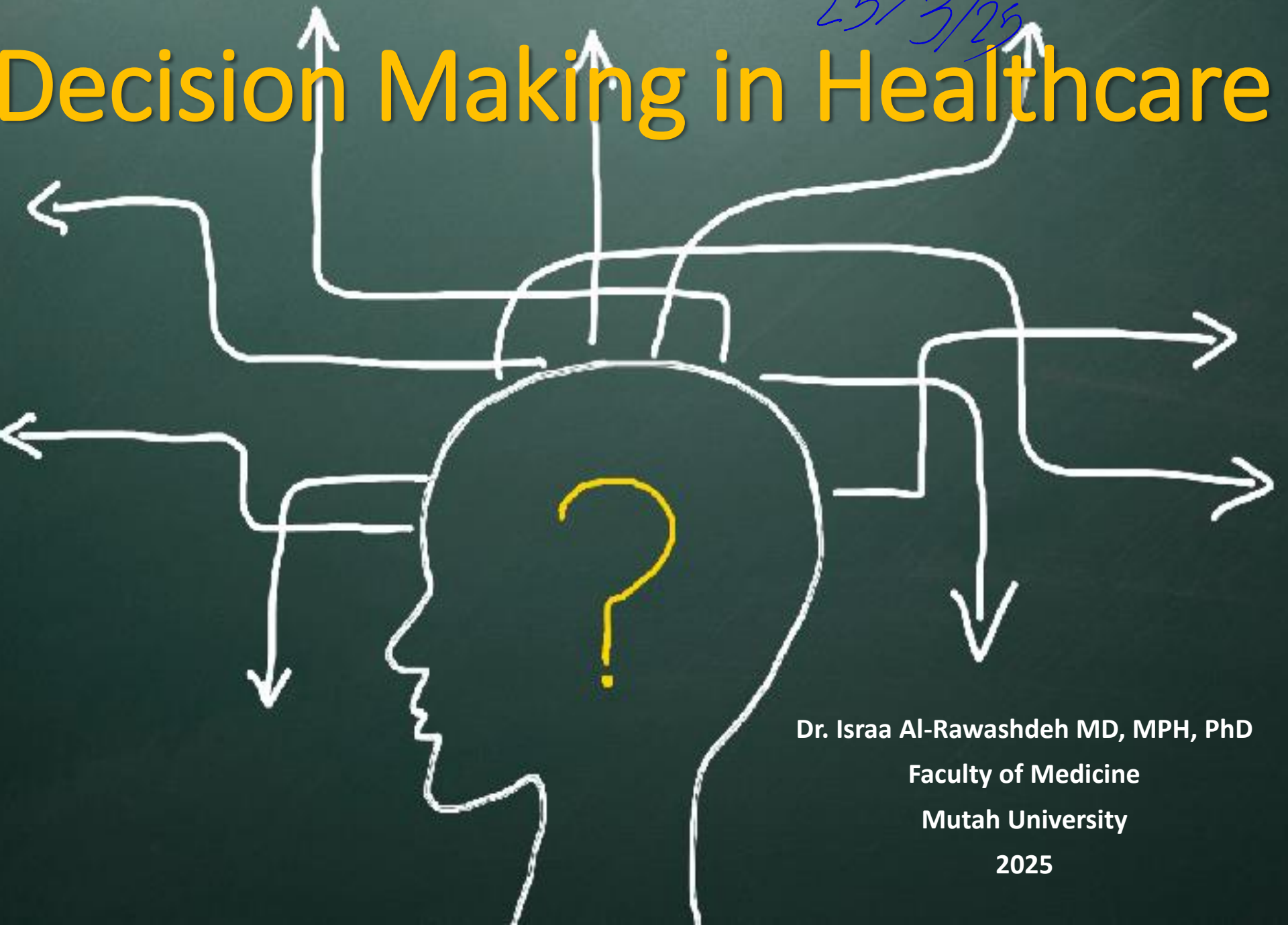
25/3/25

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.

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

INTRODUCTION

DM is a science!

