ABSTRACT

We study the optimal configuration of hospital inpatient rooms with private and semiprivate rooms when some of the patients have infectious diseases and need to be isolated. We assume that the demand is random and seasonal. We propose a computationally efficient solution procedure that is based on a stochastic program that uses asymptotic approximations for the system performance under different admission policies and show its accuracy for large systems. Using our model, we study the appropriateness of the recent trends in hospital design calling for 100% private rooms. We show that even with isolation patients such an extreme approach could result in a significant degradation in the access of patients to hospital beds.

Joint work with Edieal Pinker from Yale University.

BIO

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