

Shaping the Future of Clinical Reasoning: Teaching Strategies & Learner Support in 2025



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22 เมษายน 2568
เวลา 13.00 - 16.00 น.

- onsite

ณ ห้อง 810AB ชั้น 8 อาคารเรียนและปฏิบัติการรวม
ด้านการแพทย์และโรงเรียนพยาบาลรามาธิบดี

- online



MEETING ID: 988 4897 4138
PASSCODE: RA2025



สามารถเก็บหน่วยกิตการศึกษา 3 ชั่วโมง

ลงทะเบียน



Introduction to Clinical Reasoning

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What is Clinical Reasoning?

“The **thought process** that guides practice” (Rogers, 1982)



“Clinical reasoning is a **cognitive process** that healthcare professionals use to gather and evaluate information, analyze data, and make informed decisions about **patient care**.”



**Terms clinical reasoning, clinical judgment, problem solving, decision making and critical thinking are often used interchangeably.*

✖ LEADING CAUSES OF DEATH

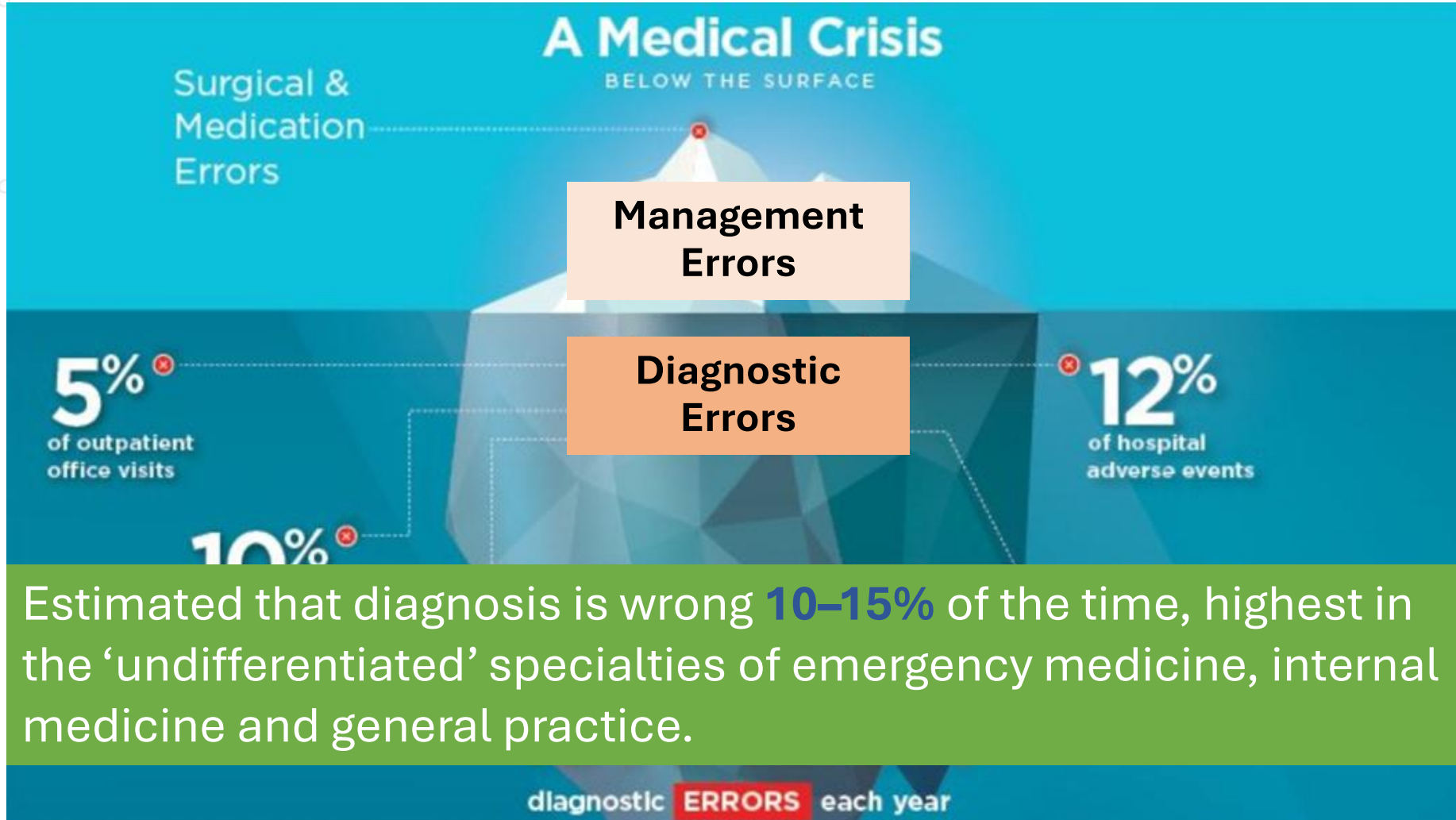


Summary points

Death certificates in the US, used to compile national statistics, have no facility for acknowledging medical error

If medical error was a disease, it would rank as the third leading cause of death in the US

The system for measuring national vital statistics should be revised to facilitate better understanding of deaths due to medical care



Estimated that diagnosis is wrong **10–15%** of the time, highest in the ‘undifferentiated’ specialties of emergency medicine, internal medicine and general practice.

The ECRI has ranked diagnostic errors the number 1 in year 2018

1. Diagnostic errors

2. Opioid safety
3. Care coordination within a setting
4. Workarounds
5. Incorporation of health IT into patient safety programs
6. Management of behavioral health needs in acute-care settings
7. All-hazards emergency preparedness
8. Device cleaning, disinfection, and sterilization
9. Patient engagement and health literacy
10. Leadership engagement in patient safety