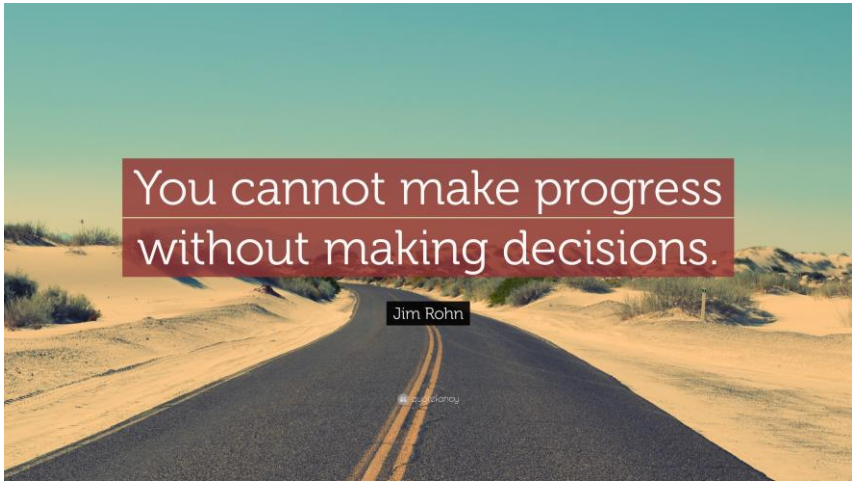
DM is an art!

"Decision-making balances logic (science) and adaptability (art)."

Definitions

- A goal-directed behaviour in the presence of options.
- "The thought process of selecting a logical choice from the available options." (Business Dictionary).
- The process of *identifying* and *solving problems* (Daft 1998).
- A **clinical example** (e.g., choosing between two treatment plans).
- The process of transforming *inputs into outputs*. The input is information, the output is new information (Herrmann 2015).

Is it this simple??



Well; It is not!

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

Uncertainty of information,

Varying understandings of evidence due to The multiple perspectives of decision makers, and

External influences

(economic, political, social and environmental factors which affect any decision-making process)

Remember: The decision not to do something is as important as the decision to do something, and a non-decision is also an output.

Types of problems

Managerial decision-making typically centers on *three* types of problems:

- **Crisis :** A crisis problem is a serious difficulty requiring immediate action. (Natural disasters, COVID-19 surge planning, sudden financial, Cybersecurity Breach..etc..)
- **Non-Crisis:** A non-crisis problem is an issue that requires resolution but does not have the importance and immediacy characteristics of a crisis. (routine problems, Scheduling staff rotations)
- **Opportunity Problems:** An opportunity problem is a situation that offers strong potential for significant organizational gain if appropriate actions are taken (e.g. availability of new technology (e.g. AI), changes in population needs. Competitor vulnerabilities. lack of dominant competition)

Types of decisions (Programmed vs. Non programmed Decisions)

- **Programmed decision**
  - One that is made regularly, repetitive, routine.
  - Structured problems (clear problem, obvious criteria)
  - Information are available and complete.
  - Efficiency expected
  - Examples: Pre-set rules, policies, protocols, procedures , computerized based.
- **Non-programmed decision** ⇒ examples (crisis, opportunity .
  - Non- routine problems of an organization.
  - occurs less frequently than a programmed decisions.
  - They are unique in nature and every situation requires special attention
  - Unstructured (unclear or incomplete information)
  - More “important” problem
  - Judgment and creativity is needed
  - E.g. Responding to a rare adverse drug reaction

Decision Making Conditions

- **Certainty:** A situation in which a manager can make an accurate decision because the outcome of every alternative choice is known.

→ High in programmed / non crisis.
→ Hard in Crisis.

- **Risk:** A situation in which the manager is able to estimate the likelihood (probability) of outcomes that result from the choice of particular alternatives but information are incomplete.

- **Uncertainty** –The decision-maker is not aware of all available alternatives, the risks associated with each, and the consequences of each alternative or their probabilities. E.g. Experimental treatment for a novel virus.

- Crisis.
- Non progme

Models of decision making

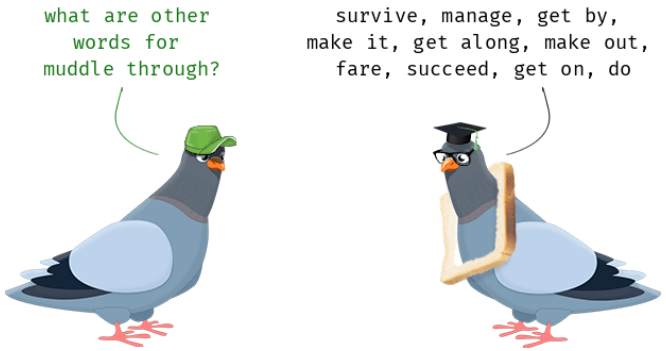
- **Rational Model:**
  - Most popular type of models
  - Based around a cognitive judgment
- **Non-Rational Models:**
  - Incremental Model
  - Satisficing Model
  - Garbage-Can Model

