



# 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!

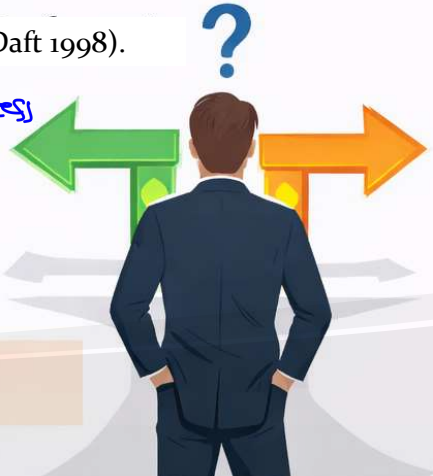
Science → based on logic  
& data (Evidence)

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 *اختيار افضل خيار*
- ✓ Process of identifying and solving problems (Daft 1998). *التعرف* *حل المشكلات*
- ✓ Transforming information (input → output) (Herrmann 2015). *transformational process* *management*



**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,  
مش متأكد



Multiple perspectives of decision-makers  
كل واحد بيوف الموقف من زاوية مختلفة



External influences

- ✓ Economic
- ✓ Political
- ✓ Social
- ✓ Environmental

اقتصاد  
سياسي  
اجتماعي  
بيئي

**★ VERY ★  
IMPORTANT**

Remember: Non-decision = also a decision



# TYPES OF PROBLEMS

## • Crisis Problems

- Serious, Require immediate action
- Example: pandemics, disasters, Cyber Security Breach

Matching  
و صيغ الامتلاء

اصرافة للامن السيبراني  
جائحة حوارك  
أو لو تطقت الحزبا عن المستحقين مثلا



## • Non-Crisis Problems

- Requires resolution but less urgent, Routine.
- Example: Scheduling staff rotations

صبر المداوات بقر شخص  
لو تأخرت يوم عانى

## • 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

فتا لما  
اعتنا  
HA مكان  
الـ Micro

منا من مهمين

مثلا قفص من عزم مطرف بالترك

اصطاحات الناس



# TYPES OF DECISIONS

## Programmed Decisions

فكر منظم روتيني

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



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

→ Routine

## Non-Programmed Decisions

مسألة غير مبرمجة ما يهزك المشكلة صرّوح لل

- ✓ Non-routine and occur less frequently
- ✓ Related to unstructured problems (unclear or incomplete information)
- ✓ 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

