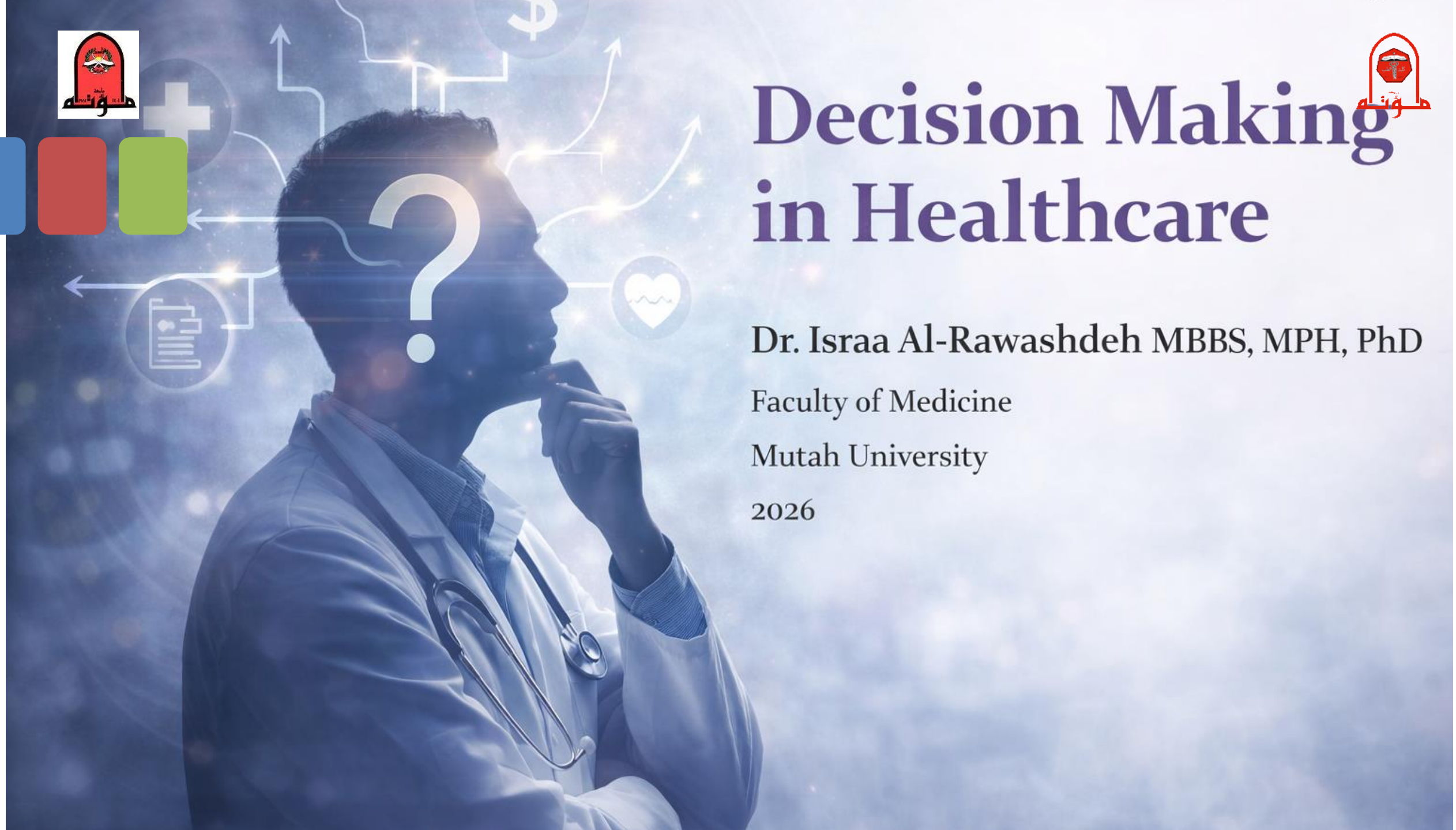

Decision Making in Healthcare

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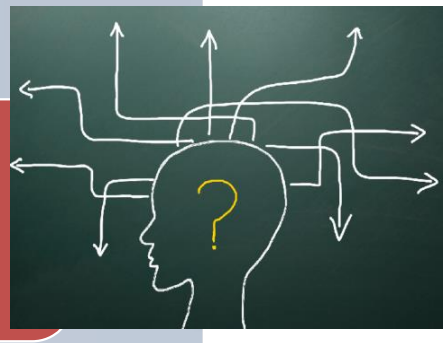
OUTLINE



- Definitions
- Types of problems, decisions, and conditions of DM.
- Models of decision making
- Evidence Based Decision Making.

