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Identification of Avoidable Visits to the Emergency Department: Comparison of Two Common Methodologies

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*** TAKE-AWAY MESSAGE ***

- There is great interest in classifying use of hospital emergency care (non-emergency, preventable, etc.)
- Two commonly used methods give divergent classifications
- Combined method may be needed to assess:
  - Adequacy of primary care
  - Stress on overcrowded emergency departments
- Combination may involve:
  - Hierarchy
  - Bayesian approach

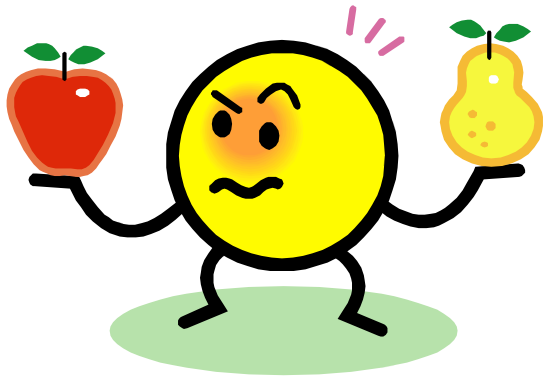
Classification of ED visits

- Why?
  - ED is window on rest of health system
  - ED's are overcrowded
  - Diversion of visits may be beneficial