Thailand Top 10 Patient Safety Issues 2023



1. Medication Errors

2. Infection Prevention & Control

3. Patient Identification

4. Diagnostic Errors

5. Safe Surgery

6. Infection and Exposure for Healthcare

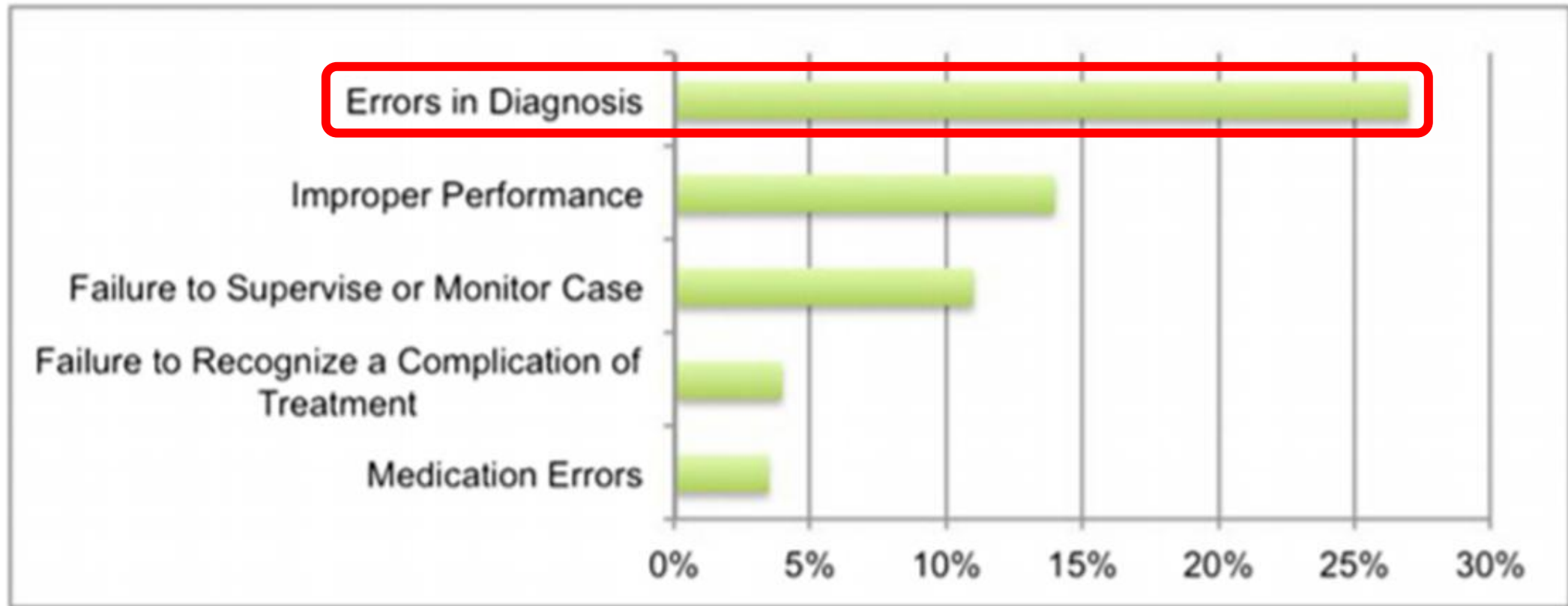
7. Laboratory/Pathology Inaccuracies

8. Blood Safety

9. Health Information Security

10. Antimicrobial Resistance (AMR)

Figure 1 Top alleged medical error named in claims where the patient expired (Physician Insurers Association of America (PIAA) Data Sharing Project Data 1985–2009, Physician Insurer, Vol 55, 2010).



Factors to Diagnostic Error

Cognitive errors
contribute to
75%

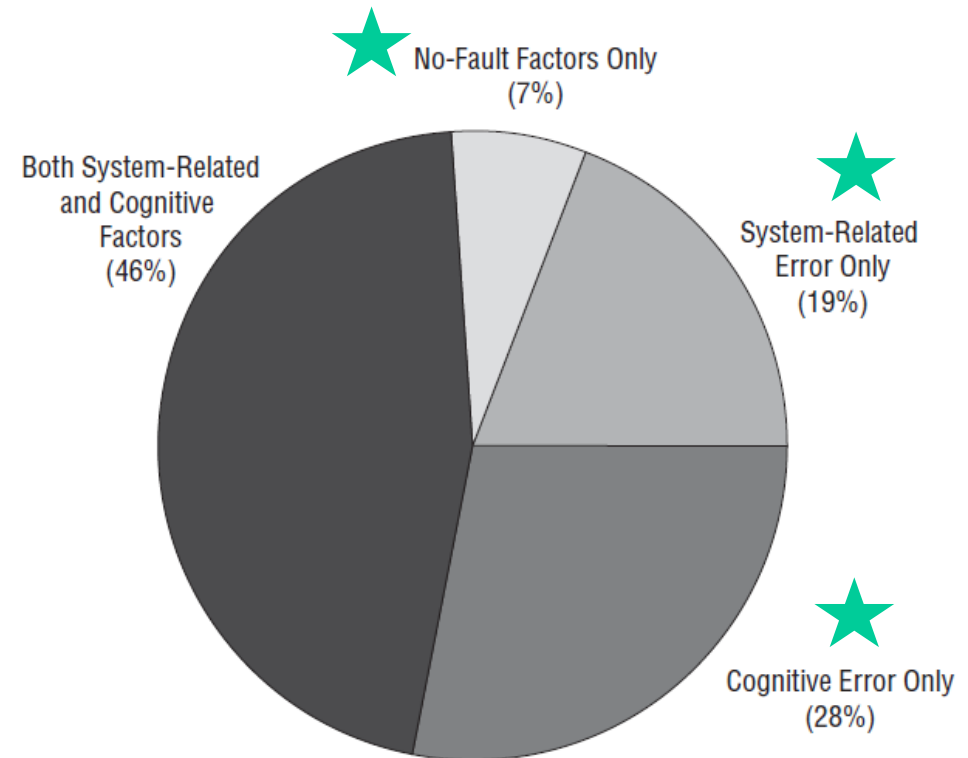


Figure. The categories of factors contributing to diagnostic error in 100 patients.

System-related factors (19%)

Inefficient process	40%
High workload	34%
Inadequate handoff	10%
Insufficient resources	9%
Non-handoff communication error	5%

Cognitive factors (28%)

Inadequate information verification	41%
Flawed information processing	31%
Insufficient data gathering	19%
Faulty knowledge	9%



The NEW ENGLAND
JOURNAL of MEDICINE

Improving Diagnosis in Health Care — The Next Imperative for Patient Safety

Hardeep Singh, M.D., M.P.H., and Mark L. Graber, M.D.

The 1999 Institute of Medicine (IOM) report *To Err Is Human* transformed thinking about patient safety in U.S. health care. On its 15th anniversary, a topic largely missing from that report is finally getting its due. With its new report, *Improving Diagnosis in Health Care*, the IOM has acknowledged the need to address diagnostic error as a “moral, professional, and public health

imperative.”¹ The new report emphasizes that diagnostic errors may be one of the most common and harmful of patient-safety problems.

