

# **Evidence-Based Decision Making in Healthcare**

## *Course Overview*

Dr. Jay K. Varma  
<https://drjayvarma.com>

# Evidence-Based Decision Making

- Derives from movement in clinical medicine called “evidence-based medicine”
- Clinicians historically diagnosed and treated patients based on:
  - What they’d learned in school
  - What they’d been taught by their mentors
  - What their personal experience was
  - What they had read most recently

# Evidence-Based Decision Making

- In the 1960s, increasing use in healthcare of:
  - Randomized clinical trials
  - Statistics and epidemiology
- In 1991, popular use of “evidence-based medicine”
- Defined as “the conscientious, explicit, judicious use of current best evidence in making decisions about the care of individual patients”

# Evidence-Based Decision Making

- Became over-riding approach in scientific journals and clinical practice: “Is this [*way to diagnose, way to treat, way to prevent*] evidence-based?”
- Eventually migrated into fields both adjacent and far from medicine
  - Evidence-based public health
  - Evidence-based policy

# Decision Making in Healthcare

- Requires setting priorities on how best to use limited resources
- High consequence decisions
  - Life or death
  - Large economic costs

# Considerations in Health Decisions

- Number of people affected
- Types of people affected, e.g., pregnant
- Severity, urgency, and consequences of problem
- Recognized priority by public, experts, and/or government

# Decision Making in Healthcare

- Structured: similar process for all major decisions
- Comprehensive: considers all relevant factors
- Transparent: write down all the relevant factors that went into the decision with description of the judgements that were made
- Decisions should be re-evaluated as evidence, priorities, regulations, budget, and public demand changes

# Evidence is the Start of Decision-Making

- Evidence is the *start* of decision-making, but not the *end* of it
- Some questions have never been rigorously studied
- Some questions have evidence that conflicts
- Some policies are not evidence-based due to other factors
- People disagree about how to allocate resources



# Evidence-Based or Evidence-Informed?

- While evidence-based is the accepted term, *evidence-informed* is more accurate, because multiple other factors go into policy decisions
- Feasibility
- Acceptability
- Affordability
- Ethics, values, justice