Rational (Classical) model:

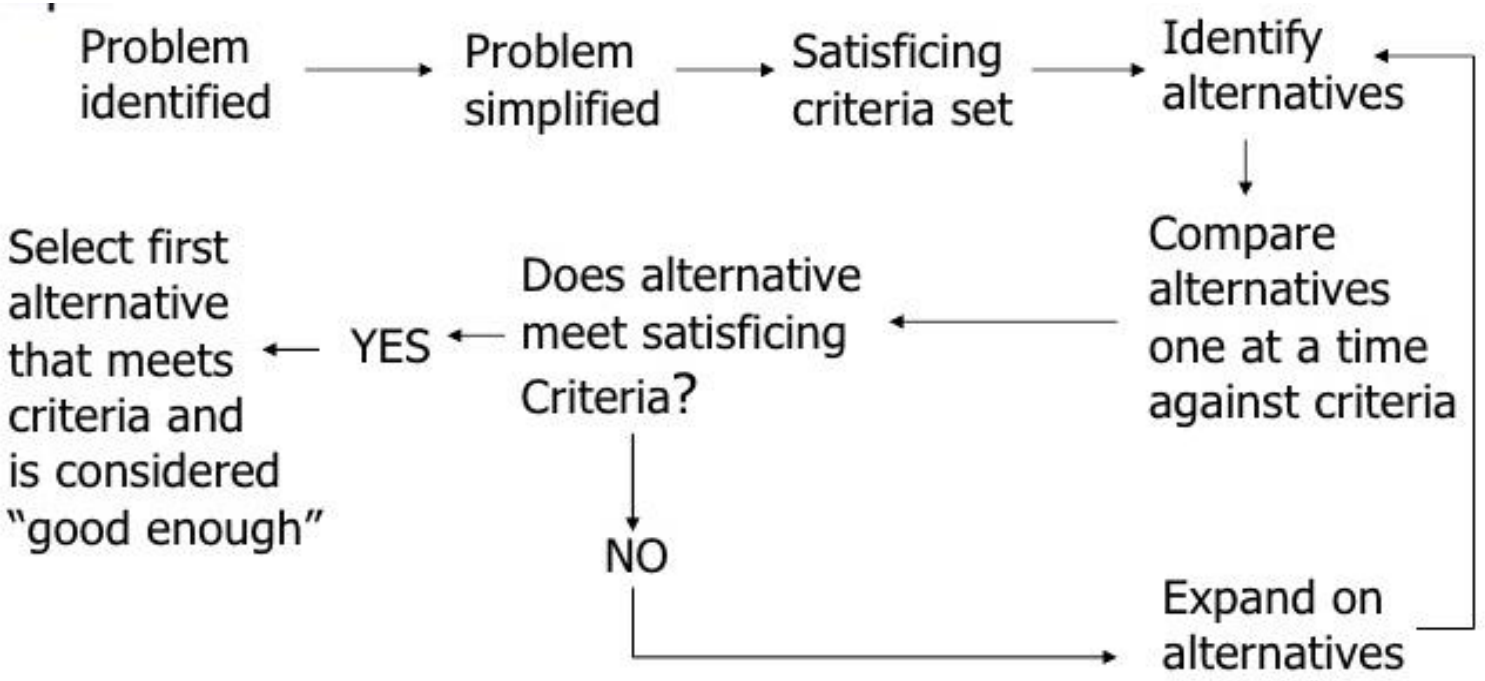
- This is the classical, scientific approach to decision-making which views the process as *orderly and rational*.
- It is assumed that decision makers have nearly all information about a problem, its causes, and its solutions, and a large number of alternatives can be weighted and the best one selected.
- "Assumes perfect information—rare in healthcare!"

