

# Clinical Problem Solving

Week 1



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*advancing health worldwide™*

# Thanks and Acknowledgements

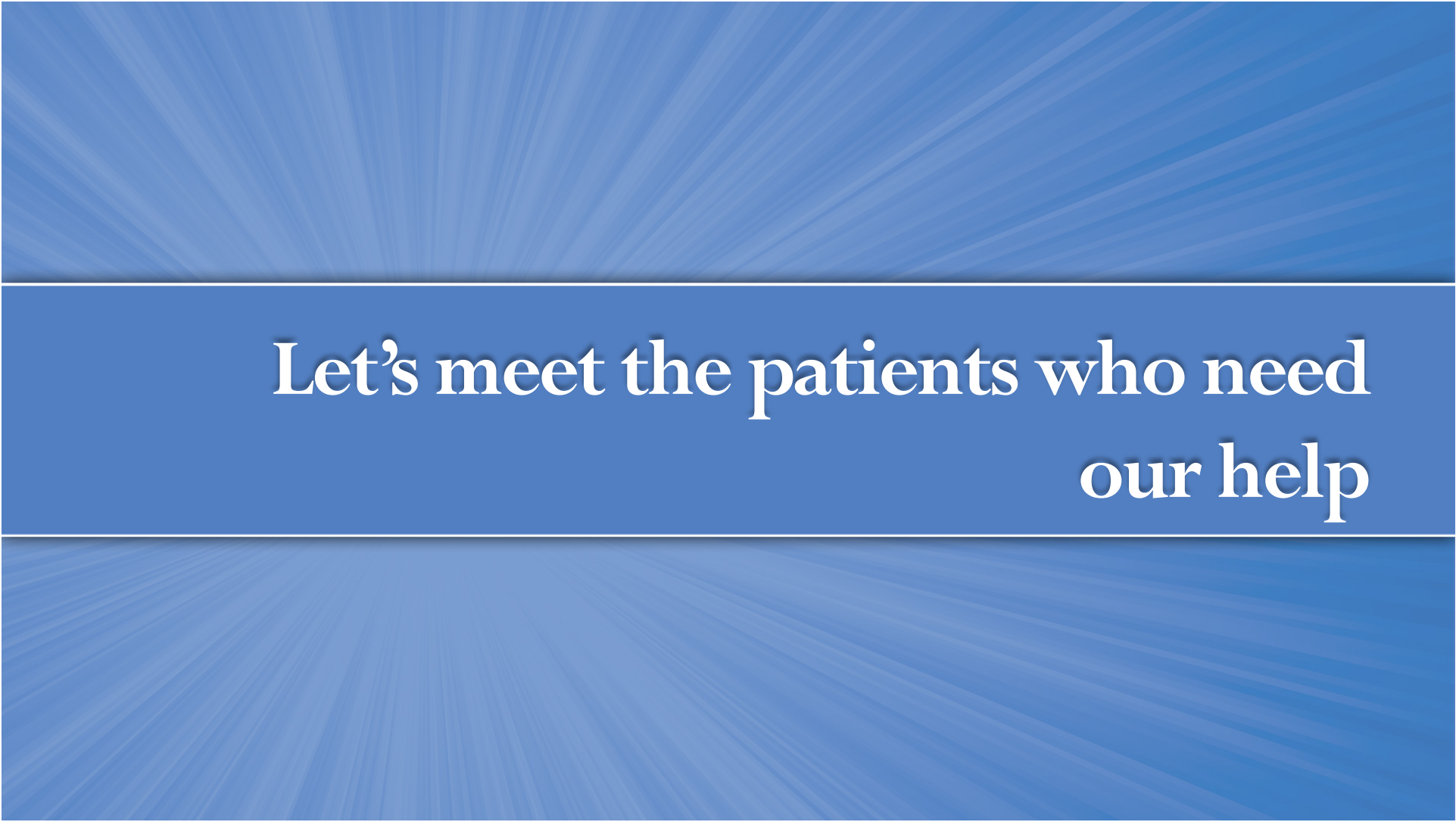
- This work would not have been possible without the intellectual efforts and collaboration of the following outstanding physicians and many students and residents:
  - Frederick Williams, MD
  - Cynthia Ledford, MD
  - Judy Bowen, MD

# Welcome to our course!

- This course was originally designed for medical students and physicians. The concepts are relevant for all health professionals who diagnose and treat patients. In the interest of conciseness, I will use the term clinician.
- Each module builds on the previous module—please stay with us!

# Welcome to our course!

- Using a medical textbook will optimize your experience in the class. The textbook, *Current Medical Diagnosis & Treatment* 2012 or 2013, eds Papadakis, McPhee, and Rabow is a useful resource. It is not required.
- Please keep a record of your work in the class. We will revisit patients and principles often.

The background of the slide is a solid blue color with a subtle sunburst or radial pattern emanating from the center. The text is centered horizontally and vertically within a slightly darker blue rectangular band.

Let's meet the patients who need  
our help

# Jeremy Liter

- 15 years old
- “I have a very sore throat.”



