

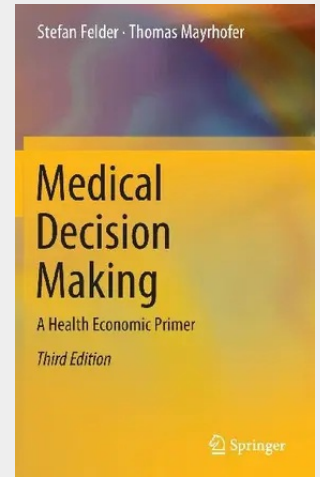
# Medical Decision Making

A Health Economic Primer

This textbook offers a comprehensive analysis of medical decision-making under uncertainty by combining test information theory with expected utility theory. The authors show how the parameters of Bayes' theorem can be combined with a value function of health states in order to arrive at informed test and treatment decisions in the face of diagnostic and therapeutic risks. Distinguishing between risk-neutral, risk-averse, and prudent decision-makers, they demonstrate the effects of risk preferences on medical decisions. Furthermore, they analyze individual and multiple tests as well as diagnostic models in which the decision-maker chooses the test outcome. The consequences of test and treatment decisions for the patient are encompassed by quality-adjusted life years (QALYs) and the standard economic model, which applies the willingness to pay for health approach. Lastly, non-expected utility models of choice under risk and uncertainty are presented. Although these models can explain some of the test and treatment decisions observed, they are less suitable for normative analyses aimed at providing guidance on medical decision-making.

This third edition provides extensively revised versions of all chapters and reflects recent innovations in medical decision-making such as decision curve analysis. New chapters focus on the health economics of and revealed preferences in medical decisions. The book is intended for students of (health) economics and medicine as well as for medical decision-makers and physicians dealing with uncertainty in their test and treatment decisions.

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