INTRODUCTION

- Making decisions is an essential part of everybody's daily activities.
- Managers must be effective decision-makers
- Decisions are an essential part of all managerial functions.

DM is a science!
DM is an art!
Science → based on logic & data (Evidence)
Art → based on judgment & adaptability

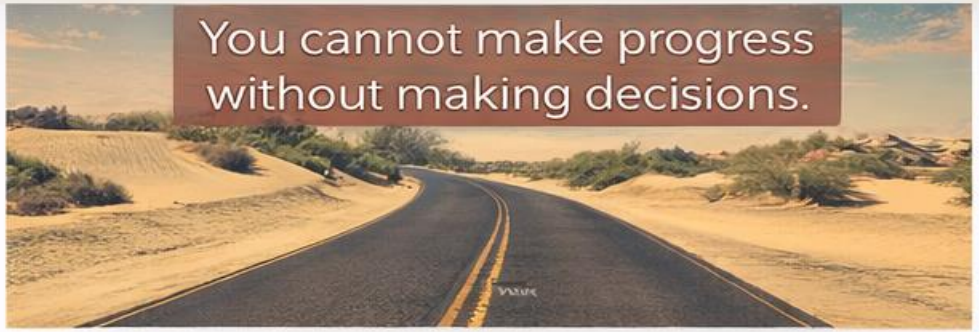
DEFINITION OF DECISION MAKING

- Goal-directed behavior in the presence of alternatives (Business Dictionary).
- Selecting the best option among available choices
- Process of identifying and solving problems (Daft 1998).
- Transforming information (input → output) (Herrmann 2015).

Is it this simple??

Well; It is not!

WHY DECISION MAKING IS COMPLEX IN HEALTHCARE



- Healthcare operates within a complex system.
- Making decisions in healthcare is often complicated by factors such as:

Uncertainty of information,

Multiple perspectives of decision-makers

External influences
- ✔ Economic
- ✔ Political
- ✔ Social
- ✔ Environmental

Remember: Non-decision = also a decision

TYPES OF PROBLEMS

- **Crisis Problems**
  - Serious, Require immediate action
  - Example: pandemics, disasters, Cyber Security Breach
- **Non-Crisis Problems**
  - Requires resolution but less urgent, Routine.
  - Example: Scheduling staff rotations
- **Opportunity Problems**
  - A situation that offers potential for improvement and organizational gain if appropriate actions are taken
  - Example: adopting AI, lack of dominant competition, changes in population needs

TYPES OF DECISIONS

Programmed Decisions

- Made regularly, repetitive, and routine
- Related to structured problems (clear problem, defined criteria)
- Based on complete and available information
- Guided by rules, policies, and standard procedures
- Focused on efficiency

Example:Pre-set rules, protocols, policies, computerized systems

Routine

Non-Programmed Decisions

- Non-routine and occur less frequently
- Related to **unstructured problems** (unclear or incomplete informationn)
- Unique and require special attention
- More complex and often more important
- Dependent on judgment and creativity

Example: **Responding to a rare adverse drug reaction**

Complex & Unique

DECISION-MAKING CONDITIONS

Certainty

- A situation in which:

  The outcome of every alternative is **known**

  Therefore, the manager is able to make an **accurate decision.**

E.g. Choosing a supplier with fixed price and guaranteed delivery

Risk

- The manager can **estimate** the probability of **outcomes**

  that result from the choice of particular alternatives.

- Information is incomplete, but probabilities are known

E.g. Selecting a treatment with known success rates and possible complications

Uncertainty

- The decision-maker is not aware of all available alternatives
- Outcomes and their probabilities are **unknown.**