# Ms. Sophia Bulara

- 17 years old
- Chief Complaint:
  - “My ankles really hurt and I can’t walk.”



# Mrs. Ana Garcia

- 59 years old
- CC: “I have been getting very short of breath.”



# Mr. Robert Durrett

- 85 years old
- CC: (from his wife): “My husband is confused and not himself.”



# Mrs. Marie Triglioni

- 48 years old
- CC: “I am terribly dizzy and nauseated.”



# Ms. Alicia Jones-Hopper

- 35 years old
- “My stomach really hurts.”



# Goals for Module 1

- Describe the differences between the knowledge structures of novices and experts
- Define the term illness script and identify the core components of these important packages of memory
- Recognize the importance of learning to compare and contrast the critical features of different diseases.
- Describe a mechanism of reading that facilitates expert problem solving capacity.

# What is clinical diagnosis?

## **The process by which clinicians:**

- obtain information from their patients,
- compare that information to their understanding of different diseases
- and develop a working diagnosis that can drive testing and treatment plans.

# Clinical Diagnosis is Important

- Accurate diagnosis is the key to identifying the treatment that will restore the patient to good health.
- While computers can identify lists of possible diseases, their ability to prioritize based on the patient in front of you is limited.
- Despite the widespread availability of diagnostic tests, experts estimate that the history alone can lead to the correct diagnosis in the majority of cases.
- Furthermore, when tests are needed, the significance of their results cannot be gleaned unless you know the likelihood of the disease in question before the test is obtained.

# The problems of defaulting to tests

- Ms. Jones-Hopper
- “My stomach hurts”
- CT Scan: Right adrenal nodule.
- Extensive lab work up:
  - non functioning adenoma
- Still has episodes of abdominal pain.

# Good Clinical Diagnosticians:

- Efficiently obtain enough information from the patient to make an initial differential diagnosis.
- Search their memory or resources to identify possible causes of their patient's symptoms.
- Prioritize the likelihood that a possible disease explains a patient's concerns.
- Judiciously use tests to evaluate their assessments.
- Continuously analyze the success of their diagnoses to improve their accuracy going forward.

It's a mystery...

## INPUT

History

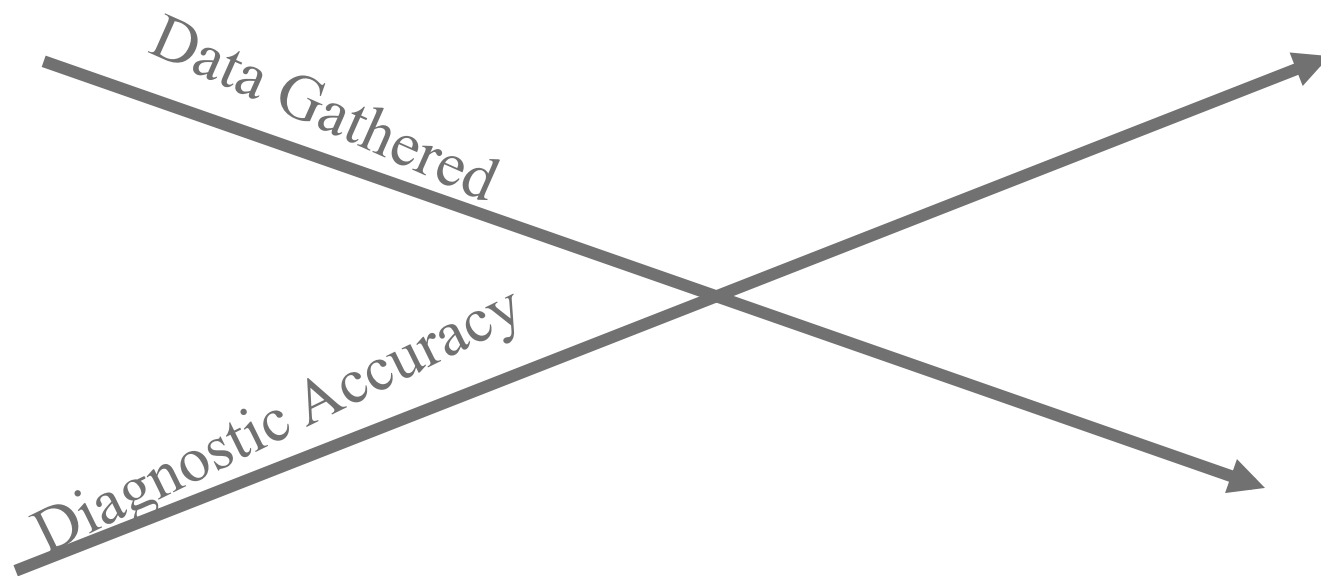
Physical Exam



## OUTPUT

Accurate  
Diagnosis

# Clinical Problem Solving: A paradox



**Novice**

**Expert**

# Quiz 1

## **Compared with novices, Experts:**

1. Make diagnoses more quickly but make more mistakes
2. Make more accurate diagnoses with less data
3. Make more accurate diagnoses because they collect more data.