

# **Medical Decision Analysis: Lessons Learned**



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# Background



- Practice variation
- Patient Empowerment
- Decision Psychology
- Clinical Epidemiology

# Practice Variation



- Why a problem?
- What can be done?
  - Decision Analysis
  - Evidence-Based Medicine
  - Guidelines

# How can decision analysis help?



- Bayes' theorem for diagnosis
- Explicitly recognize uncertainties
- Explicit about values: whose? What counts?
- Probability-driven vs. utility-driven
- Cost-effectiveness analysis
  - Dark Side

# Problems with DA



- Not for one-shot decisions
- Requires lots of data
- Complicated; how to explain to “outsiders”?
- Takes time
  - To build adequate model
  - Gather evidence

# Problems with DA (2)



- Omits important variables?
- Who benefits from CEA?
  - DA is a cover for rationing
- Complicated; how to explain to “outsiders”?

# Subjective Probabilities



- What is known?
- Can MDs be explicit?
- Is knowledge coded as probabilities?
- Psychological distortions

# Results



- Simple models help physicians
- But may not be trusted
- Don't satisfy modelers
- Complex models for policy problems
- Less applied to bedside DM

# Uses of DA



- Patient decision aids
- Policy and cost-effectiveness analysis
- Marginal in medical education

# • **Patient Decision Supports**



- Values Clarification
- Risks/Benefits

# Proper balance?



- Usability
- Elegance
- Comprehensiveness
- Is MDA cost-effective?

# • **What is a good decision?**



- Patient satisfaction?
- EU maximization?
- Politically acceptable?