

# Improving healthcare outcomes and cost through analysis and design of provider incentives

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**Abstract.** Provider decision making plays a critical role in patient outcomes and national healthcare spending. Creating robust incentive structures to underlie provider decision making are vital to ensuring the delivery of high quality care and adequately managed costs. Despite this these incentive structures are poorly designed both financially and from a provider risk perspective. In this paper we analyze the inefficiencies and sub-optimal equilibria that result from the use of classic incentive systems, then extend recent ideas to propose a hybrid incentive structure that increases provider profits, improves patient outcomes, and reduces wasteful spending.

**Keywords:** health care economics, incentives, game theory, prisoner's dilemma, U.S. health care system

## Introduction

Healthcare is a socially and economically important aspect of the modern United States. Roughly 1/6th of US consumer spending and 48% of federal [1] spending goes towards some form of healthcare [2] and the success, efficiency, and outcomes of this market reflect directly on the viability and happiness of American citizens and the US economy. The decision making of physicians plays a integral role in this system, with roughly 80% of all expenditure being a result of physicians' decisions [3]. Unfortunately the classic incentive structures used result in a principle-agent problem between providers (agents) and payers (government/insurance companies), as well as multiple "prisoners' dilemmas" between providers and patients as well as providers and other providers [7]. In this paper we analyze the inefficiencies and sub-optimal equilibria that result from the use of classic incentive systems, then extend recent ideas to propose a hybrid incentive structure that increases provider profits and improves patient outcomes.<sup>1</sup>

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\* Thanks

<sup>1</sup> The footnote numeral is set flush left and the text follows with the usual word spacing.

**Fig. 1.** blah blah blah

## Background

### Fee-for-service

Foo bar baz

### Capitation

Foo bar baz

### Accountable Care Organizationk

Foo bar baz

## Modeling Incentives

## Hybrid Approach

## References

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