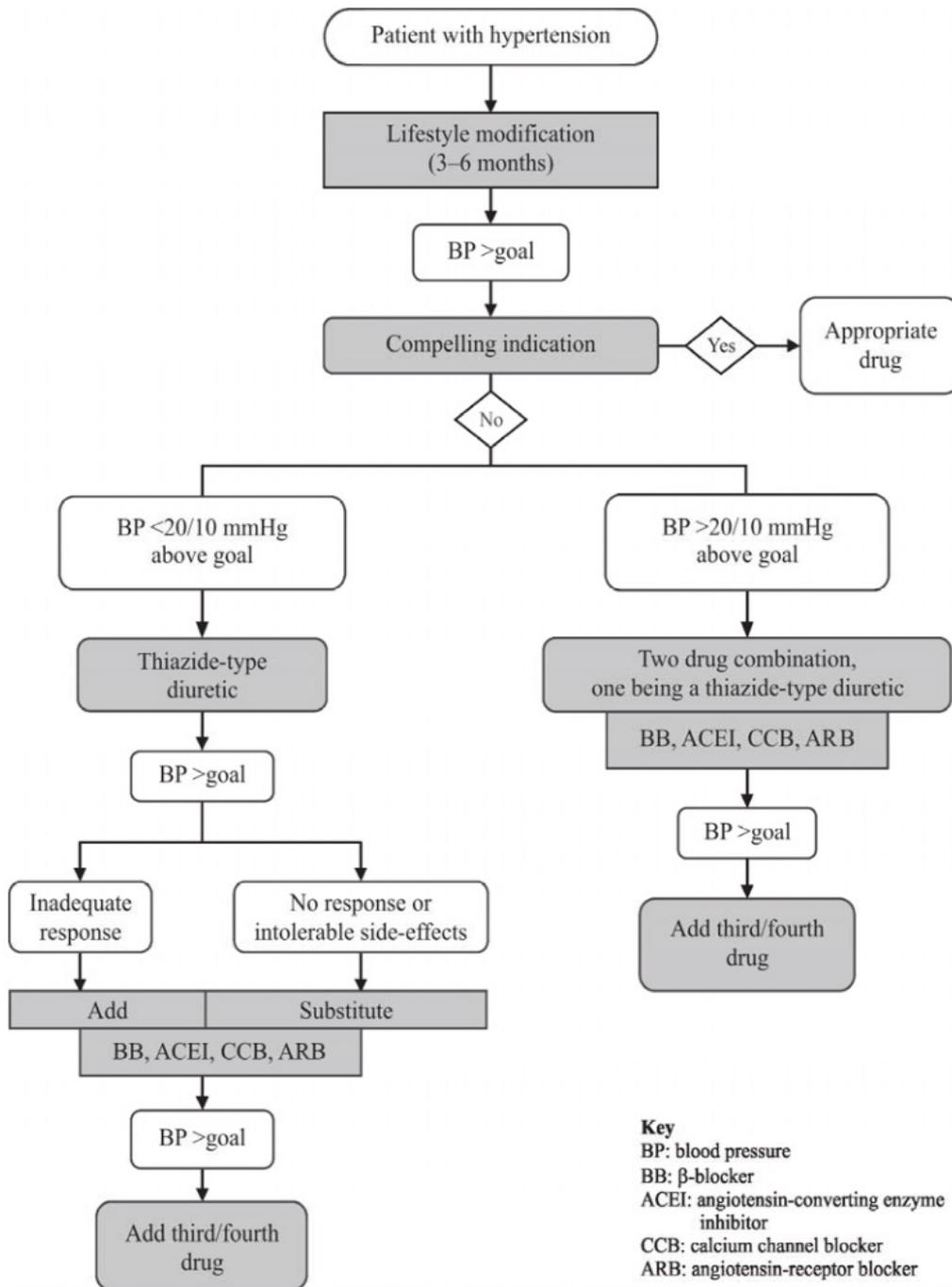


Hypertension Medication Selection Factors

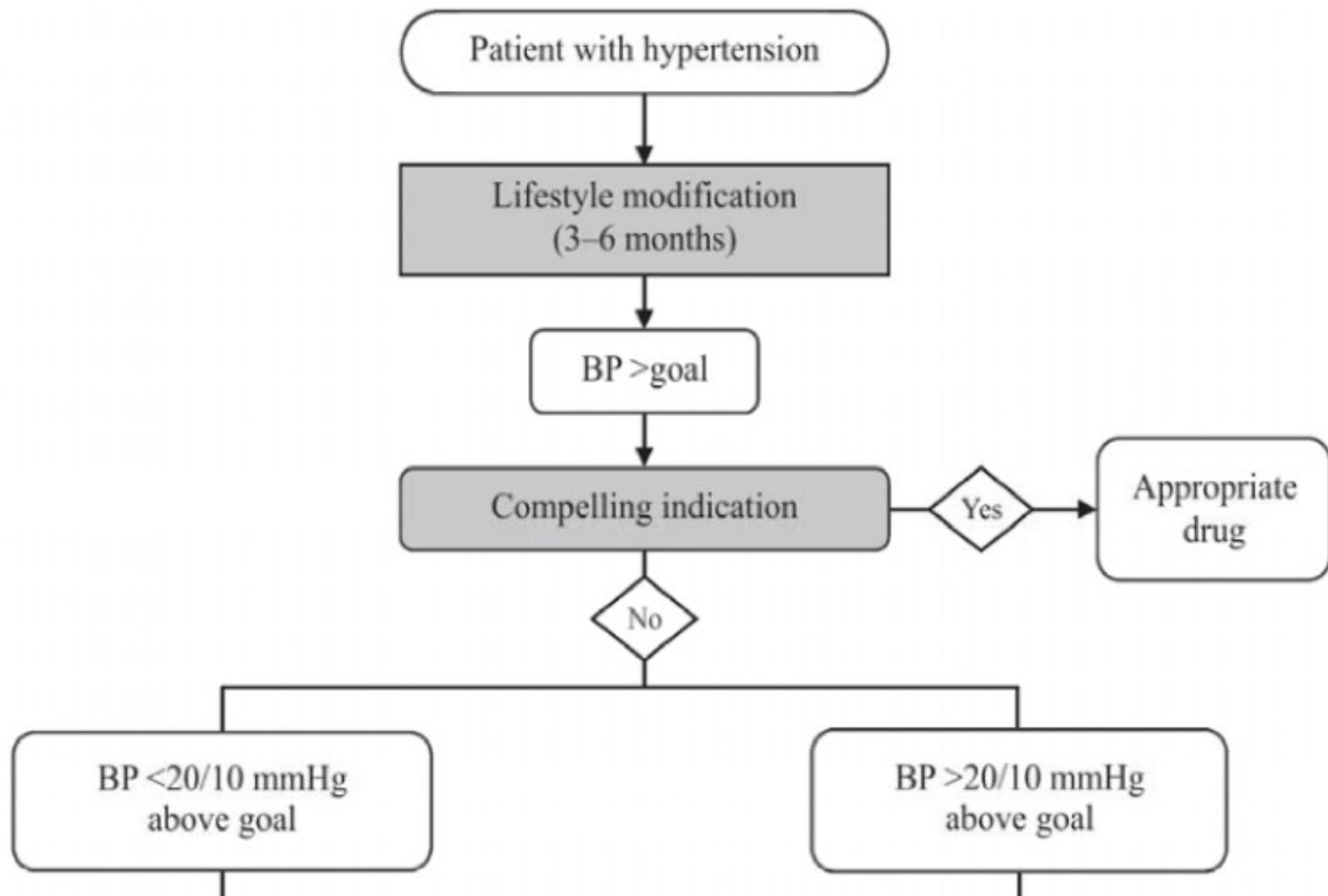
- Cost
- Availability
- Dosage interval
- Effectiveness
- Side effects
- Patient acceptance