Why has it taken so long for the patient-safety movement to recognize the importance of diagnostic errors? Perhaps early safety advocates focused on more glaring problems, such as procedure-related and medication er-

rors, because diagnostic errors are more difficult to detect and understand and less amenable to systems-based interventions. Diagnostic error may involve any of various types of overlapping missed opportunities to make a correct and timely diagnosis; a diagnosis may be missed completely, the wrong one may be provided, or diagnosis may be delayed, all of which can lead to harm from

How do you teach Clinical Reasoning?



“Clinical Reasoning should not be left to develop **haphazardly** or by chance.”

Jerome P. Kassirer
Editor-in-Chief of NEJM 1991-1999

“Clinical reasoning is an **important skill** for all clinicians and historically has **rarely** been **formally taught** either at **undergraduate or postgraduate** level.”

Barlett M, et al (2015)
Education for Primary Care

Four Stages of Competence

**Unconscious
Incompetence**



**Unconscious
Competence**



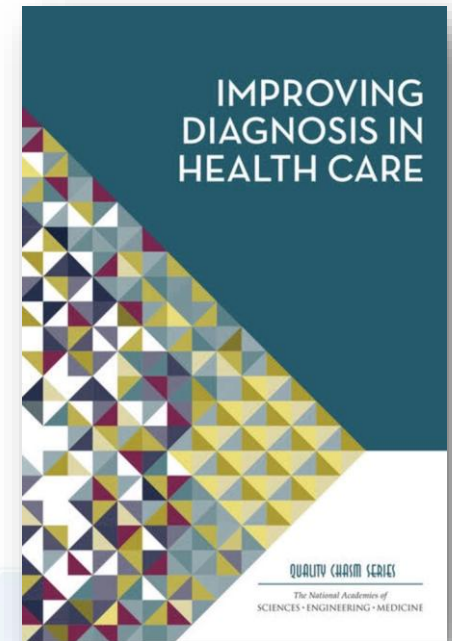
**Conscious
Competence**



**Conscious
Incompetence**

Goals for Improving Diagnosis/Reducing Diagnostic Error (from Box-S1)

- **Teamwork** in diagnostic process (patients, families)
- Enhance **education/training in diagnostic process***
- IT supported
- Identify, **learn from errors or near misses**
- Establish culture
- Develop **reporting environment**
- Design payment and care support diagnostic process
- Funding and **research**