E.g. Experimental treatment for a novel virus

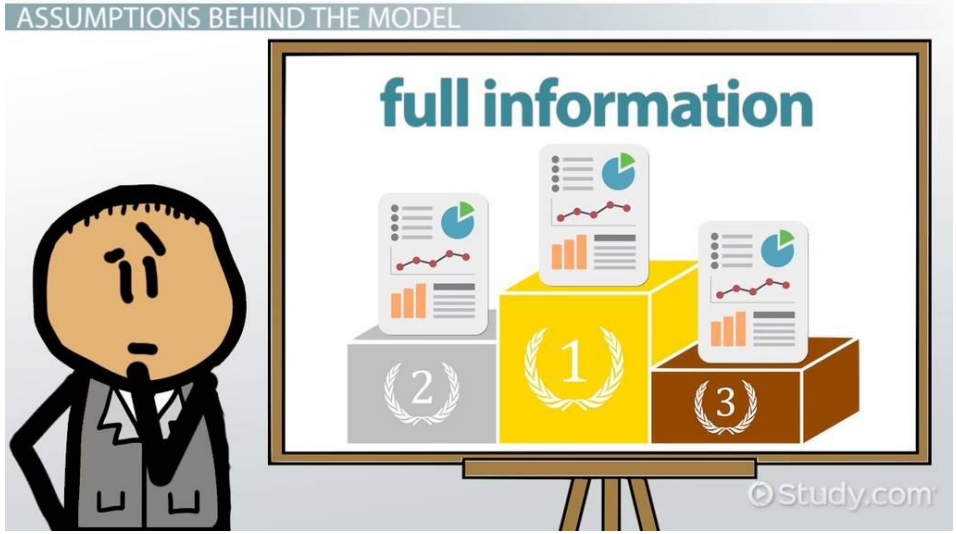
MODELS OF DECISION MAKING

- Decision-making can be approached using different models depending on:
  - The availability of information
  - The complexity of the problem
  - The time available for decision-making
- These models are classified into:
- **Rational (Classical) Model** (Most popular type of models)
- **Non-Rational Models**, which include:
  - Incremental Model
  - Satisficing Model
  - Garbage Can Model

RATIONAL (CLASSICAL) MODEL

- The rational model is a structured and systematic approach to decision-making.
- It assumes that:
- The problem is clearly defined
- All possible alternatives are known
- Complete and accurate information is available
- Outcomes of each alternative can be predicted

RATIONAL (CLASSICAL) MODEL



The decision-maker:

- Evaluates all alternatives logically
- Selects the option that maximizes outcomes
- **In healthcare:**

This model is ideal but rarely fully applicable due to:

- Time constraints
- Incomplete information
- System complexity

Rational model = *optimal decision under ideal conditions*

NON-RATIONAL: INCREMENTAL MODEL

- **("STEP-BY-STEP APPROACH")**
- Decisions are made gradually through small, sequential steps rather than one large decision.

➢ Key characteristics:

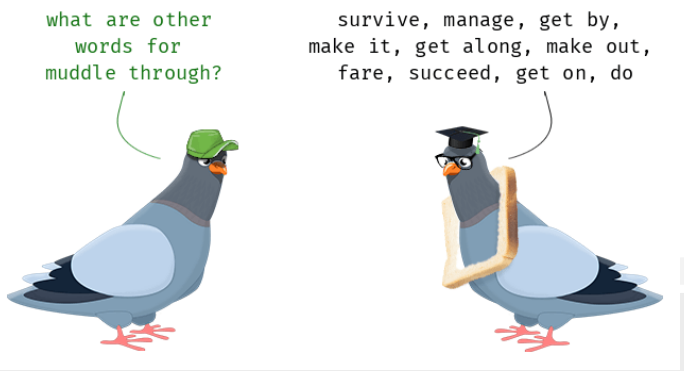
- Decisions are developed over time
- Changes are made <u>incrementally</u>
- Trial-and-error approach is used
- Mistakes are corrected gradually

‘Slowly building the blocks’ 👶 **"Baby steps"**

NONRATIONAL: INCREMENTAL MODEL

The process includes:

- Identifying the problem
- Developing possible small changes
- Selecting and testing modifications



📌 **In healthcare:**
Used in policy changes or system improvements
Not fully rational — relies on continuous adjustment rather than complete analysis

