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Tests as part of a clinical pathway

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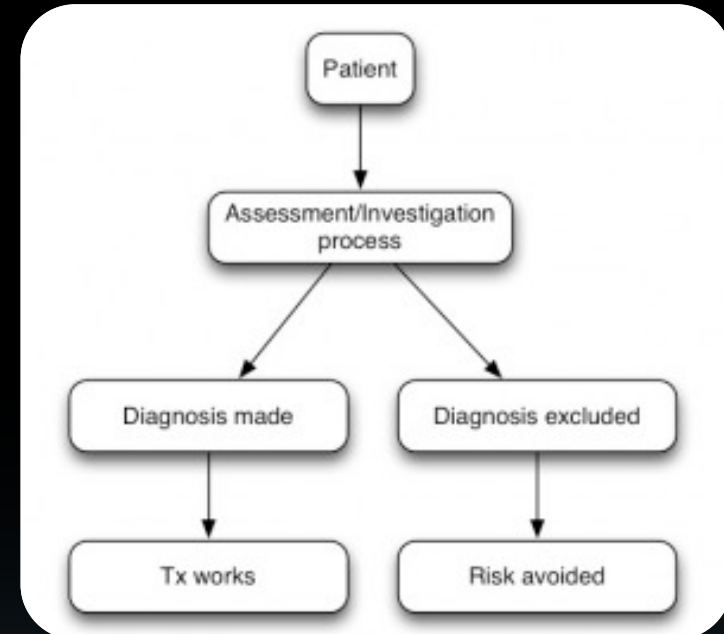
Director CEBM



What is Diagnosis?

Typically someone with abnormal **symptoms** consults a physician, who will obtain a history of their illness and examine them for **signs** of diseases.

The physician formulates a hypothesis of likely diagnoses and may or may not order further **tests** to clarify the diagnosis