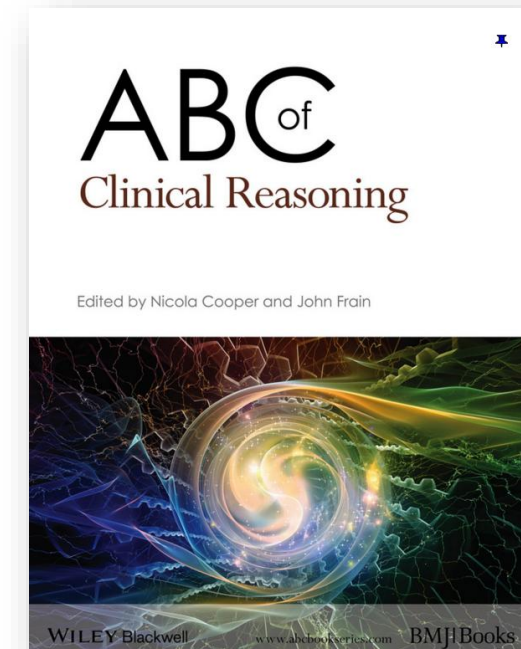
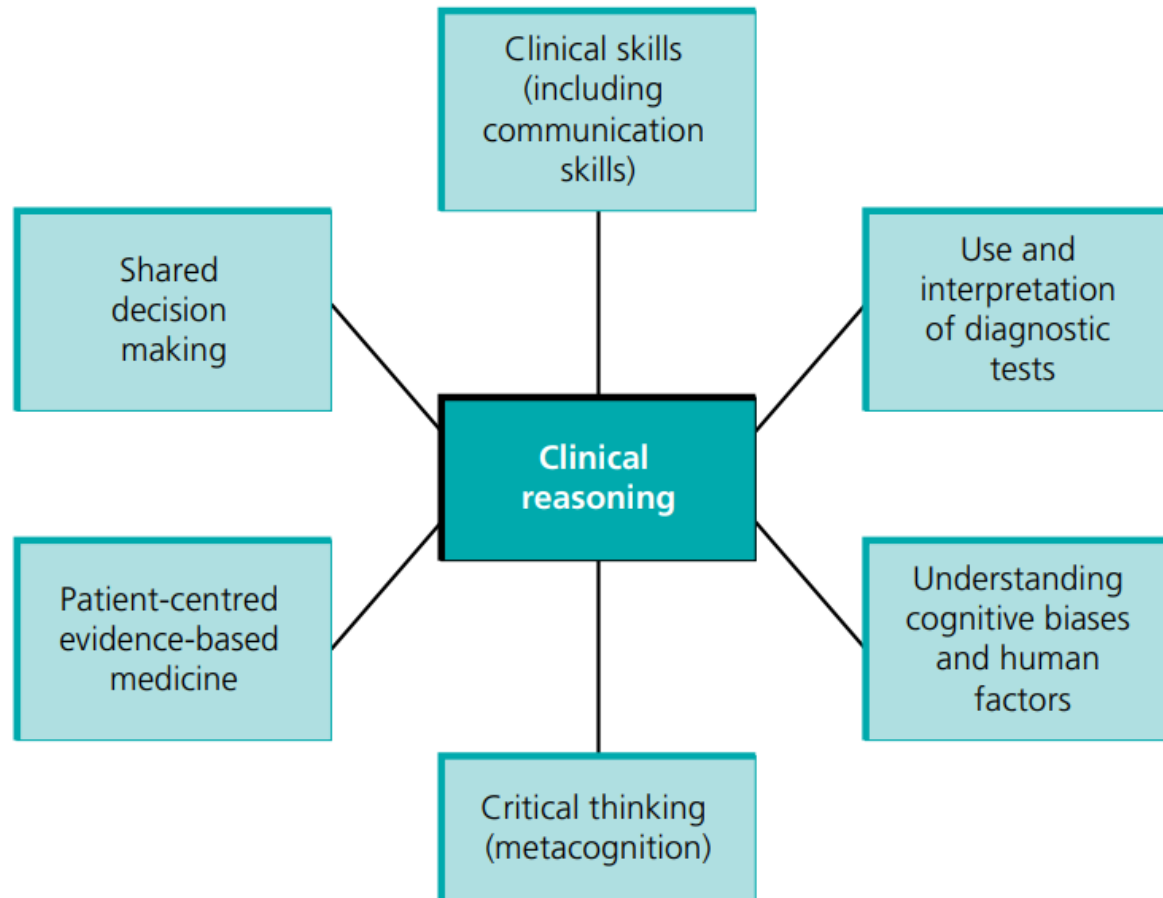