NON-RATIONAL: SATISFICING MODEL

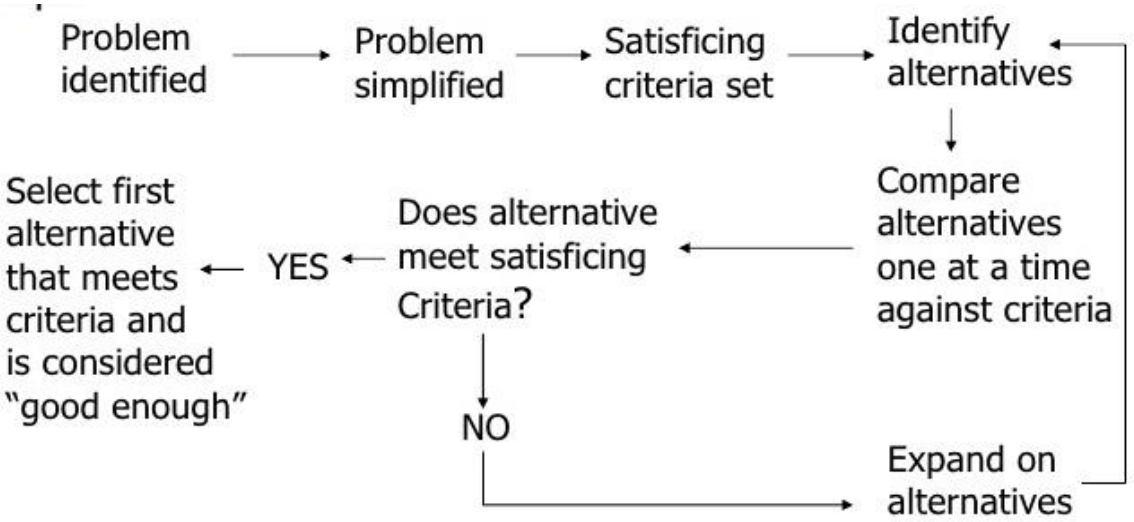
- This model focuses on selecting a solution that meets acceptable criteria rather than the optimal one.

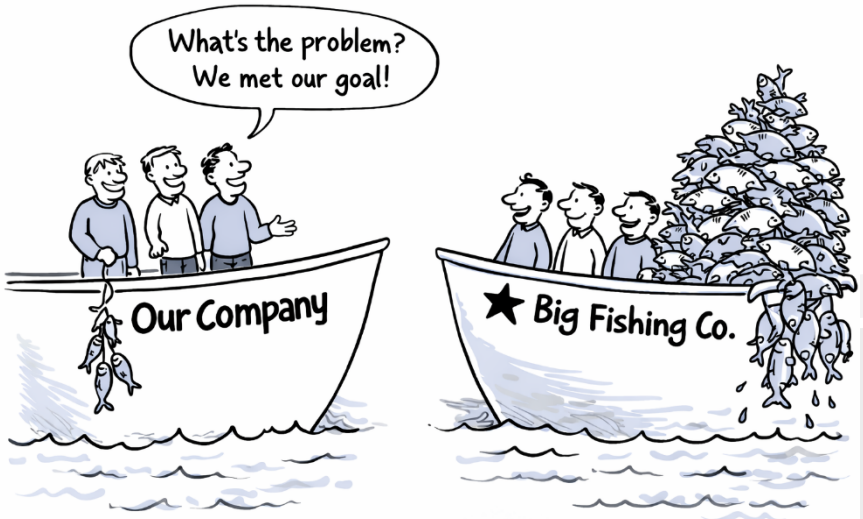
✓ **It is used when:**

- Time is limited
- Information is incomplete
- The problem is complex

✓ **Decision-makers:**

- Set minimum acceptable standards
- Choose the first option that satisfies these standards
- Stop searching once a “good enough” option is found (not optimal)✅ **"Close enough!"**





📌 **Examples in healthcare:**
Allocating limited ICU beds
Hiring staff quickly during shortages

GARBAGE CAN MODEL

- This model describes decision-making in highly complex and unpredictable environments.

✓ **Used when:**

- Problems are unclear
- Goals may be inconsistent
- Participants change over time

✓ **Decisions result from the interaction between:**

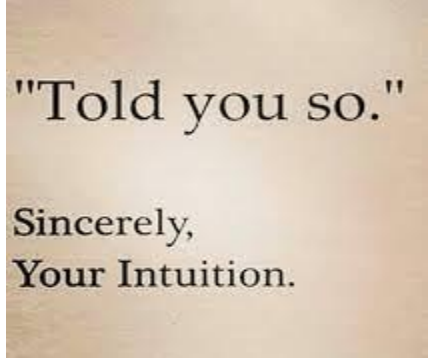
- Problems
- Solutions
- Participants
- Opportunities

In this model:

- Solutions may exist before problems
- Decisions are not made in a logical sequence
- The process may appear random

