

# Imperfect quality competition in regulated health care markets

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## Abstract

We study equilibrium quality in a health care market with regulated prices. Demand-side behavior is derived from choice axioms, and the demand-side responds imperfectly to differences in provider quality. The quality-responsiveness of the demand-side, medical technology and cost structure determines a unique payoff matrix for providers. Payoffs to providers are vectors with two elements: profit and patient benefit. For alternative degrees of quality-responsiveness, we derive the set of pure strategies that constitute feasible Pareto equilibria or Bayesian Nash equilibria in a duopoly market. The minimal quality that can be implemented as a Pareto equilibrium or Bayesian Nash equilibrium rises if the demand-side becomes more responsive to quality.

Exploiting data from an incentivized laboratory experiment on strategic medical choices, we find that for 36% of cases, decision-makers choose medical treatments that are dominated by other treatment strategies. We compute the quantal response equilibria for alternative levels of quality-responsiveness and show that equilibrium qualities are positively related to the quality-responsiveness of the demand-side. The consequences for the market equilibrium of a more quality responsive demand-side are qualitatively similar in a quantal response equilibrium and in a Bayesian Nash equilibrium.

Our results illustrate how and why choice opportunities for patients cause quality incentives for providers, even in markets where the demand side has an imperfect quality response. An important policy implication is that policies that succeed in raising the quality-responsiveness of the demand-side will lead to a rise in equilibrium qualities provided to the market. Classic examples include lowering transaction costs and transportation costs.

*Keywords:* Game Theory, Imperfect Rationality, Choice Axiom, Quantal Response Equilibrium, Health Care Markets

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