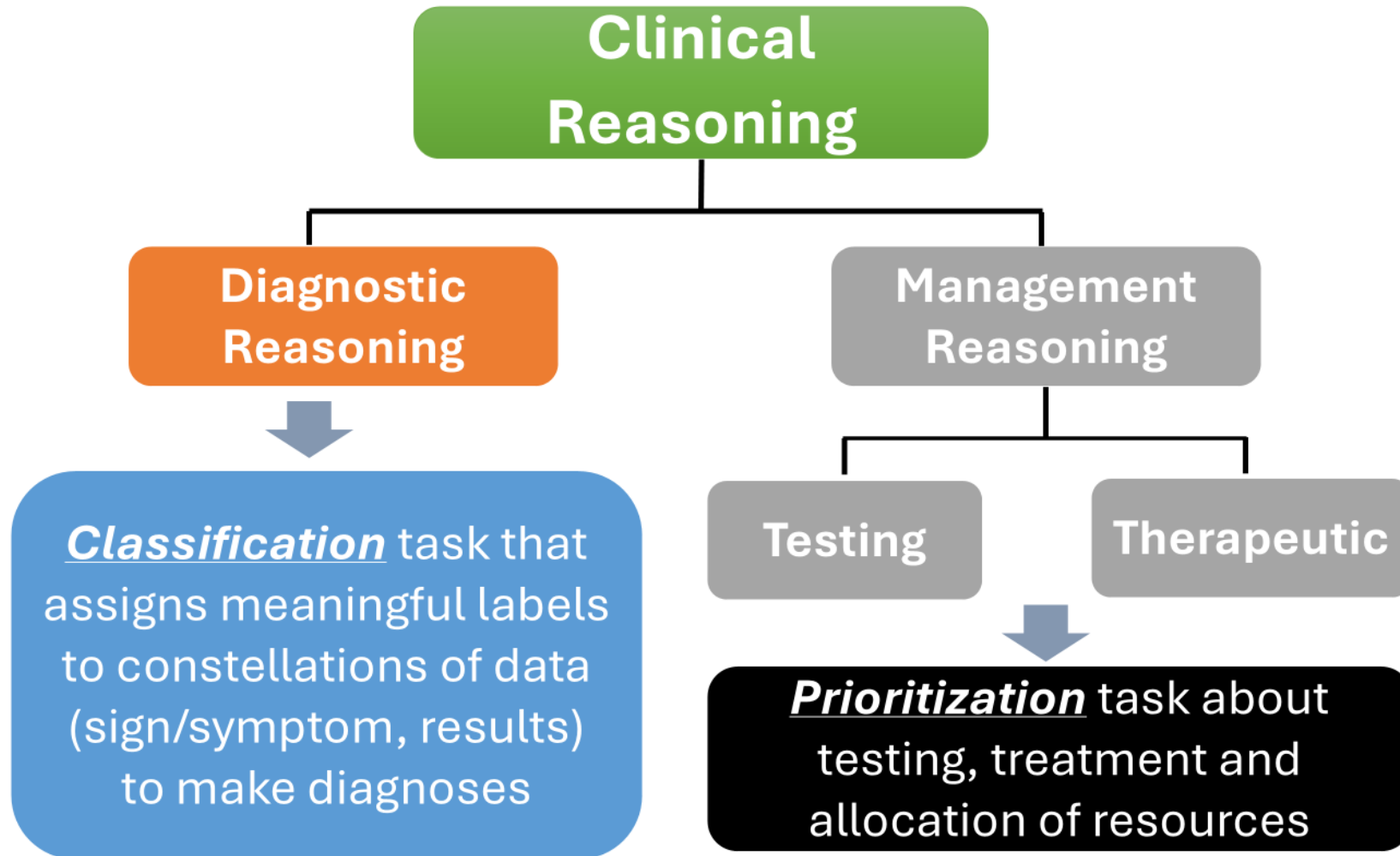
Story 1

- ผู้ชายอายุ 40 ปี มีอาการปวดที่บริเวณใบหน้า ซีกขวา เป็นมา 2 เดือน
- กลืนอาหารได้ปกติ ไม่มีน้ำหนัลด ไปตรวจกับทันตแพทย์ แนะนำให้ทำการถอนฟัน
- หลังถอนฟัน อาการปวดยังไม่ดีขึ้น ไปหาแพทย์ที่คลินิกได้ยาแก้ปวดมาทาน (กลุ่ม NSAIDs)
- 1 สัปดาห์ มีอาการปวดท้องขึ้นมาทันที ไปห้องฉุกเฉิน และได้รับการผ่าตัดพบว่า มี gastric perforate
- หลังผ่าตัดไม่มีภาวะแทรกซ้อน แต่ยังคงมีอาการปวดบริเวณใบหน้าซีกขวาเช่นเดิม