- How? Two methods
  - Triage-based (CDC-NHAMCS)
  - Diagnosis-based (NYU Algorithm)
  - Both used extensively in research papers, reports, policy statements, etc.

Comparison of methods

- Triage classification
  - Degree of urgency
  - Part of medical record
  - Before definitive diagnosis and treatment



- Diagnosis classification
  - Relationship to primary care
  - Expert panel
  - Probability of being preventable, non-emergent, etc.
  - After definitive diagnosis and treatment

Research questions

1. Do the two methods provide similar or disparate information?

2. Can they be used more effectively?

Research methods

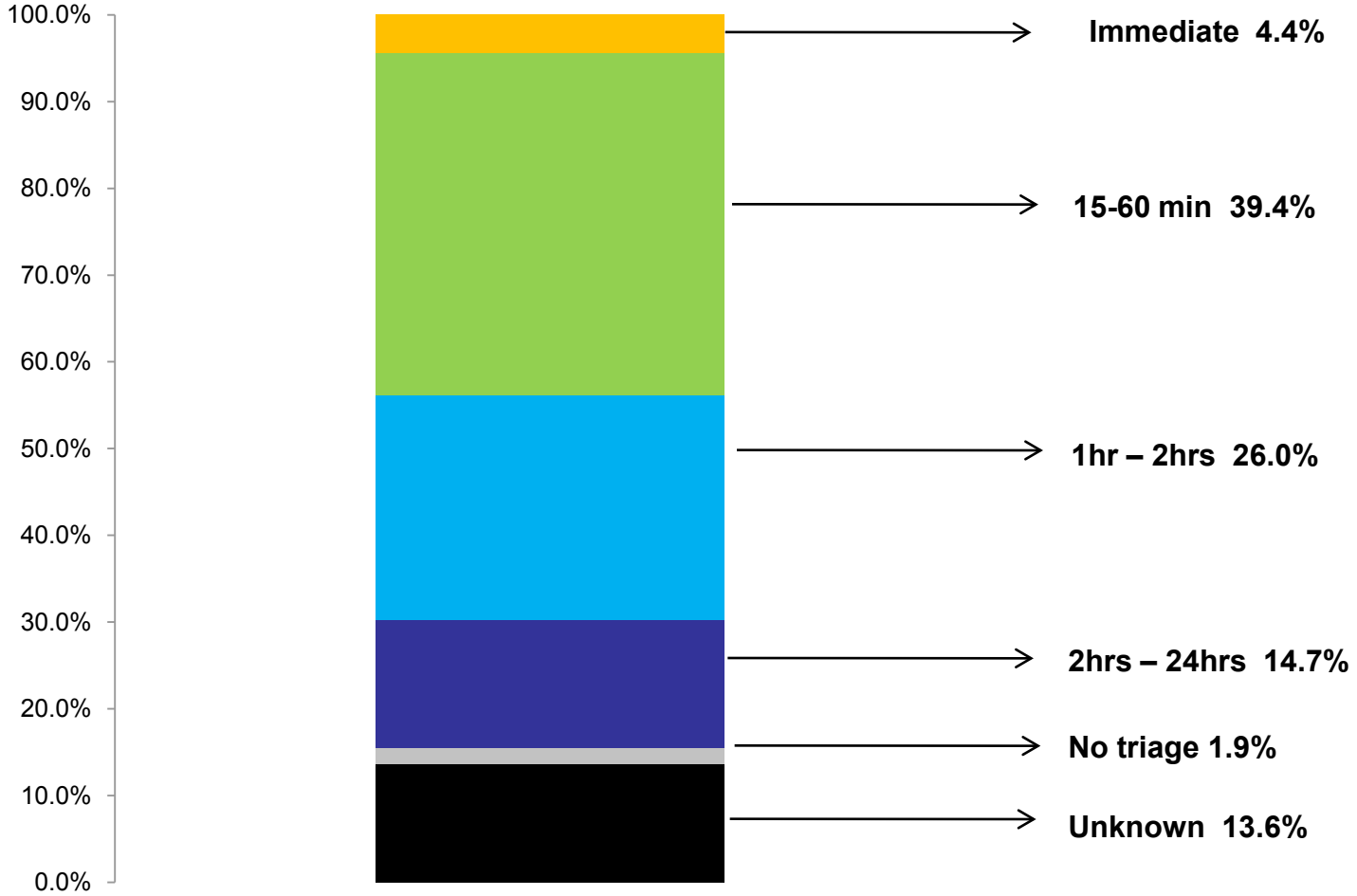
- National Hospital Ambulatory Medical Care Survey (NHAMCS), 2006

