Measuring the Price of Anarchy in Critical Care Unit Interactions Author Information

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Statement of contribution:

This paper contributes to the operational research literature in two main ways:

- Application of Game Theory to a healthcare system with a view to understanding choice of performance targets.
- Theoretical results as to the existence of Nash equilibria in pure strategies for the specific game considered.

The contribution is novel by placing an analytical stochastic model of critical care unit interaction in a game theoretic context. The utilities of the game are outputs of the stochastic model. Further to this the game is solved using a simple search thanks to a theoretic result proving the existence of a pure Nash equilibrium.

Various numerical results are offered which help describe the best design of incentives so that each critical care unit acts in a coordinated way.