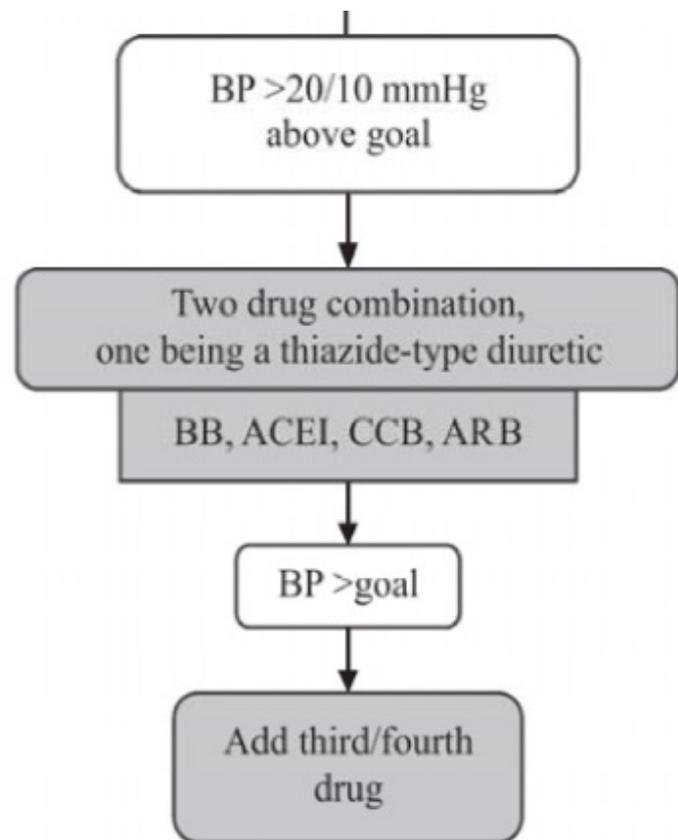
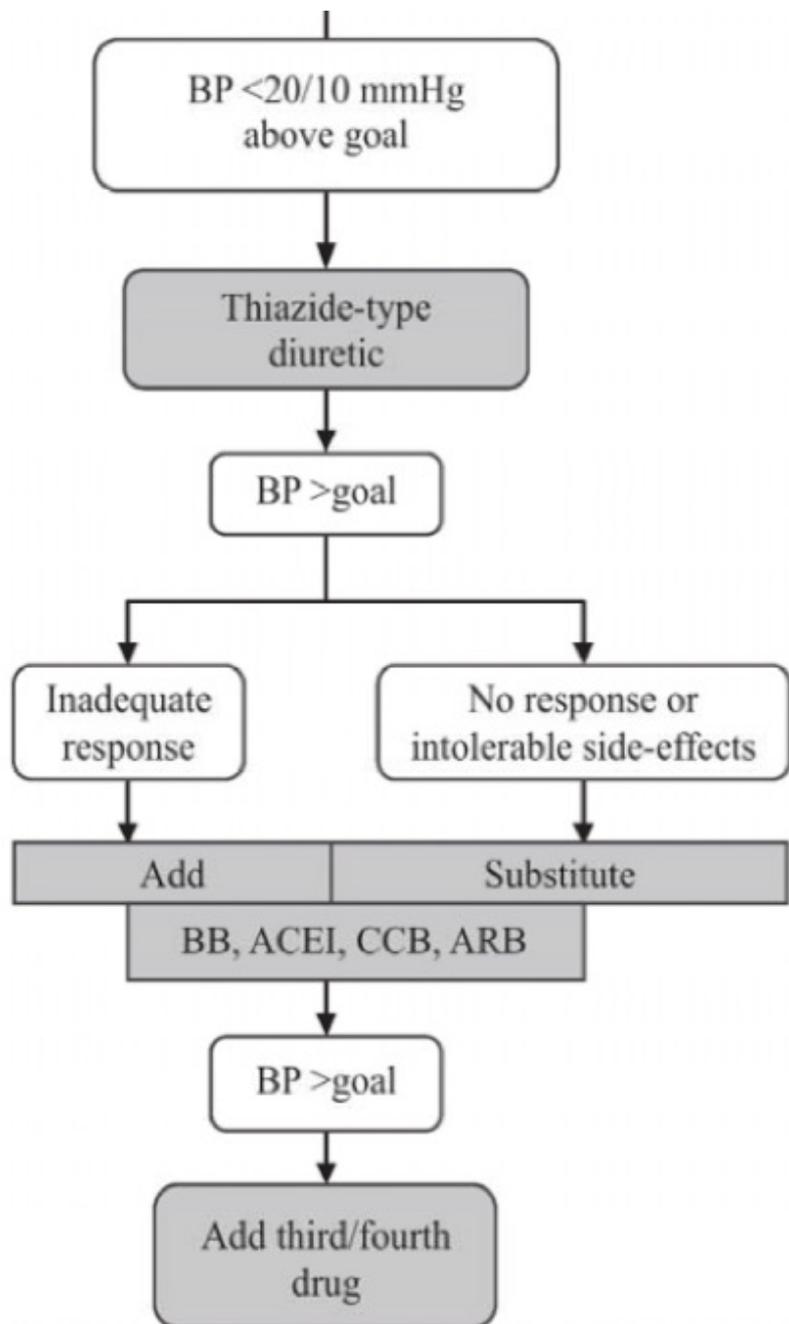
**What do you
know about
hypertension
management
protocols?**





Sample WHO HTN Management Protocol





Key

BP: blood pressure

BB: β -blocker

ACEI: angiotensin-converting enzyme inhibitor

CCB: calcium channel blocker

ARB: angiotensin-receptor blocker

More Hypertension Management Principles

- Assure that patients understand this is a life-long disease.
- For well controlled HTN, see patient at least each 3 months.
- For poorly controlled HTN, see patient at least each 2 weeks.
- For continued poor control, if possible, refer to specialist.



