

Teaching OR to Health Care Professionals

In this talk, I will share my experience developing and teaching an operations research course for health care decision makers and professionals over the past decade. I have offered this highly rated course under the heading “Managing Patient Flow” but a more apt name might be “Managing Supply and Demand”. Its goals are to provide a basic problem-solving framework and hands on experience with a set of OR tools. Moreover it communicates the importance and value of developing an OR capacity within a health care organization.

All material draws on projects my colleagues and I have carried out in a wide cross-section of health care settings. These are communicated to the course participants in the form of cases, discussion problems, published research and an interactive game. The main themes are:

- The need for performance metrics and the challenges in evaluating them.
- The basic levers managers can use to improve access to services.
- The integrated nature of health care systems and the limits of local optimization.
- The limitations of lean approaches and the need for operations research methods.

The material draws from case studies and research on porter systems improvement, diagnostic imaging scheduling, reducing wait times for cancer care, reducing surgical cancellations, long term care capacity planning, workforce management and lean evaluation. OR tools emphasized include optimization, queuing and simulation. Excel add-ons and spreadsheets provide hands on experience.

In addition to describing my approach to teaching OR, it will provide an overview of my health care research.

<http://orincancercare.org/puterman/emba512> provides a course outline and links to a range of materials. See also <http://asg.sauder.ubc.ca/> for access to our appointment scheduling game.

SHORT BIO

Martin L. Puterman is Professor Emeritus at UBC’s Sauder School of Business. He regularly communicates with professional audiences through his numerous consultancies, and his regular interactions with senior health care managers. For the past 5 years he has taught a highly regarded course on health care operations to Executive and full time MBA students.

Moreover, he was founder and director of the UBC Centre for Health Care Management, the Centre for Operations Excellence at UBC, a recent winner of the INFORMS UPS Smith Prize, and the Biostatistical Consulting Service at BC Children’s Hospital. His research focuses on using operations research methods to improve health system access and performance. He has consulted widely on

health care operations and planning, statistical modeling, logistics, inventory control, forecasting, operations management, program evaluation and management strategy.

He received the prestigious INFORMS Lanchester Prize for his book Markov Decision Processes. He is an INFORMS Fellow and recipient of the Canadian Operations Research Society (CORS) Award of Merit, the CORS Practice Prize and the INFORMS case prize. He has been an editorial board member of Mathematics of Operations Research, Operations Research, Management Science, Production and Operations Management, Manufacturing and Service Operations Management and The Journal of the American Statistical Association.

He received his PhD in Operations Research and an MS in Statistics from Stanford University and AB in Mathematics from Cornell.