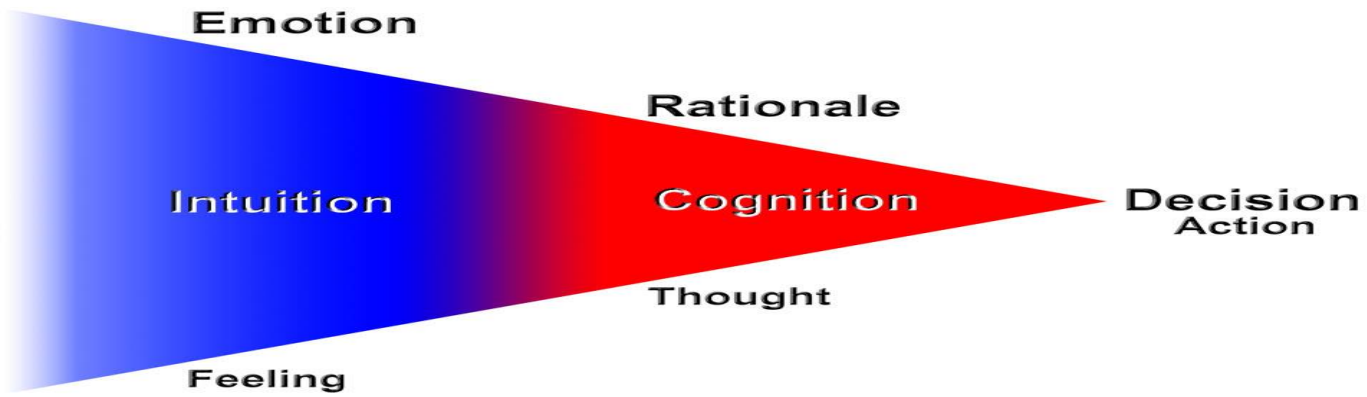
📌 **Examples in healthcare:**
Early pandemic responses
Rapid policy decisions under uncertainty

The Role of Intuition in Decision Making



- Intuition refers to decisions that arise quickly without conscious analytical reasoning.
- Rapid and automatic
- Based on experience and pattern recognition
- Requires minimal deliberate analysis

- Most organizational decisions are not made in a logical, rational manner (Daft 2012)
- 70% of physicians use intuition in complex cases

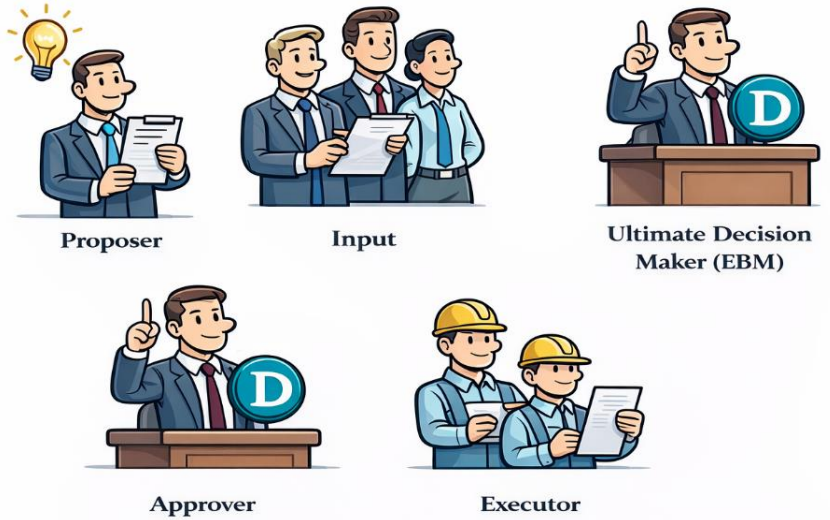


📌 In healthcare:
Used in complex or emergency situations
Supports, but does not replace, evidence-based decisions