- Triage categories recorded by NHAMCS
- Diagnosis categories through application of NYU Algorithm

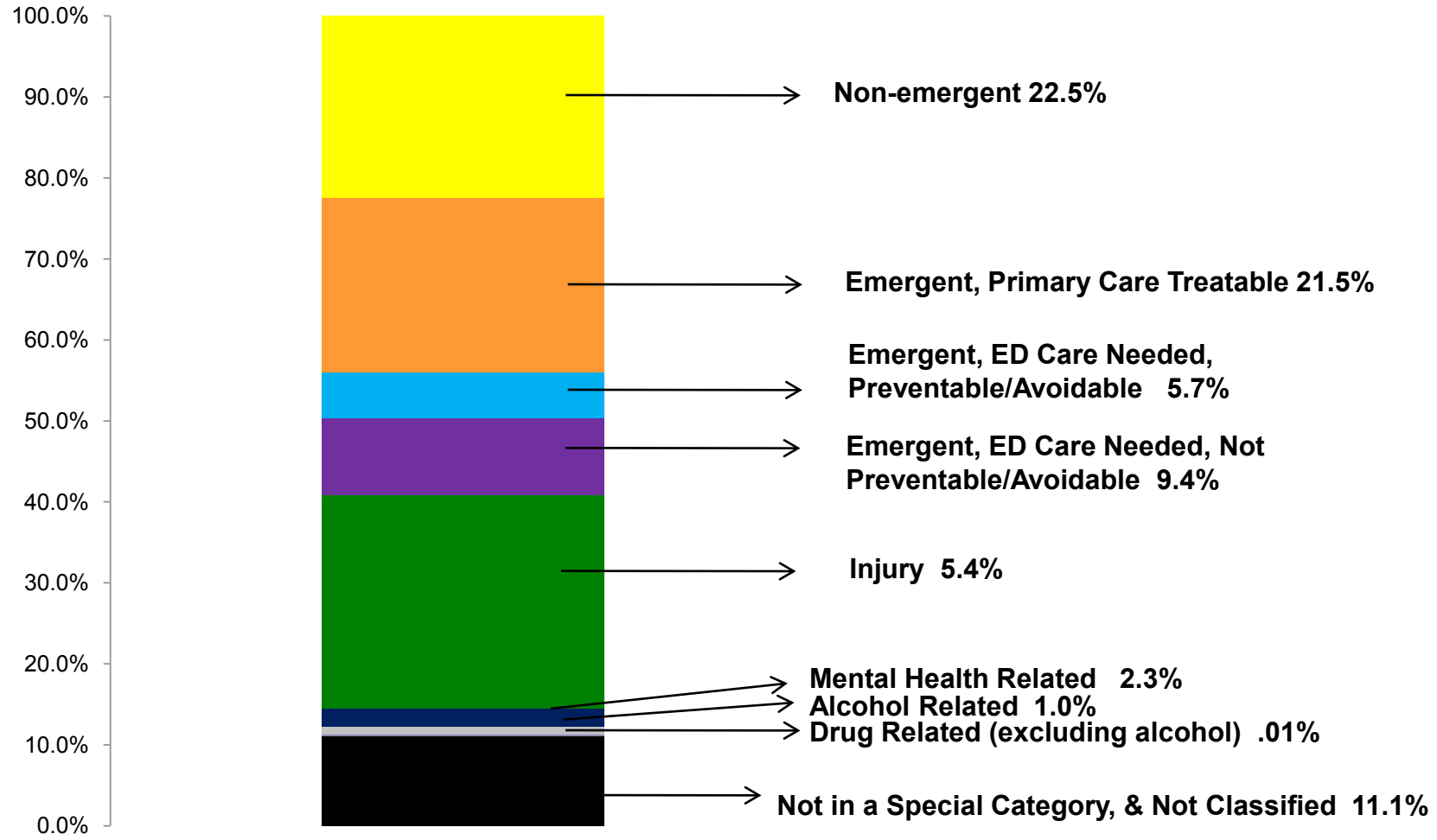
- Examine consistency

- Specific emphasis
  - Non-emergent diagnosis
  - Care not needed within 12 hours