Non-Rational: Incremental model

- ‘Slowly building the blocks’ **"Baby steps"**
- This model suggests that major decisions are broken down in small steps taking place in **three** major phases: the identification, development, & selection phases.
- Not completely rational; analysis is limited, information is ambiguous and subject to interpretation.
- Incremental *trial-and-error process.*
- They correct or avoid mistakes through a sequence of incremental changes

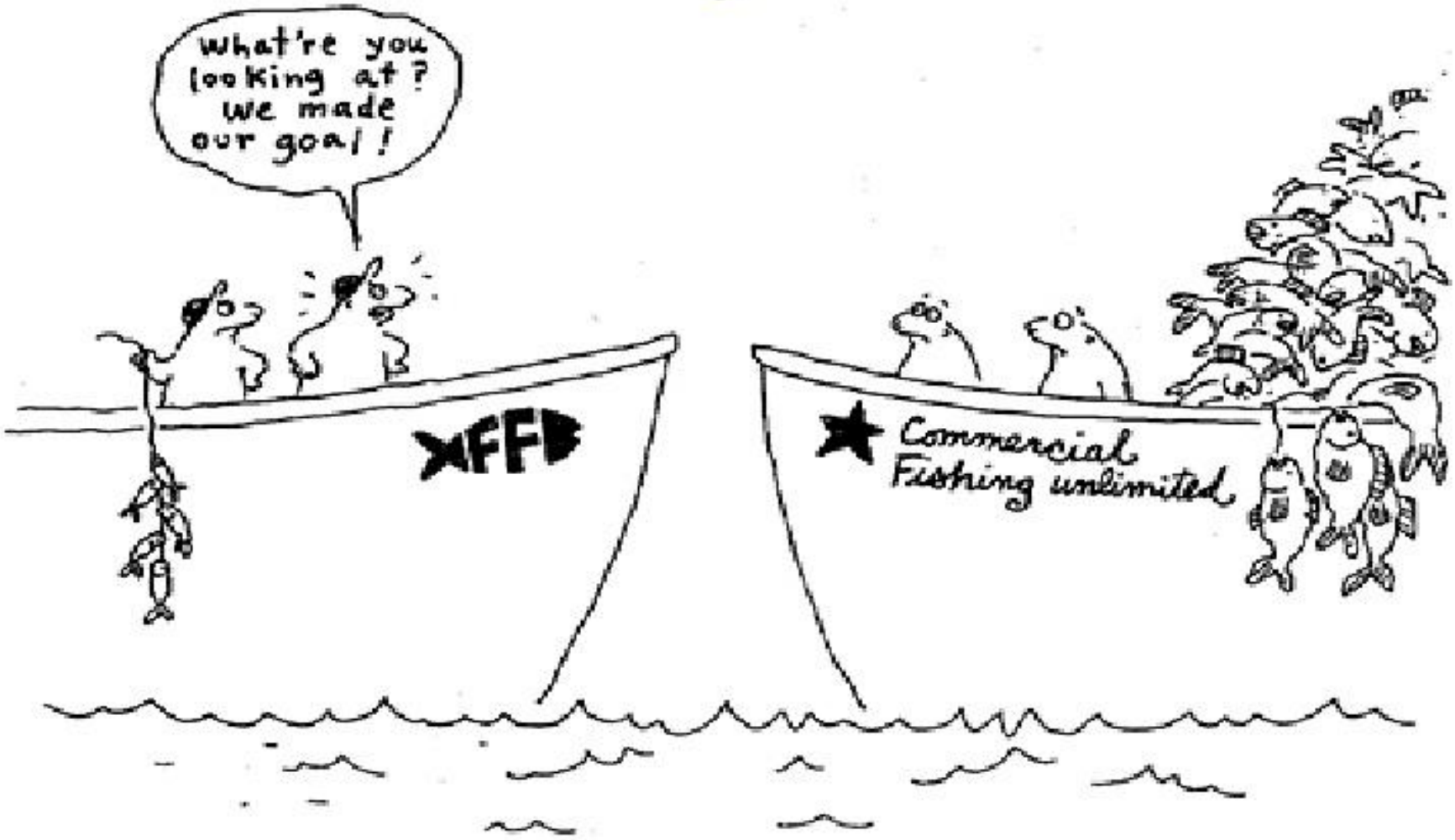


Non-Rational: Satisficing Model



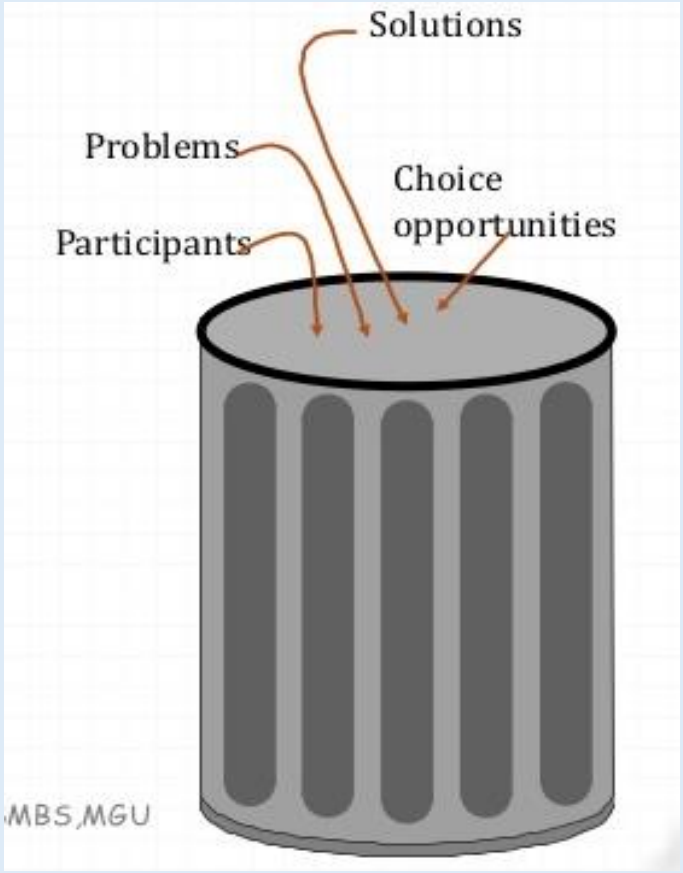
- Satisficing consists of choosing a solution that meets minimum standard of acceptance.
- It is best when there is insufficient time, information, or no ability to deal with the complexity associated with the rational process.
- therefore, stop seeking alternatives when find one that is *good enough* (Not seeking the optimal decision). ✓ **"Close enough!"**