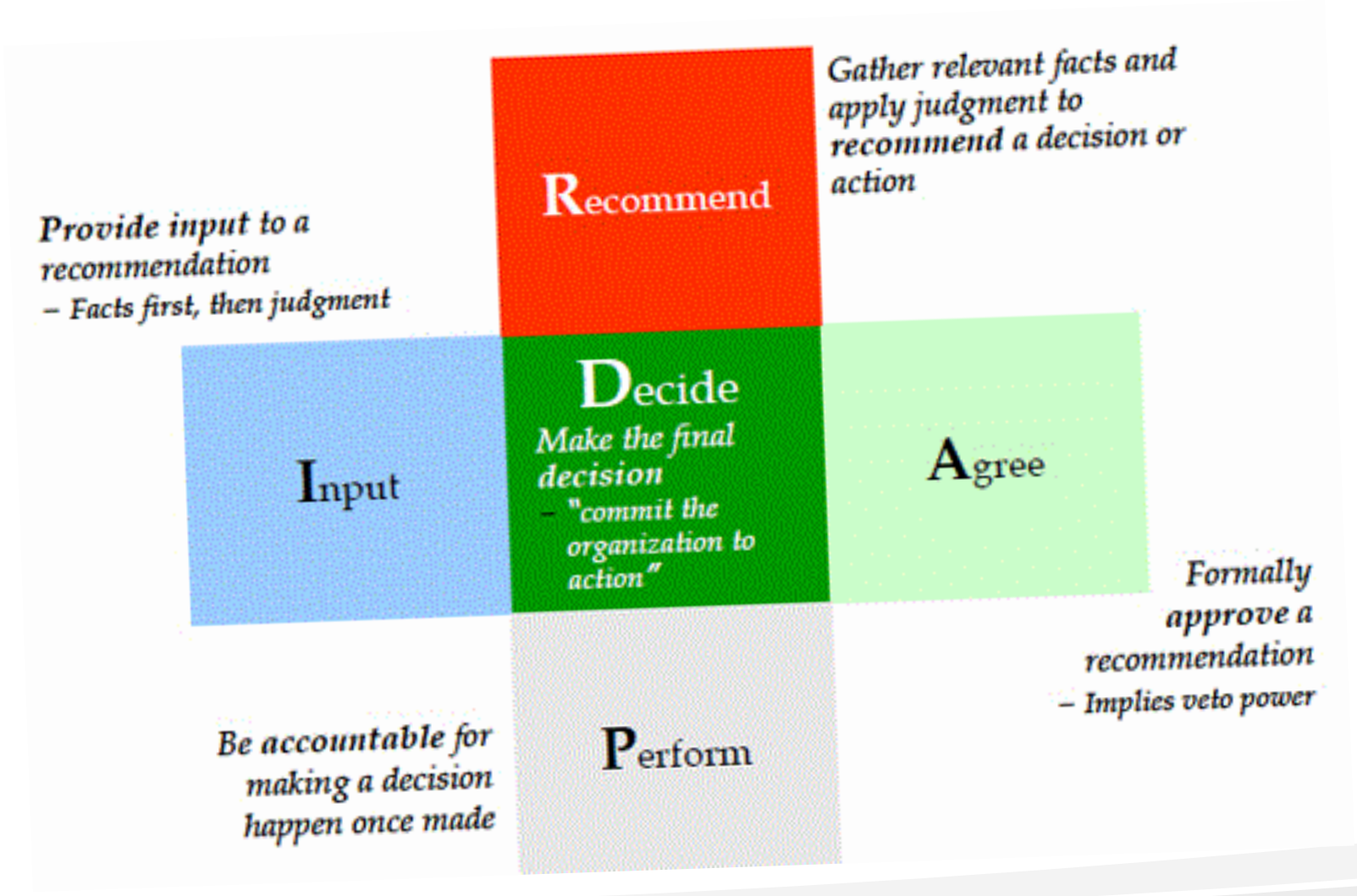
Who Has the D?

Rogers and Blenko 2006

- **Proposer (Recommend):** Responsible for: Developing the proposal, Gathering input , Providing relevant data and analysis , Presenting a timely and well-informed recommendation
- **Input:** Individuals who: Provide expertise, knowledge, and resources , Are consulted during the decision-making process, *Because they are often involved in implementation, their input should be taken seriously.*
- **Approver (Agree):** Individuals in this role have the authority to approve or reject the recommendation. have **veto power (yes / no)**.
- **Ultimate Decision Maker (Decide):** The person who Has the formal authority to make the final decision, Is responsible for the outcome and consequences , Resolves conflicts during the process , Commits the organization to action.
- **Executor (Perform):** Once a decision is made, a person or group of people will be responsible for executing it. *In some cases, the executor may be the same as the proposer.*