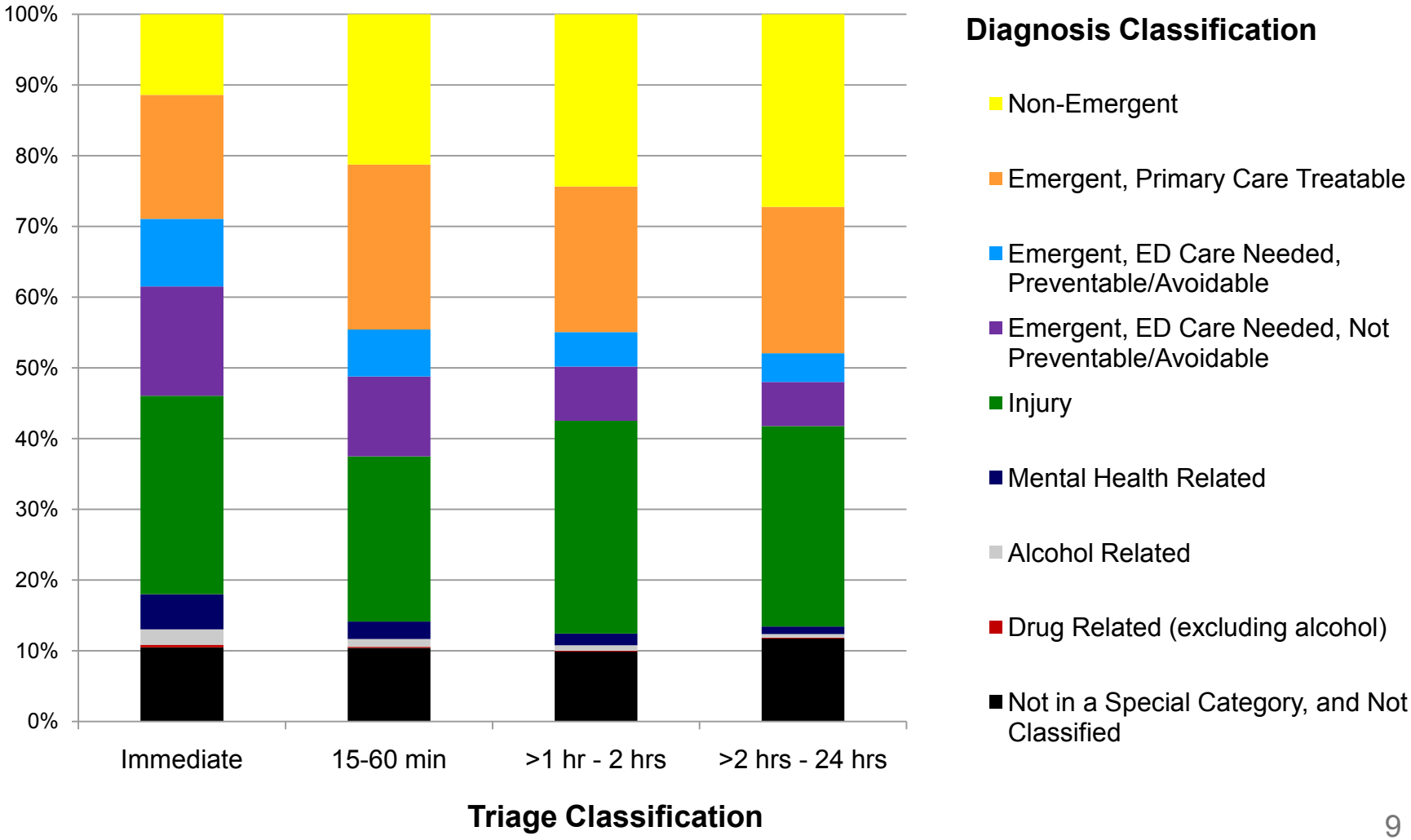
Triage-based classification of ED visits