الوثوق



- 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

مع الواتوصيله



## Risk

خطر



- 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

مع الواتوصيله





# 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

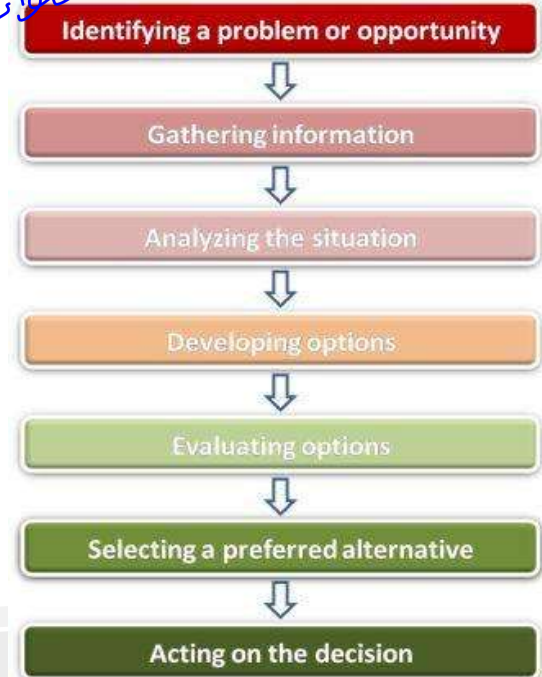


# RATIONAL (CLASSICAL) MODEL

اتخاذ القرار الكلاسيكي المنطقي

كل الخطوات منظمة

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





# RATIONAL (CLASSICAL) MODEL

## The decision-maker:

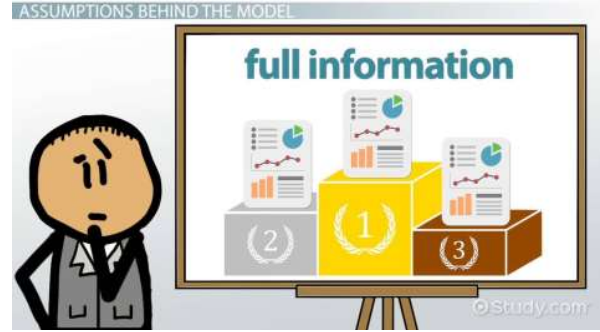
- Evaluates all alternatives logically
- **Selects the option that maximizes outcomes**
- **In healthcare:**

This model is ideal but rarely fully applicable due to:

- Time constraints *حيز الوقت*
- Incomplete information *معلومات غير كافية*
- System complexity *تعقيد*

Rational model = *optimal decision under ideal conditions*

*لازم الظروف المثالية*





# NON-RATIONAL: INCREMENTAL MODEL

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

➤ Key characteristics:

- Decisions are developed over time
- Changes are made incrementally تدرجياً تصاعدياً
- Trial-and-error approach is used خطأ و يتكلم
- 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

what are other words for muddle through?



survive, manage, get by, make it, get along, make out, fare, succeed, get on, do



## ◆ In healthcare:

Used in policy changes or system improvements

Not fully rational — relies on **continuous adjustment** rather than complete analysis

يعتمد على التغيير المستمر عوضاً عن التفكير الشامل



# NON-RATIONAL: SATISFICING MODEL

بموجب السباب يرتاح

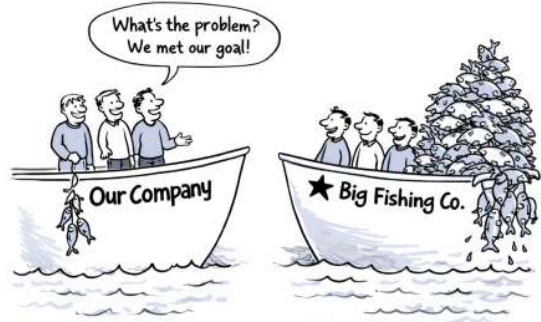
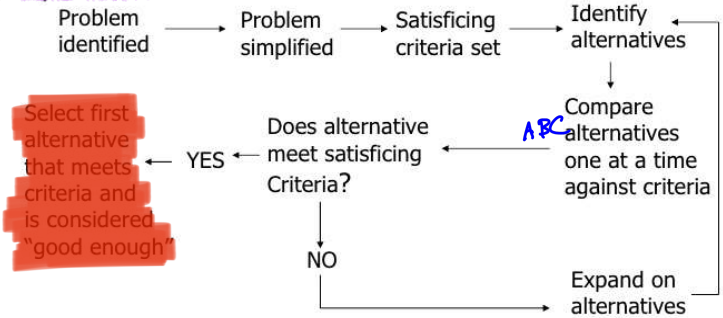
- This model focuses on selecting a solution that meets acceptable criteria rather than the optimal one.

## It is used when:

- Time is limited *وقت محدود*
- Information is incomplete *معلومات غير كاملة*
- The problem is complex *المشكلة معقدة*

## 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 *توزيع محدود سرير العناية المركزة*
- Hiring staff quickly during shortages *توظيف سريع خلال النقص*



# GARBAGE CAN MODEL

ری عقل ذہنی تقریباً  
توسط الاربعہ  
ہوئی  
بیانات اسلامیہ

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

## ✓ Used when:

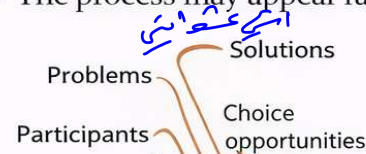
- Problems are unclear
- Goals may be inconsistent
- Participants change over time

## ✓ Decisions result from the interaction between:

- ! Problems مشاکل
- 💡 Solutions الحلول
- 👤 Participants المشاركين
- 📈 Opportunities الفرص

## In this model:

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

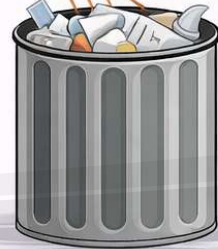


المشاكل  
المحتملات

## ★ Examples in healthcare:

Early pandemic responses

Rapid policy decisions under uncertainty



لی کت میر  
Pandemic  
این عملی اقدام  
Satisficing  
Garbage Can ✓✓✓



# The Role of Intuition in Decision Making

"Told you so."