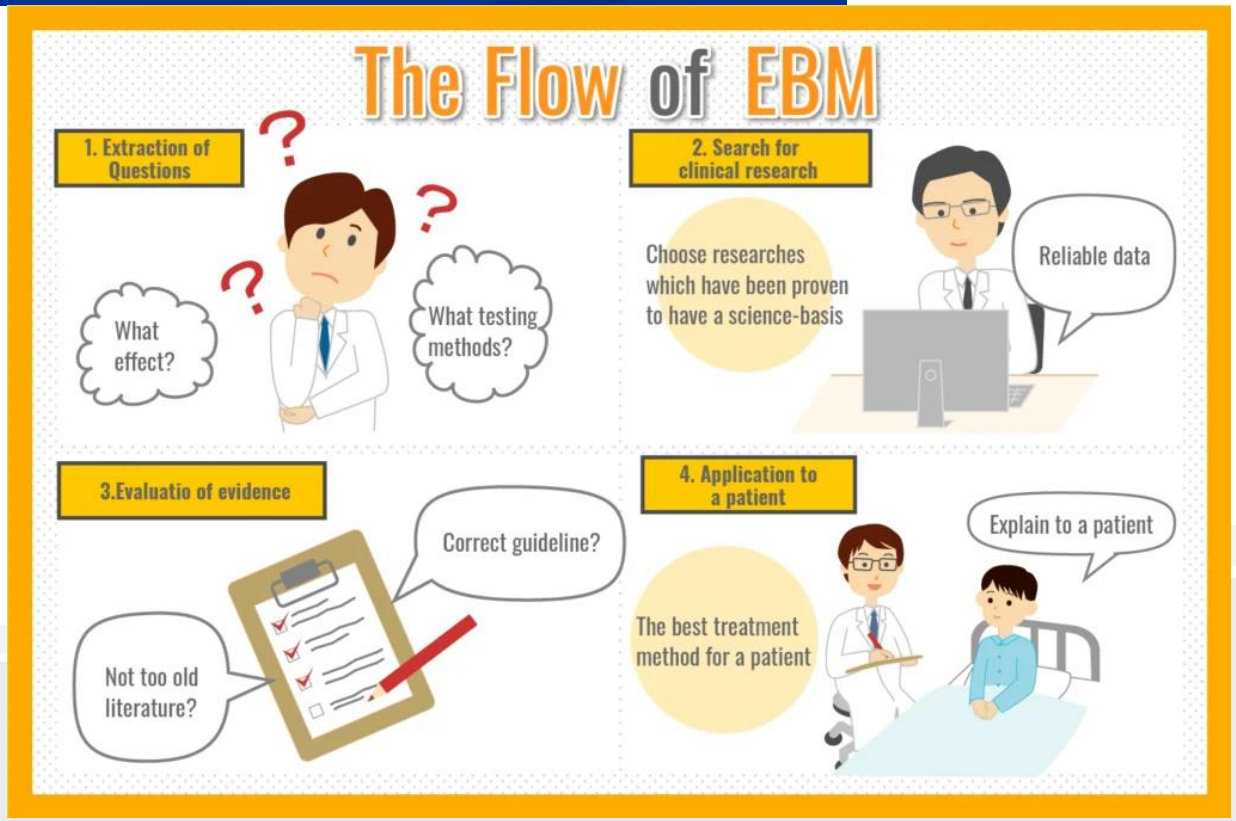


Recommend
Agree
Perform
Input
Decide


Recommend
Gather relevant facts and apply judgment to recommend a decision or action
Provide input to a recommendation
– Facts first, then judgment
Input
Decide
Make the final decision
– "commit the organization to action"
Agree
Formally approve a recommendation
– Implies veto power
Be accountable for making a decision happen once made
Perform

What is Evidence-Based Medicine?

Evidence-Based Medicine (EBM)
Patient care based on evidence derived from the **best available studies**



Evidence-Based Decision Making (EBDM)

EBM expanded to include **population-level decisions**, guidelines, and policies

- Evidence-based decision making means that decisions are not based only on opinion or intuition, but on:
- The **best available evidence**
- Combined with **critical thinking**
- Setting and practical considerations