- E.g. e.g., bed allocation during shortages

Law of Satisficing



Non-Rational: Garbage can model

This describes decision-making processes in organizations characterized by uncertainty, where objectives are not well defined or inconsistent for individual decision-makers.



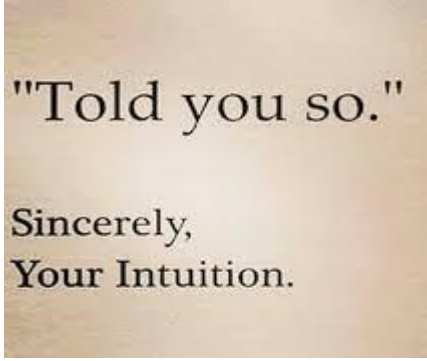
Decisions are made as a result of the interaction between: ***Problems, solutions, participants,*** and ***choice opportunities***.

In other words, solutions and problems are matched rather than through a step-by-step process

Does not follow any orderly steps (Random)

"Throw spaghetti at the wall"

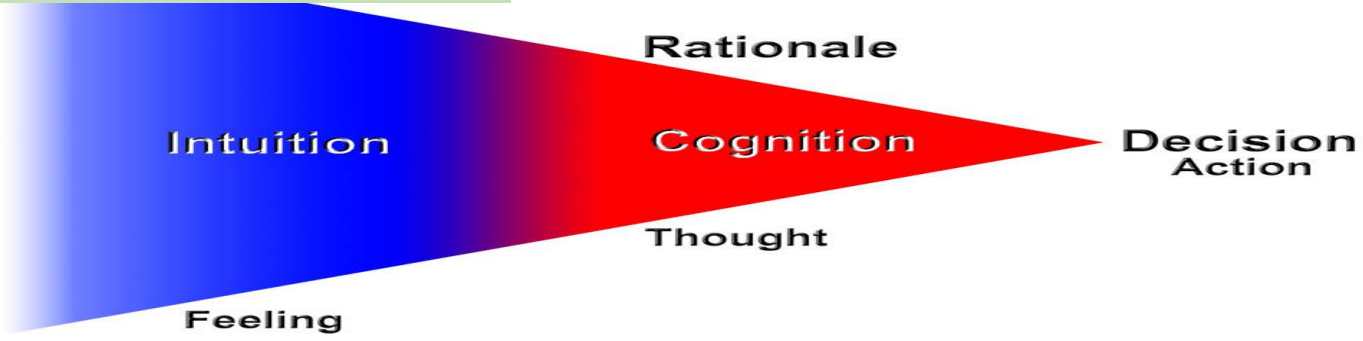
The Role of Intuition in Decision Making



Represents judgments, insights, or decisions that "come to mind on their own, without explicit awareness of the suggested alternatives and without clear evaluation of the validity of these alternatives".

