

The Hong Kong Polytechnic University
Department of Logistics and Maritime Studies
Research Seminar

Analysis of a New Class of Liver Allocation Policies

by

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Date: 2 March 2016 (Wednesday)
Time: 11:00am - 12:00nn
Venue: R407, Shirley Chan Building
The Hong Kong Polytechnic University

(Conducted in English)

Abstract:

The purpose of this study is to propose alternative MELD scores for liver transplant candidates with hepatocellular carcinoma (HCC), in order to achieve a more equitable allocation of livers between HCC and non-HCC candidates. We build a disease model for the dynamic health states of liver transplant candidates on the waiting list, where the transition probabilities between health states are estimated from Scientific Registry of Transplant Recipients (SRTR) data. We create a new open source discrete-event computer simulation model for the US liver allocation system. We validate our simulator by comparing the system performance metrics predicted by the simulator with those observed in the real world from the SRTR data.

The end goal of our project is to propose alternative HCC exception scores which are a function of both a HCC candidate's lab MELD and tumor biology in order to achieve a more equitable allocation of livers between HCC and non-HCC candidates. Because our policies are grounded by data and science, as opposed to the current ad-hoc policy, we believe that our policies will be easily accepted by medical community and patients.

Bio:

Zachary Leung is an assistant professor of Management Sciences at the City University of Hong Kong. He earned his BSc and MSc from National University of Singapore, and his PhD from the MIT Operations Research Center. After graduating with his PhD, he spent one year as a postdoctoral fellow at the CMU Tepper School of Business. The focus of his research is to tackle important real-world problems by applying analytics and operations management techniques. His research interests include: revenue management, supply chain management, and healthcare operations.

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All are welcome!