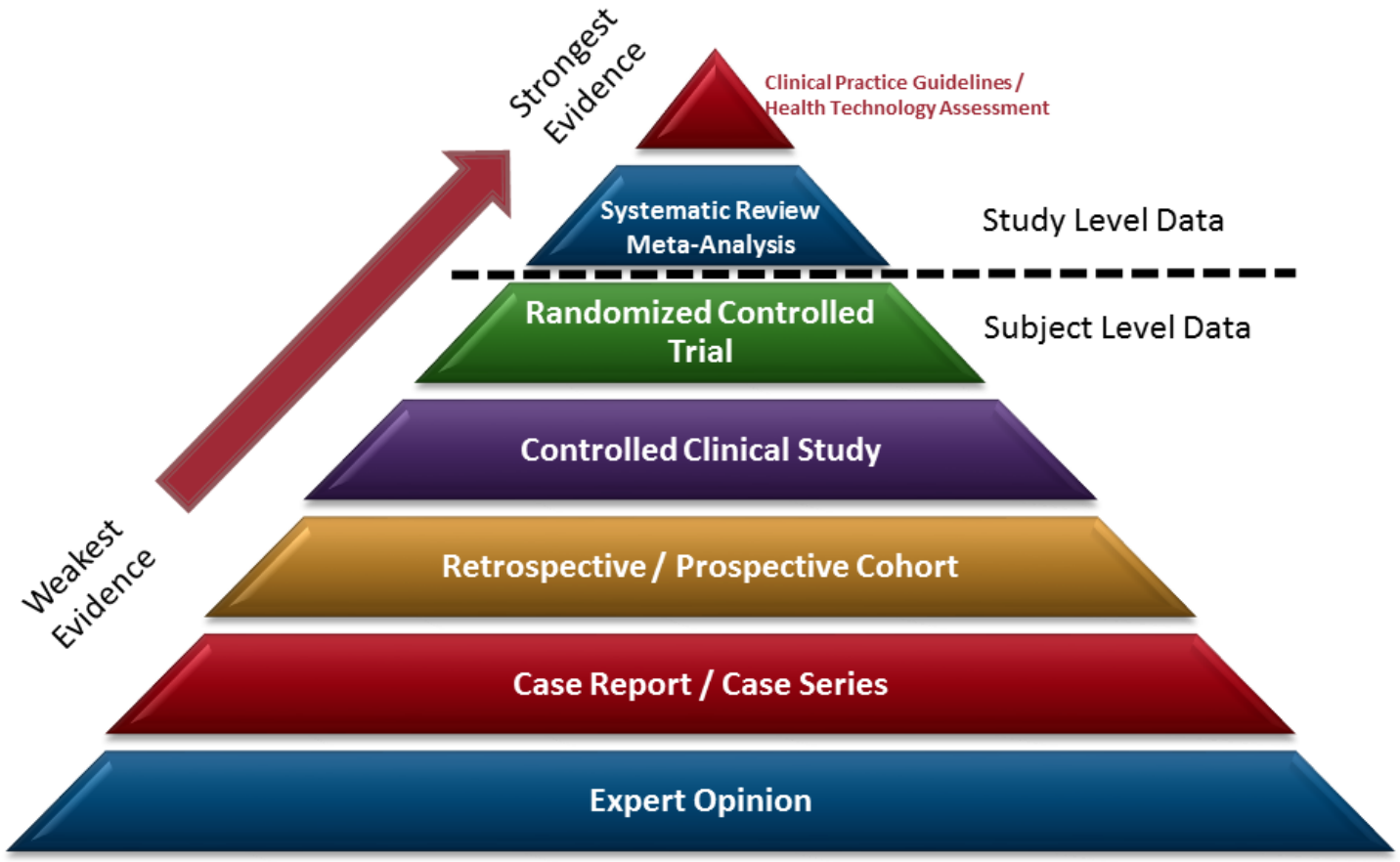
EBM → clinical
EBDM → broader (management + policy)

WHY EVIDENCE-BASED?

- There is **too much information**, but limited time
- Helps focus on **priority problems**
- Reduces **costs and inefficiencies**
- Ensures **transparency and accountability**
- Improves the **quality of decisions**

HIERARCHY OF EVIDENCE

Not all evidence has the same strength.



Stronger evidence → more reliable decisions

But higher-level evidence is not always available

AI IN DECISION MAKING

- AI supports decision-making through:
- Diagnostics (e.g., imaging analysis)
- Treatment planning
- Predicting complications (Predicting acute kidney injury **48 hours early**,Predicts bed shortages/staffing needs using real-time data).
- Improving administrative efficiency (Drafting policy memos, reducing meeting times.

'By 2027, 60% of hospitals will use AI for routine decisions" (Gartner, 2023)

"Would you trust an AI to recommend a treatment plan? Why/why not?"

Thank you

The man who insists upon seeing with perfect clearness before he decides, never decides.