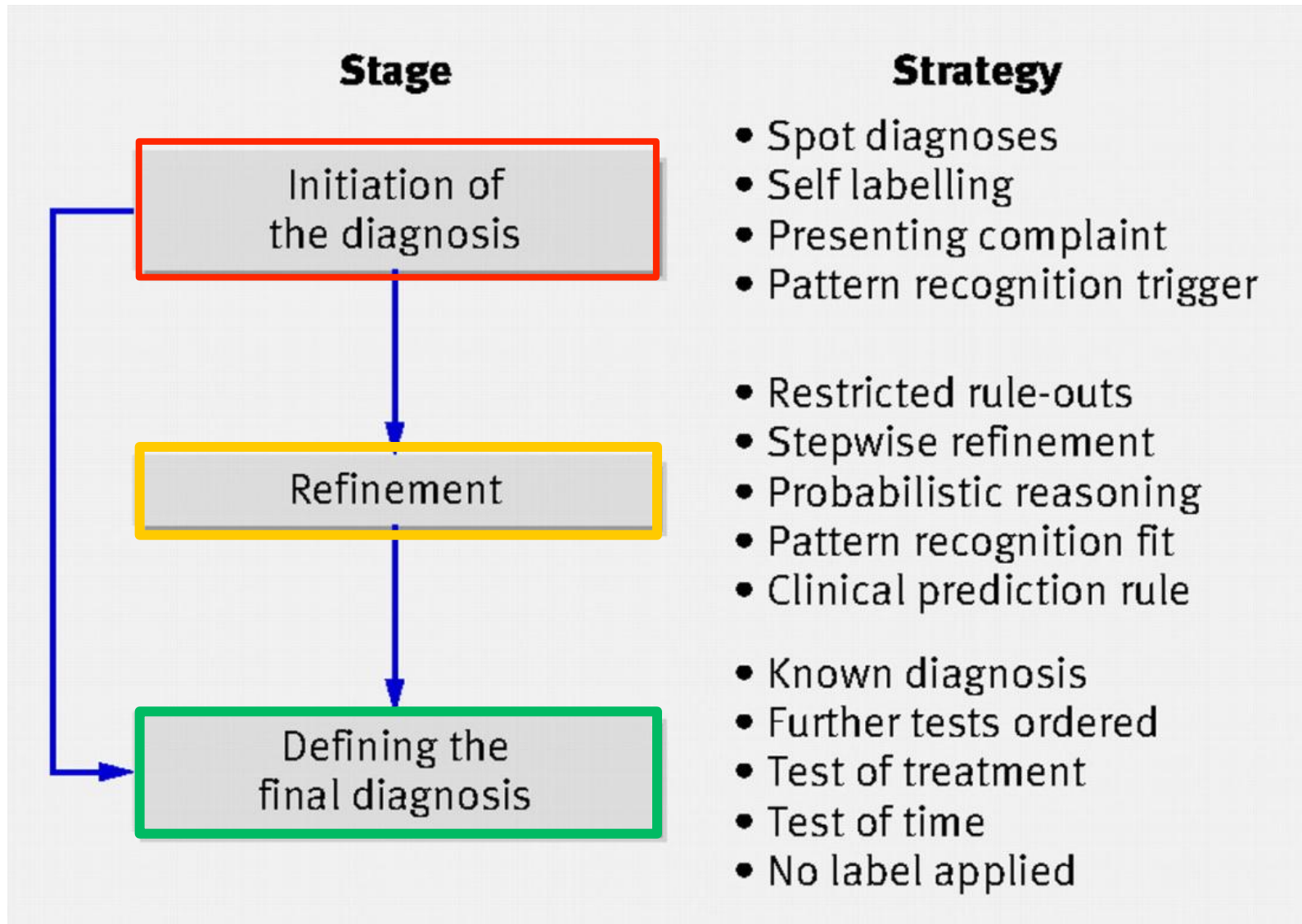


You receive a message from your receptionist on screen



'there is a child coming in who is unwell with a fever. I have booked her in to your emergency slot.'

Fig 1 Stages and strategies in arriving at a diagnosis.



Self-labelling

- Tonsillitis – had it before
- I have a chest infection doctor