Sincerely,  
Your Intuition.



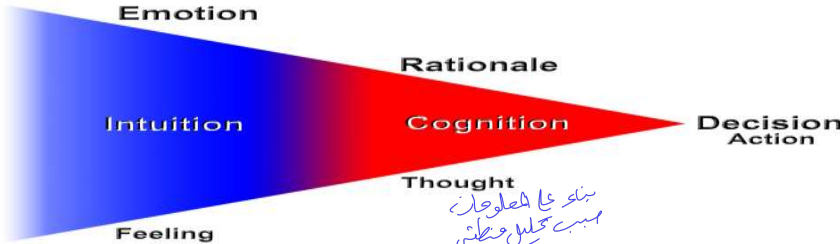
- Intuition refers to decisions that arise quickly without conscious analytical reasoning.
- Rapid and automatic
- Based on experience and pattern recognition
- Requires minimal deliberate analysis

تطلب الحد الأدنى من التحليل المعقد

- **Most organizational decisions are not made in a logical, rational manner** (Daft 2012)

- **70% of physicians use intuition in complex cases**

تتطلب



◆ In healthcare:

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



اصيانا المتكلمة مش بالقرار احياناً بتفصه القرار

# Who Has the D?

Rogers and Blenko 2006

ظنا نطلع بالربع وبعين المعلومة

- **Proposer (Recommend):** Responsible for: Developing the proposal, Gathering input, Providing relevant data and analysis, Presenting a timely and well-informed recommendation

انام صرتي زرع علم ومواصلات

**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)**.

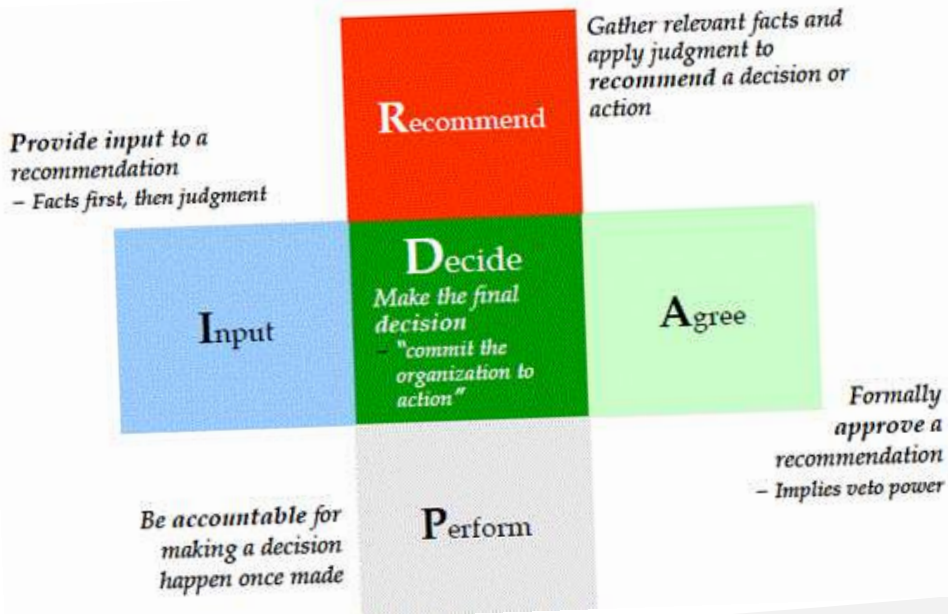
**Ultimate Decision Maker (Decide):** The person who Has the formal authority to make the final decision, Is responsible for the outcome and consequences, Resolves conflicts during the process, Commits the organization to action. Authority + Responsibility

**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







# Evidence-Based Decision Making



If doctors can do it...



administrators can do it?

