## Introduction:

Welcome to CUGH's bi-weekly clinical case-series, "Reasoning without Resources," by Prof. Gerald Paccione of the Albert Einstein College of Medicine. These teaching cases are based on Prof. Paccione's decades of teaching experience on the medical wards of Kisoro District Hospital in Uganda. They are designed for those practicing in low resource settings, Medicine and Family Medicine residents, and senior medical students interested in clinical global health. Each case is presented in two parts. First comes a case vignette (presenting symptoms, history, basic lab and physical exam findings) along with 6-10 discussion questions that direct clinical reasoning and/or highlight diagnostic issues. Two weeks later CUGH will post detailed instructors notes for the case along with a new case vignette. For a more detailed overview to this case-series and the teaching philosophy behind it, see Introduction to "Reasoning without Resources". Comments or question may be sent to Prof. Paccione at: gpaccion@montefiore.org

Note: If you would like to be notified when a new case is posted (along with instructor notes for the previous one), send your e-mail to Jillian Morgan at jmorgan@CUGH.org.

## About the Author:

Dr. Gerald Paccione is a Professor of Clinical Medicine at the Albert Einstein College of Medicine in the Bronx, New York. His career has centered on medical education for the past 35 years – as a residency Program Director in Primary Care and Social Internal Medicine at Montefiore Hospital, and director of the Global Health Education Alliance at the school. He has served on the Boards of Directors of Doctors for Global Health, Doctors of the World USA, and the Global Health Education Consortium. Dr. Paccione spends about 3 months a year in Uganda working on the Medicine wards of Kisoro District Hospital where he draws examples for the case studies.

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# CASE 34 – SEVERE HYPERTENSIVE WITH DYSPNEA

A 72 year old woman with a history of hypertension presents to the Chronic Care Clinic of Kisoro District Hospital for a scheduled visit but also complaining of difficulty breathing for some weeks.

Hypertension was diagnosed a few years ago by her Village Health Worker while screening blood pressure during a home-visit, and since then she has been followed in the Chronic Care Clinic. She was started on a thiazide diuretic for a systolic BP >190 and soon thereafter propranolol and nifedipine were added for difficult-to-control hypertension. Over the past 2 years, her blood pressures have ranged 170-200/100-110 with good adherence by report, and with reliable clinic follow-up documented.

Now she complains of feeling increasingly short of breath for the past few weeks, a complaint she never voiced before. With probing however, it's apparent that she's had increasing dyspnea on exertion for the past 3 years, first noticed when climbing hills to dig in her fields, and over the past year even on walking ~25 meters up gradual inclines. For the past year she has had to sleep partially sitting up, reclining to only about 45 degrees because of breathlessness when lying flat. She's gradually lost weight, hasn't had leg swelling, or dyspnea that suddenly wakes her from sleep. She's had a cough, particularly at night, dry without sputum, but no fevers or sweats. She hasn't audibly wheezed nor did she have problems (as did some of her siblings) with shortness of breath when younger. She never smoked.

**Physical Exam**: Pleasant elderly woman sitting upright in no distress

BP: 172/107, repeated x 2; HR 78; RR 22 unlabored; T: 98.2; pulse oximetry: 84% (repeated with 2 oximeters)
Conjunctiva: no pallor or petechiae;
Fundi: no papilledema; scattered hard exudates; no soft exudates or hemorrhages; A/V~1/3 with generalized narrowing, tortuosity and A/V nicking noted;
Neck: thyroid normal; no lymphadenopathy; no JVP; no HJR;
Chest: increased AP diameter [AP to lateral diameter ~1] with prominent sternum and slight dorsal kyphosis; trachea midline
Lungs: hyper-resonant to percussion bilaterally particularly right upper anterior chest;
decreased breath sounds diffusely, with intermittent faint high-pitched long expiratory wheeze audible;
early inspiratory crackle(s) heard at bases bilaterally (~1-3 per second when heard);
Heart: prominent epigastric impulse; no PMI nor lifts/heaves palpable;
cardiac percussion: dullness ~8.5-9 cm from mid-sternum;
S4 audible in left lateral decubitus; S1, S2 narrowly split with increased P2; no S3;

Abdomen: no bruits; no hepatosplenomegaly, masses, distention, guarding or tenderness;
Extremities: without edema or clubbing; pulses +2 throughout
Neurologic: grossly normal mental status, Cranial Nerves, motor, sensory, gait, cerebellum; reflexes +2

1. **What is the "frame" of this case from the patient's history (i.e. the *key* clinical features the final diagnosis must be consistent with and/or explain)?**
   **Explain the clinical relevance of each.**

2. **What are the most important findings on physical exam, both "positive" and "negative", and what do they tell you?**
   **What exercise maneuver/measure would be diagnostically informative?**

3. ***Which organ* affected by *what pathophysiology* is causing the patient's dyspnea?**
   **What supports your diagnostic impression?**

4. **What is the dominant risk factor for this disease worldwide, and what proportion of total cases of the disease does it explain?**
   **What are the principle causes of this disease in Africa and the developing world?**

5. **What is the likely root cause of the disease in this patient?**
   **What additional history might substantiate your suspicion/hypothesis?**

6. **What public health interventions are beneficial that Village Health Workers could promote and local families adopt to prevent the disease?**