# GRADE Approach

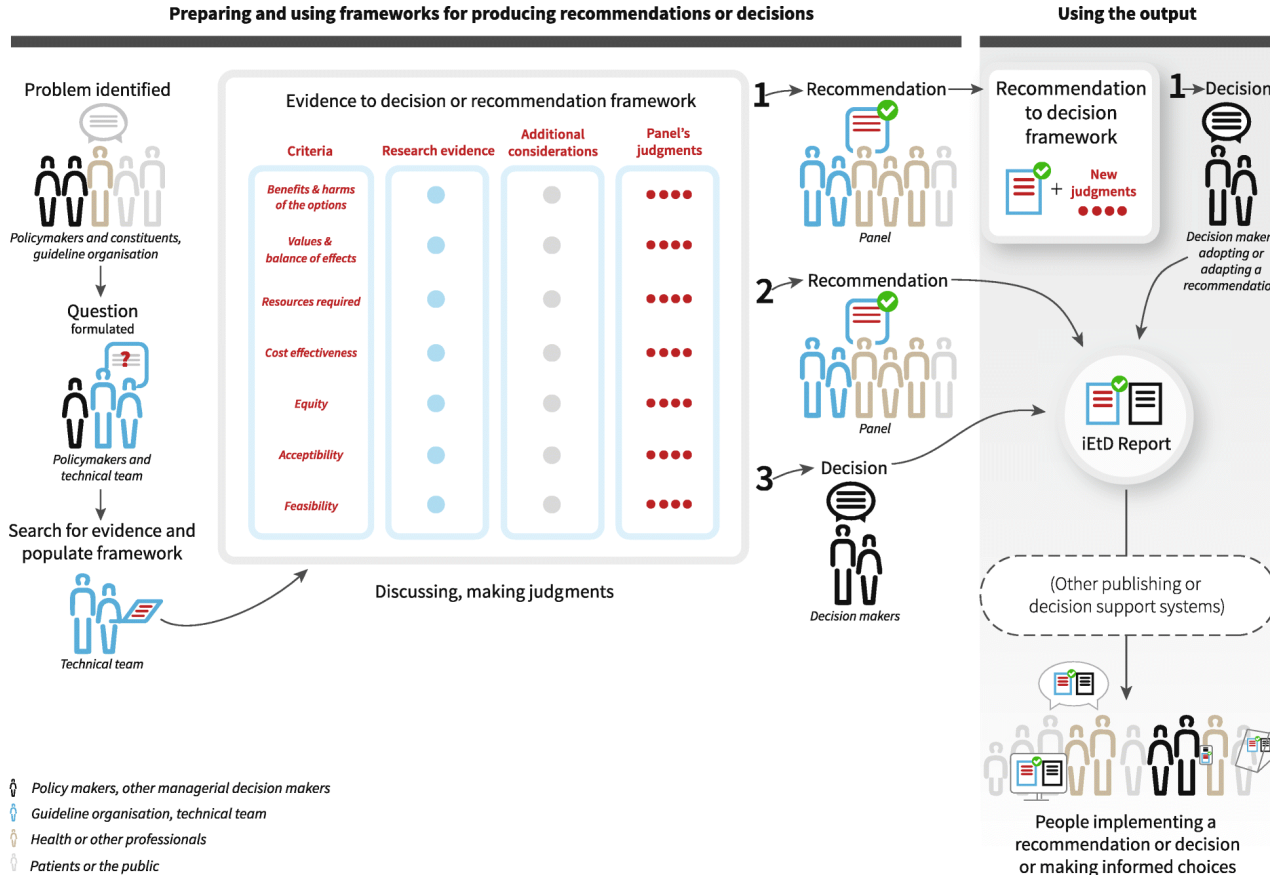
- One approach to making decision in healthcare
- Designed primarily for developing guidelines for clinicians (e.g., “should I prescribe X medicine to treat Y disease?”)
- But approach is broadly applicable to all issues of health policy and practice

# GRADE Approach

- Structured, comprehensive, and transparent
- Framing questions
- Choosing outcomes of interest
- Aggregating, assessing, and grading evidence
- Considering factors beyond the scientific evidence
- Making final recommendation to clinicians, policy-makers, public

# GRADE Approach

- Technical team\*
  - Synthesizes evidence for all inputs into decision
- Decision or policy team
  - Makes judgments about the relative importance of each factor
  - Records judgements for future review or revision
  - Makes decision by weighing factors objectively and subjectively



# What We Will Do in This Class

- Learn about how to generate and evaluate scientific evidence, particularly bias
- Learn the GRADE approach
  - Read articles and book that describe approach
- Practice GRADE approach
  - Group project in which you develop a policy question, evaluate the evidence and other factors, then make a recommendation

# What We Will Do in This Class

- Practice “bare bones” version of GRADE for everyday use
- Consider issues relevant to patient care (book assignment “*Testing Treatments*”)
- Communicating decisions, particularly during situations that are urgent and involve uncertainty

# Iterative Process

- We will bounce around (especially today!) between where we are going and how to get there
- Want to give you an overview of process before teaching you details about each step in process



# Challenge and Opportunity

- Different levels of knowledge about epidemiology, health research, and clinical practice
  - Several lectures on study design and bias
- Different values and preferences
  - Lots of discussion and respectful debate

# Class Objectives

- Develop a focused, clinically-relevant question that can be answered by medical evidence review
- Conduct a systematic review of the literature
- Evaluate different aspects of studies that reduce or increase the quality of evidence

# Class Objectives

- Include objective or subjective assessments of harms, benefits, equity, and alignment with values in decision-making
- Present recommendations in a transparent, reproducible way to decision-makers