Rapid, automatic and relatively effortless decision-making

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

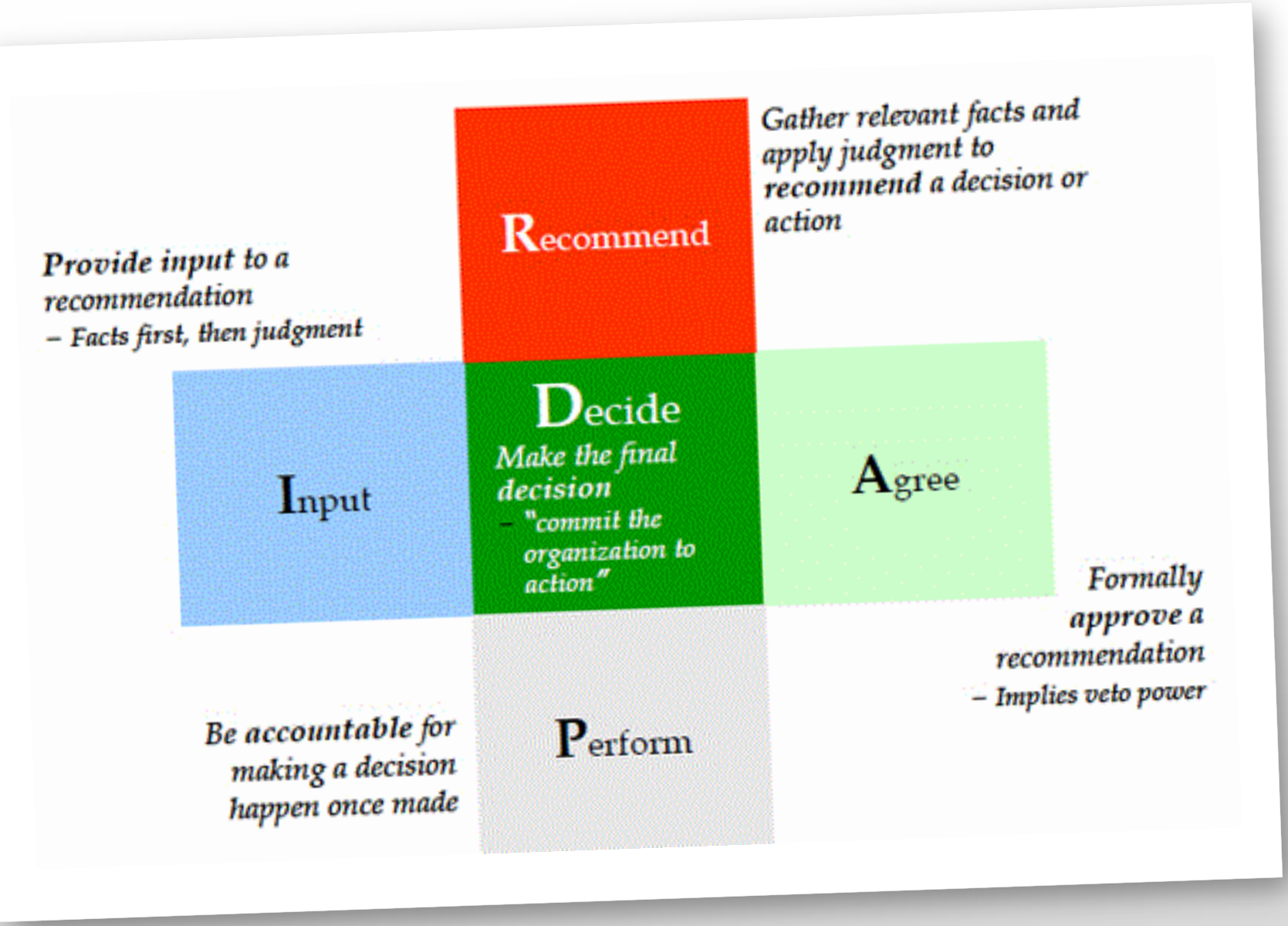


Who Has the D?