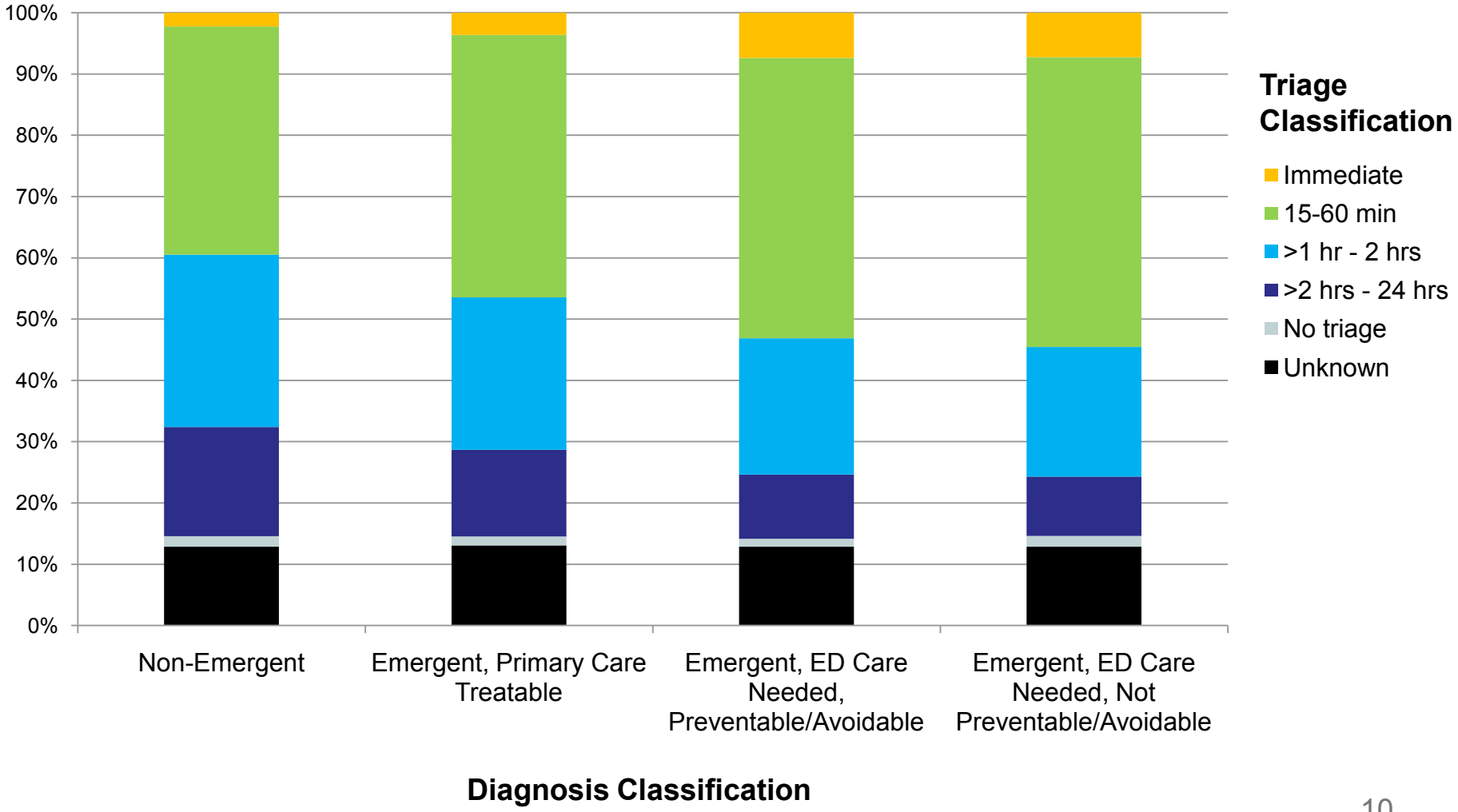
Diagnosis-based classification of ED visits



Diagnosis classification within triage category

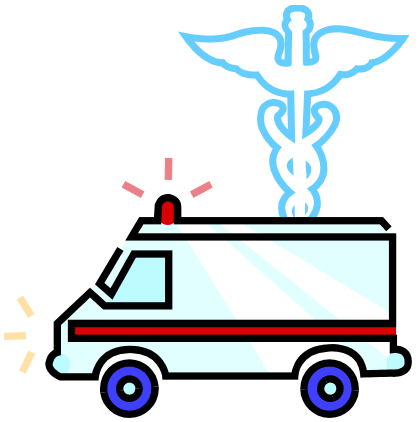


Triage classification within diagnosis category



Classification differences

- Disagreement over urgency of visits
- Differences in information & purpose



- Triage classification (Ex ante)
  - Limited information
  - Rapid assessment ==> immediate use
  - Grey areas ==> screen & confirm
  - Initially assume the worst

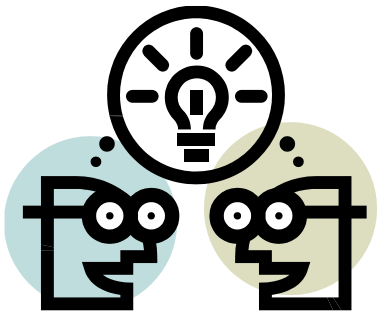
- Diagnosis classification (Ex post)
  - Full information (hindsight)
  - System performance ==> look for avoidable use

Combining methodologies

- Areas of agreement ==> strong evidence of urgency

- Signaling stress on ED
  - Triage more reliable
  - Real time resource use

- Performance of primary care system may require Bayesian approach
  - Triage ==> prior probability
  - Diagnosis ==> posterior probability



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