The Elements involved in Clinical Reasoning





Management Reasoning

Lipoma

Sarcoma

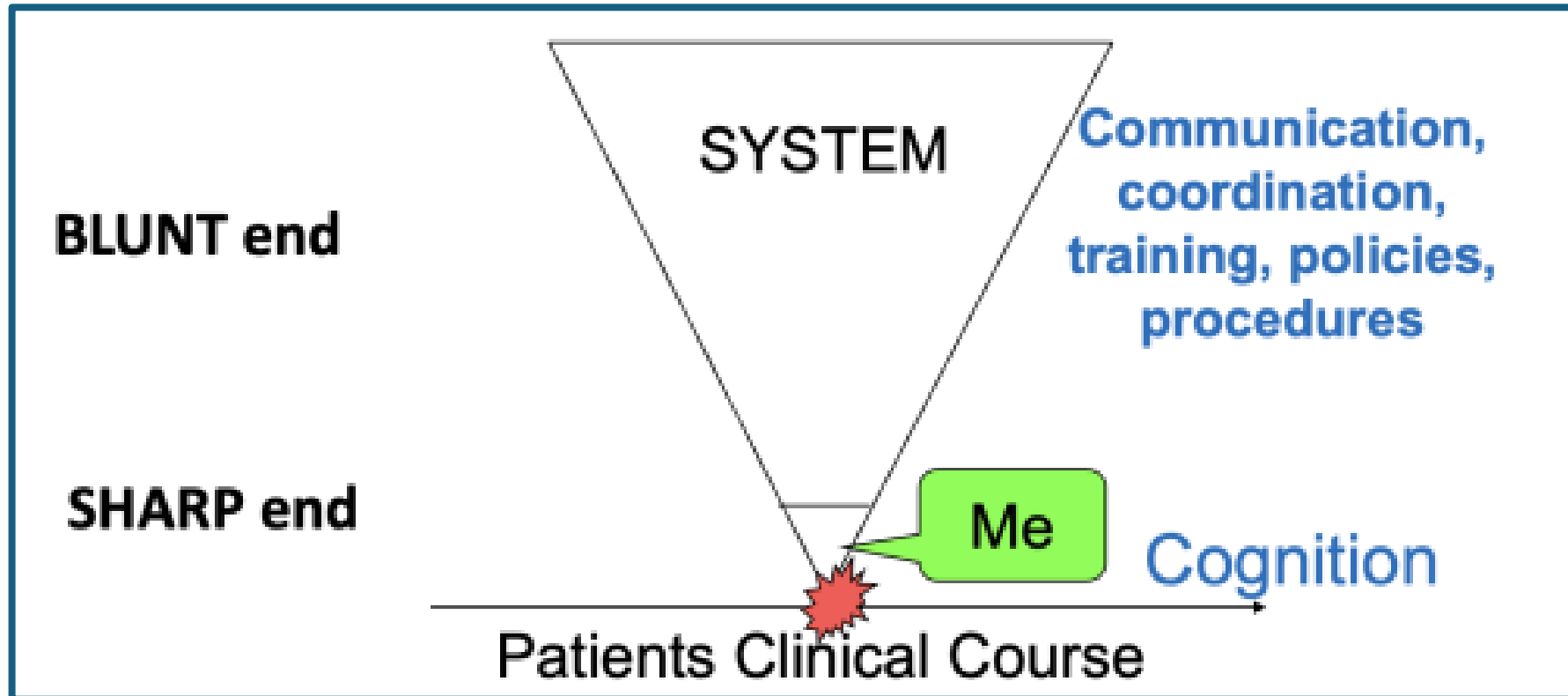
“One Diagnosis but many management options”

“Dealing with uncertainty”

Linear Case (Simple)

Non-linear Case (Complex)

RCA

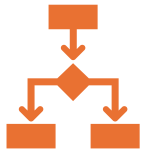


None of these, however, was designed to consider the cognitive elements of patient care, and these cognitive aspects are typically the most relevant to understanding the origins of diagnostic error.

Table 1. Comparing System-Focused RCA to Systems PLUS Diagnosis-Focused RCA

	System-focused RCA	Systems PLUS Diagnosis-Focused RCA
Safety issue in the cases examined	The focus is squarely on system issues. The safety event is generally NOT diagnosis-related. Cases involving individual performance, including clinician judgment, are sent for peer review.	Systems-related PLUS diagnosis-related cases. Applies to many or most cases previously sent for peer review. Focus is on both systems-related and cognitive factors, and the human factors issues that tie them together
Where was the incident?	Typically inpatient care	Inpatient and ambulatory care PLUS cases involving care transitions.
RCA team members	Core members: Patient safety staff, clinician experts. Seldom included: involved clinicians and affected patients/family members.	Same core members PLUS the involved clinicians and staff with expertise in clinical reasoning and cognition PLUS patients/family members, if appropriate.
Steps of the RCA	Gather all the facts. Where did things go wrong? Why? How can this kind of problem be prevented going forward? Share lessons learned.	Same as system approach but start immediately PLUS include analysis and interventions focused on cognitive and contextual factors related to diagnosis.
Recommended actions	Focus on finding strong interventions. Avoid emphasis on education, training, reinforcing policy, and other weak actions.	Strong interventions PLUS education , as it may be more effective as an intervention in diagnosis- than in the system-focused RCA.

Clinical reasoning skills can contribute to a doctor's happiness



Confidence
in Decision-
Making



Improved
Patient
Outcomes



Efficiency
and Reduced
Burnout



Enhanced
Problem-
Solving



Stronger
Patient
Relationships

Clinical Reasoning