Awaiting consultation at the
Agape In Action Clinic, Guatemala

What Is The Rationale For Using Syndrome Management Protocols?



Rationale For Syndrome Management Protocols

- Speeds care for those with similar syndromes
- Assists in communication between care providers who use the same standards of care
- Simplifies the acquisition of drugs and supplies
- Assists incoming healthcare personnel to more quickly understand how to work
- Assists staff with more limited training to provide quality care
- Improves patient health outcomes by putting well-conceived standards of care into practice

**What kind of
shock did You
experience
when arriving
at your place of
service?**



Professional Shock

Shock is a description the experience of healthcare professionals as they transition to low-resource communities, primarily because:

- Diseases and injuries are often unfamiliar
- Diagnostic facilities are frequently minimal
- Resources are frequently unavailable
- Colleagues may function under a different standards
- Cultures are unfamiliar
- Much ill health is preventable



On arrival in Angola, Nicholas Comninellis (center) was guided through *professional shock* by Andrea Rohner and Jean-Pierre Brechet



His Angola Healthcare Team together created protocols for managing common syndromes.

**How should
syndrome
management
protocols be
adjusted for
each particular
setting?**



Site-Specific Protocols

Syndrome management protocols *must* be tailored for each setting because of:

- Locally prevalent diseases and injuries
- Particular customs and behaviors that inform how diseases are managed
- Available laboratory and imaging services
- Available medications and supplies
- Unique drug sensitivities
- Knowledge and skill of healthcare providers
- Compliance patterns within a community



Tim Myrick working amid stark cultural limitations in the Middle East



Dr. Mathews working amid stark laboratory limitations in Tanzania.

Question

Each of the following is a rationale for using syndrome management protocols in low-resource settings EXCEPT which ONE?

- A Speeding care for those who present with common concerns
- B Assisting incoming healthcare personnel to more quickly understand the wide variety of care options
- C Assisting communication between care providers who recognize the local standards of care
- D Simplifying the acquisition of medications, supplies and equipment

Answer

Each of the following is a rationale for using syndrome management protocols in low-resource settings EXCEPT which ONE?

A Speeding care for those who present with common concerns

B Assisting incoming healthcare personnel to more quickly understand the wide variety of care options

C Assisting communication between care providers who recognize the local standards of care

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**How would you
create protocols
to manage the
most common
clinical
presentations?**



Protocol Development: Consensus

- An effective syndrome management protocol requires a strong sense of ownership if it is to be actually used.
- So, organization-wide input and critique are essential.
- Everyone involved must be included in the development process: medical officers, clinical officers, physicians, nurses, pharmacists, administrators, laboratory personnel, etc.

Protocol Development: Continuity

- Development of syndrome management protocols should be a continuous process.
- As experience is gained, periodically meet to updating the protocols, and assure continued consensus.
- Consideration must also be made to incorporate new advances in disease prevention and treatment as they appear.

Question

Which ONE of the following is NOT a relevant factor to be considered when tailoring disease management protocols for a particular setting?

- A Locally prevalent diseases and injuries
- B Particular customs and behaviors that inform how diseases are managed
- C Limitations on available of laboratory and imaging
- D Availability of medications and supplies that can be special ordered

Answer

Which ONE of the following is NOT a relevant factor to be considered when tailoring disease management protocols for a particular setting?

- A Locally prevalent diseases and injuries
- B Particular customs and behaviors that inform how diseases are managed
- C Limitations on availability of laboratory and imaging
- D Availability of medications and supplies that can be special ordered

Explanation

Disease management protocols should be designed around medications and supplies that are readily available to the healthcare facility, both in terms of cost and accessibility. Reliance on medications and supplies that are distant, expensive, or dependent upon donations creates obstacles that can seldom be overcome with any continuity.

**What can be the
role of
community
health workers
in syndrome
management?**



Question

In an effort to provide some form of basic medical care to all persons, many developing nations rely upon community health workers (CHWs). Though the skill set differs with the needs of particular communities, CHWs are typically expected to perform all of the following skills, except which one?

- A. Vaccination and well-child care
- B. Midwifery
- C. Nutrition counseling
- D. Management of opportunistic infections
- E. Treatment of common diseases

Answer

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- C. Nutrition counseling
- D. Management of opportunistic infections
- E. Treatment of common diseases



**Syndrome management protocols
can help multiply provision of
appropriate and quality care**

Polish your skills to serve forgotten people



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