Rogers and Blenko 2006

Recommend
Agree
Perform
Input
Decide

- **Proposer (Recommend):** People in this role are responsible for making a proposal, gathering input, and providing the right data and analysis to make a functional decision in timely method.
- **Input:** These people are consulted on the decision (resources, expertise, knowledge..). Because the people who provide input are typically involved in implementation, recommenders have a strong interest in taking their advice seriously.
- **Approver (Agree):** Individuals in this role have veto power – yes or no – over the recommendation.
- **Ultimate Decision Maker (Decide):** The person is the formal decision maker. The decider is ultimately accountable for the decision, responsible for consequences and has the authority to resolve any problem in the decision-making process and to commit 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 instances, the people responsible for implementing a decision are the same people who recommended it.


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

Characteristics of an Effective Decision-Making

- It focuses on what is important
- It is logical and consistent.
- It acknowledges both subjective and objective thinking and mixes analytical with intuitive thinking.
- It requires only as much information and analysis as is necessary to solve a particular problem.
- It encourages and guides the gathering of relevant information and informed opinion.
- It is straight forward, reliable, easy to use, and flexible.

Evidence-Based Decision Making

If doctors can do it...

administrators can do it?

What is Evidence-Based Medicine?

"The process of finding relevant information in the medical literature to address a specific clinical problem; In short, patient care based on evidence derived from the best available ("gold standard") studies."

John Last, A Dictionary of Epidemiology, Oxford, 1995

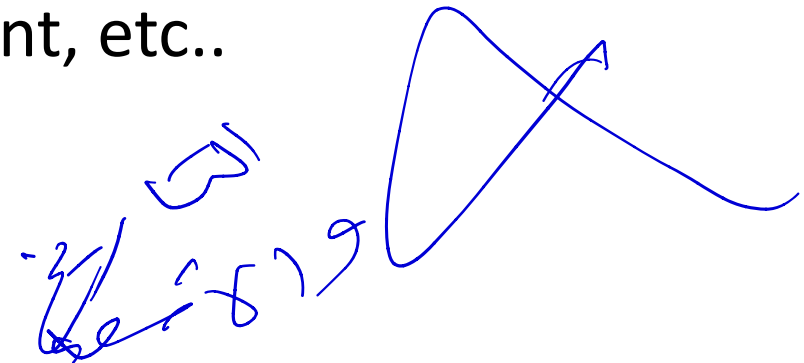
Origins of the Evidence-based Movement

1981: Dr. David Sackett, introduced a new method for physicians reading the literature. Called it “critical appraisal.”

1990: Dr. Gordon Guyatt, introduced a new concept he called “Scientific Medicine” !

1991 Guyatt coined “Evidence-Based Medicine” (EBM).

- Aimed to improve the quality of information used to make decisions.
- Migrated to other sectors - dentistry, nursing, management, etc..