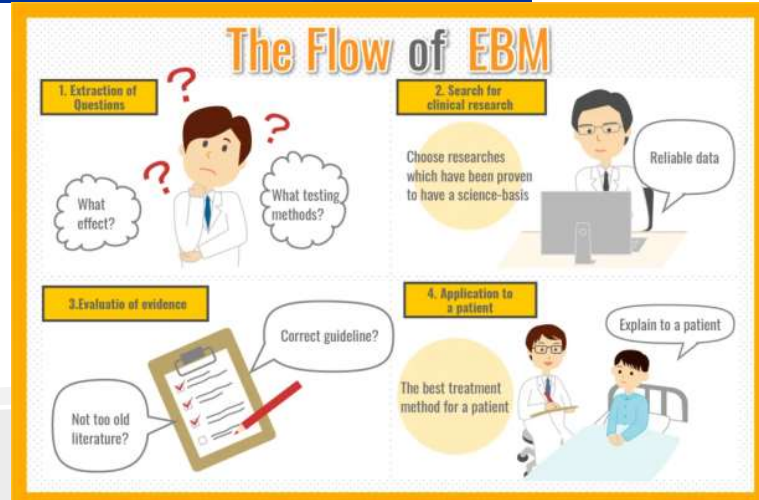
الطب المبني على الدليل العلمي

## What is Evidence-Based Medicine?

الطب المبني على الدليل

### 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** التفكير النقدي
- Setting and practical considerations

EBM → clinical

EBDM → broader (management + policy)

*Evidence Based Decision Making*



## WHY EVIDENCE-BASED?

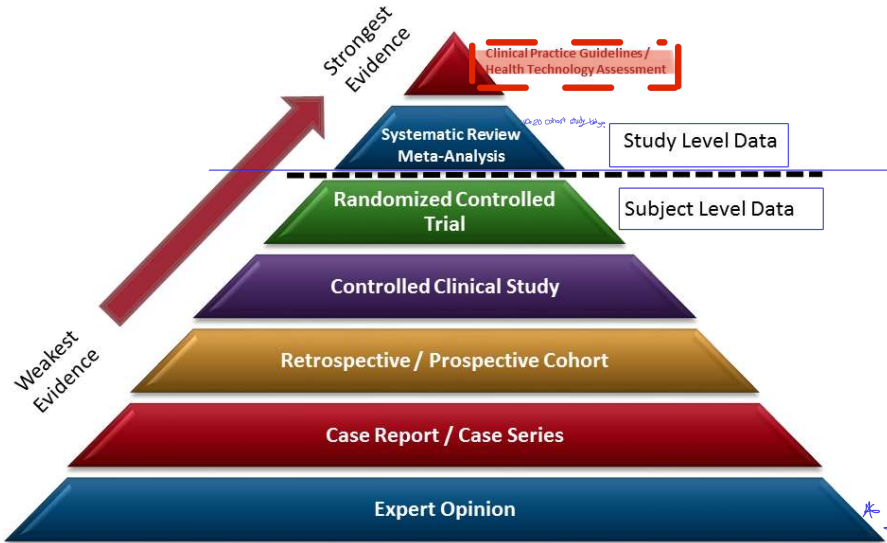
- There is **too much information**, but limited time
- Helps focus on **priority problems** من كثر على الأولويات بالمشاكل
- Reduces **costs and inefficiencies** تقلل التكاليف وعدم الفاعلية
- Ensures **transparency and accountability** المساءلة  
الشفافية بالتحديد الفردي
- Improves the **quality of decisions**

لماذا نستخدم Evidence Based  
ويطلع صبح  
يقدرش بلونه



# HIERARCHY OF EVIDENCE

Not all evidence has the same strength.



Stronger evidence → more reliable decisions  
But higher-level evidence is not always available

أضعف الأدلة رأيك كعقل



# 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 ( <sup>تحسين مقاييس الادارية</sup> Drafting <sup>مراجعة مذكرات سياسيه</sup> policy memos, <sup>التقارير</sup> reducing meeting times.

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

لهم وفره بنفس الوقت

**"Would you trust an AI to recommend a treatment plan? Why/why not?"** Not completely  
it's such a pleasure!



Thank you

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