- Groin strain
- I have asthma
- **I have a UTI – just like last time**
- I have sprained my ankle
- I have gout
- I have reflux
-

**Patient-Initiated Treatment of
Uncomplicated Recurrent Urinary
Tract Infections in Young Women**

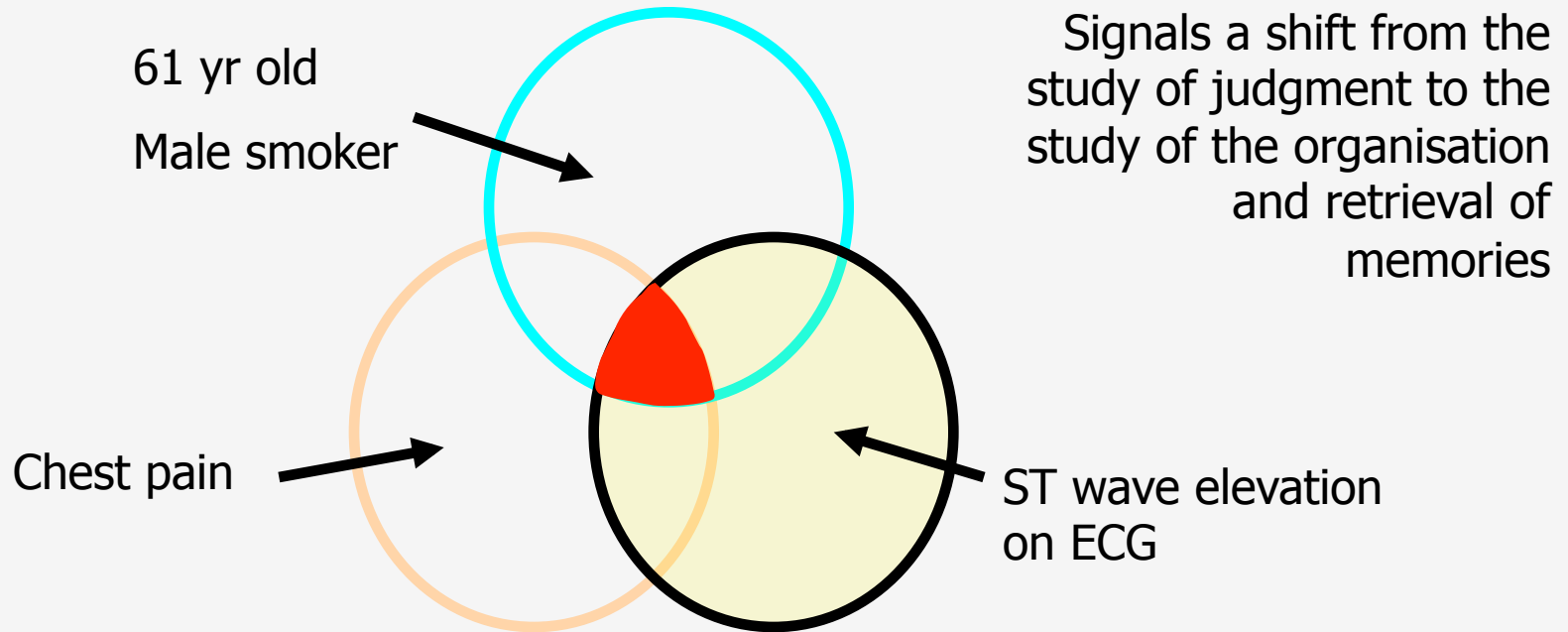
Gupta, K et al Ann of Int med
2001;135:9-16