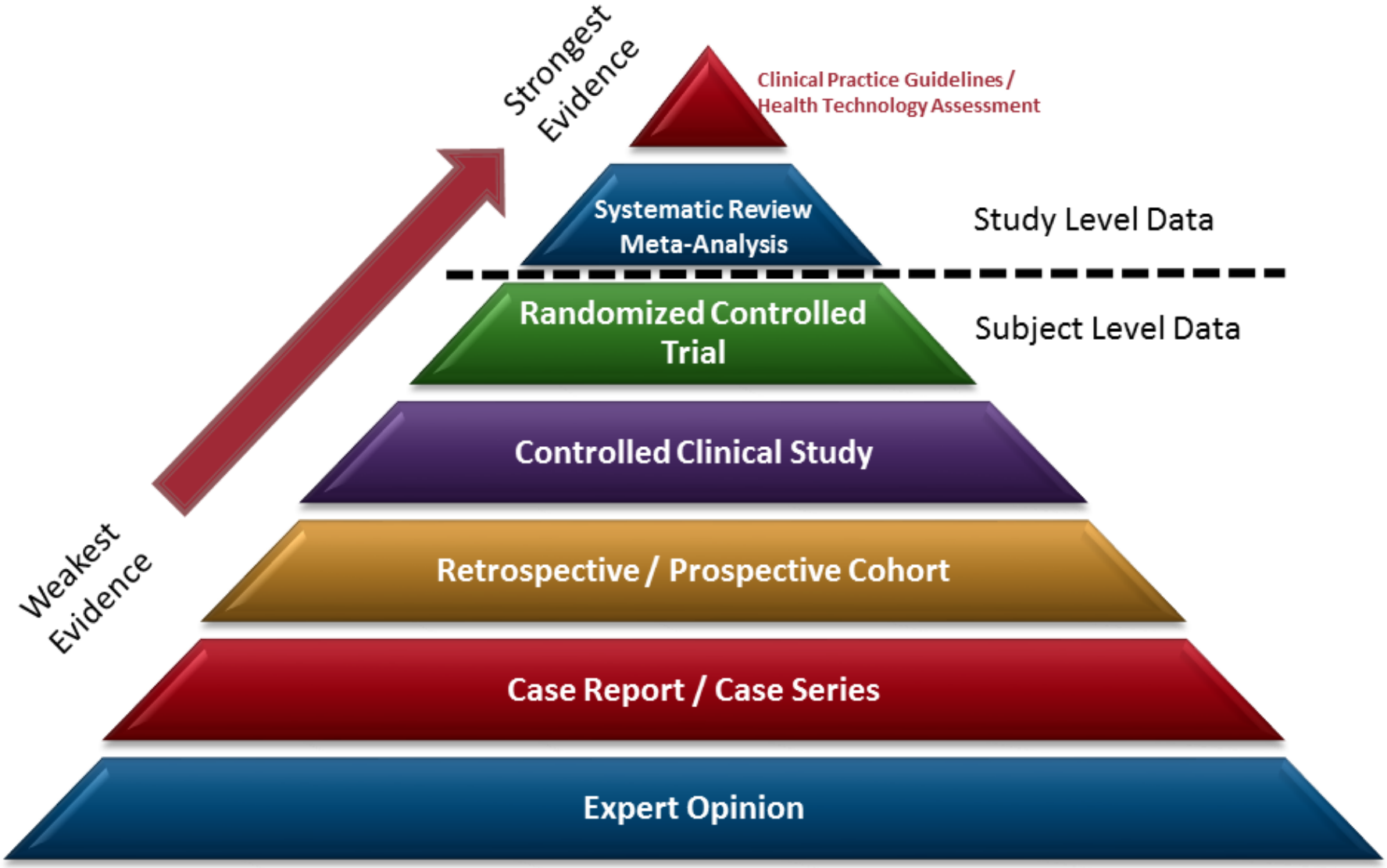
Evidence-based . . .

Evidence-based Medicine (EBM)

- Patient care based on evidence from the best available studies

Evidence-based Decision Making

- Evidence-based decision-making Decisions should be based on a combination of critical thinking and the 'best available evidence'.
- EBM extended to include population-based decision making in the form of guidelines and decisions using formal evidence criteria and deliberative processes


Strongest Evidence
Clinical Practice Guidelines / Health Technology Assessment
Systematic Review Meta-Analysis
Study Level Data
Randomized Controlled Trial
Subject Level Data
Controlled Clinical Study
Retrospective / Prospective Cohort
Case Report / Case Series
Expert Opinion
Weakest Evidence

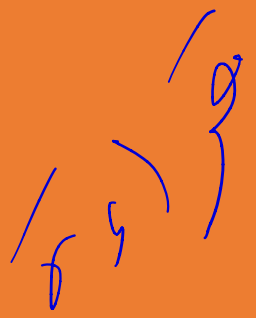
NEW: AI in Healthcare Decision-Making: Smarter, Faster Decisions?

- **Data-Driven Decision Making**:
  The use of data analytics, artificial intelligence (AI), and big data has revolutionized decision-making in healthcare administration. These tools are used to optimize operations, improve patient outcomes, and reduce costs.
- Examples of using AI:
- **Diagnostics:** AI analyzes imaging (e.g., detecting tumors on X-rays faster than humans).
  Treatment Plans: Suggests personalized options based on patient history + latest research.
  Example: AI predicting acute kidney injury 48hrs early.
- **Admin Efficiency:** Predicts bed shortages/staffing needs using real-time data.
- ***ChatGPT for Admin:*** Drafting policy memos, reducing meeting times.
- Programmed decisions.

'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?"

Why Evidence-Based?



- So much information, too little time!
- problems which requires immediate attention can be better focused on.
- Reduces expenses
- It ensures transparency and accountability.
- Value of scientific knowledge for decision making.
- Need high quality, filtered information to make informed decisions
- Decisions should not be based only on intuition, opinion or subjective information

Challenges of EBDM

- Periodic statistics (generated from day to day administration) are important source of evidence (clear, objective, numerical data) are needed.
- The availability of statistical information does not always lead to good decision making: skill and knowledge is also required to be able to access, understand, analyze and communicate statistical information.
- Clear or consistent evidence may not be available at the time of decision making.
- Politics may influences evaluation design, process and use of findings