Refining: Restricted rule-out (or Murtagh's) process

- A learned diagnostic strategy for each presentation
 - Think of the **most common/likely** condition
 - AND... what needs to be **ruled out** also?
- Example: patient with headache ...learn to check for migraine, tension type headache, *but* to rule out temporal arteritis, subarachnoid haemorrhage etc
- Used in 30% consultations

Murtagh. Australian Fam Phys 1990. Croskerry Ann Emerg Med 2003

Refining: Pattern recognition



A number of symptoms and signs are sought, the way that they intersect represents a recognisable pattern.

Pattern recognition fit

49 yr old with severe flare up of Ulcerative colitis

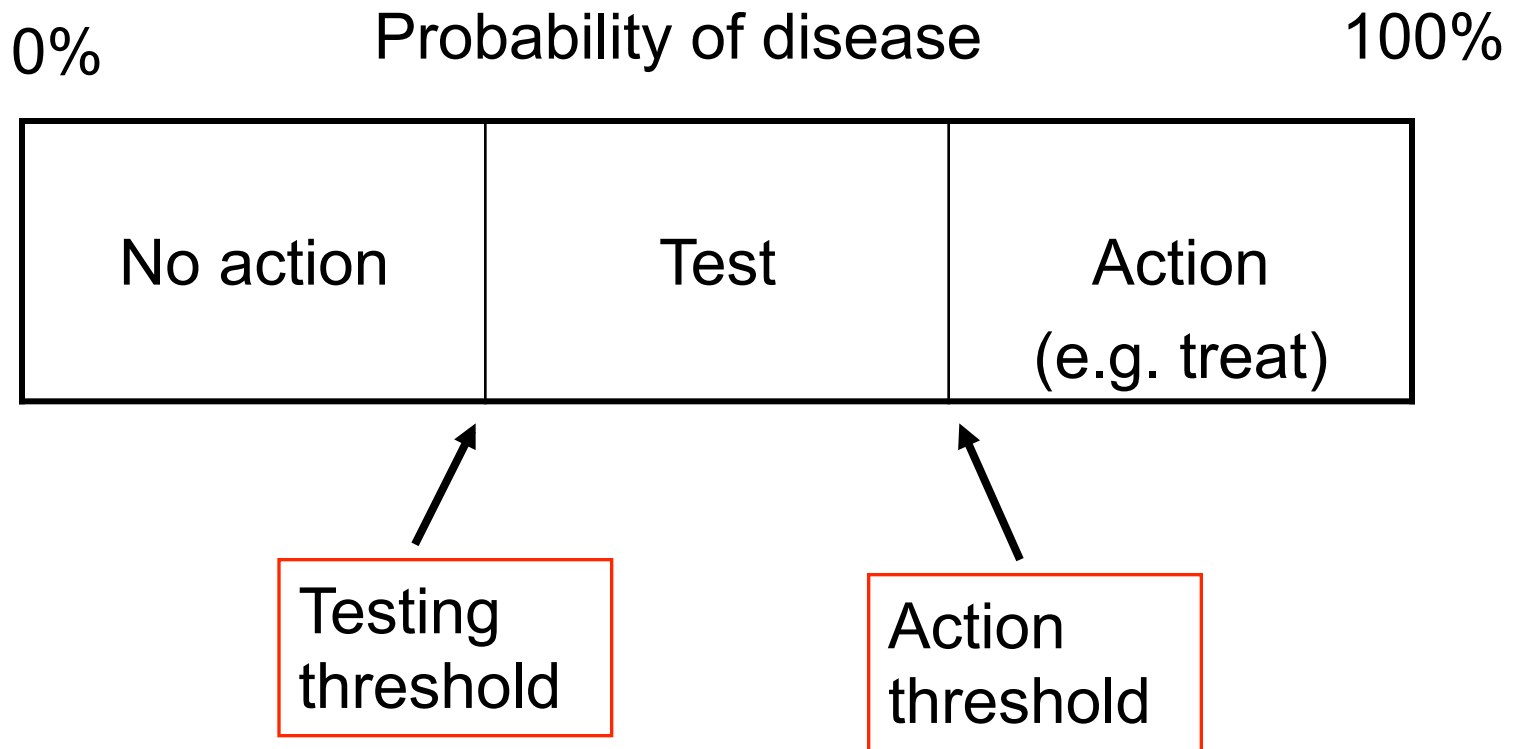


Intravenous hydrocortisone, aminosalicylates, and ciclosporin treatment was started, and after seven days oral prednisolone was introduced.

Clinical prediction rules

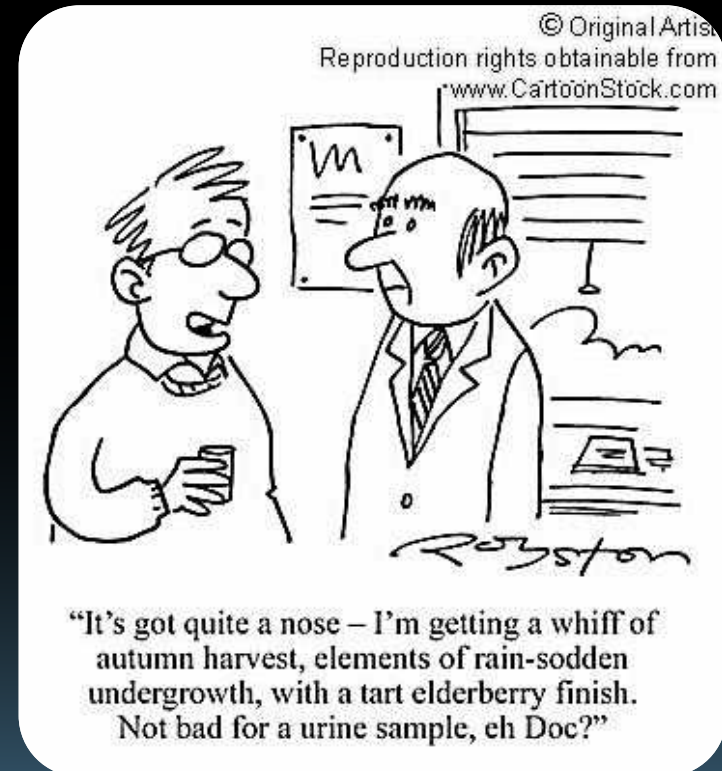
- mathematical tools that are intended to guide clinicians in their everyday decision making¹
- “Ideal” clinical prediction rule similar to a diagnostic test with high sensitivity and specificity
- Basis of the rule is made on predictive factors observed from previous studies

Will the result change management?



Refining: Probabilistic reasoning

- The use of a specific but probably imperfect symptom, sign or diagnostic test to rule in or out a diagnosis.
- E.g. urine dipstick test for UTI



Not bad for a urine sample, eh Doc?
“It’s got quite a nose – I’m getting a whiff of
autumn harvest, elements of rain-sodden
undergrowth, with a tart elderberry finish.”

Developing Diagnostic questions

Your question?

Population, Presentation

Index Text

Comparator Test (Gold Standard)

Outcome (disease of interest)