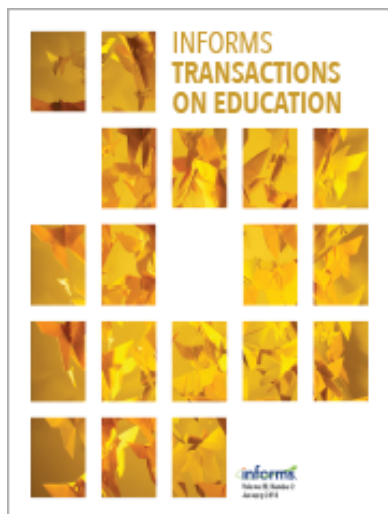




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Introduction to the Special Issue: Teaching Healthcare Operations Research, Part 2

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Life, as the saying goes, is what happens while you are making other plans. In the introduction to Part 1 of the ITE Special Issue on Teaching Healthcare Operations Research, I confessed that while I was listed as an editor on the issue, I had done very little editing work. In the early days of the review cycle for Part 1, my 10-year old son James and I lost his mom, Angela. Murray Côté and Armann Ingolfsson took over the editor duties and got the special issue to press while James and I got ourselves back on our feet.

Fast forward three years and Part 2 is now ready to go to press. Once again, I am writing the introduction to the Special Issue and confessing that I've done very little editing work. My friend and colleague, Murray Côté, has assembled a varied and interesting collection of papers for Part 2 and, as editor, has them ready for print. However, as the deadline for publication approached, Murray lost his mom, Anna. Therefore, I am writing this editorial for Murray, while he gets back on his feet.

The ITE Special Issue on Teaching Healthcare Operations Research sits at the junction of theory and practice, operations research and healthcare delivery, and analysis and applications. The five papers in Part 2 either introduce new operations research concepts to healthcare practitioners or illustrate OR principals using a healthcare example. A wide range of pedagogic formats appears, varying from illustrative simulations to case studies. The intended audience also varies: Some papers show how clever presentation can make operations research principles accessible to healthcare providers, while others provide insight for engineers through the application of theory to practice. Foremost in my mind when I read these papers is an appreciation of the depth of knowledge of the authors. All take complex concepts and make them clear using illustrative examples, while retaining the subtleties induced by their application in the realm of healthcare. It takes a deep understanding of both application area and OR theory to make presentation as seamless as those in Part 2 of the Special Issue.

In "How Big Should My Dot Be? Using Spreadsheet Simulation to Evaluate Process Improvement Data Collection Strategies," Willoughby and Teare describe an Excel based simulation tool to illustrate the application of run-charts to healthcare practitioners. The simulation allows professionals, who may or may not be comfortable with statistical concepts, to conduct what-if studies around sample size and determine its impact on detecting change in a process.

McLaughlin and Olson, in their paper "Teaching the Use of Systems Dynamics for Strategic Decision Making in Healthcare," describe their pedagogical approach to teaching healthcare professionals the rather difficult topic of systems dynamics. Shying away from discussions of differential equations, McLaughlin and Olson approach systems dynamics from modelling examples rooted in healthcare. Their approach breaks the modelling process into small steps and allows students to build upon their successes.

"A Prescription for Budget Woes at Gracious Hospital" by Hicklin, Ivy, and Villa-Parrish is a case study that illustrates inventory theory and is aimed at students in industrial engineering. The case describes a situation in which drugs in a hospital are dispensed from automatic dispensing cabinets (ADC) located throughout the facility. A number of issues with the ADCs are described, including cost, lack of available inventory, or expired inventory in the cabinets. Students are challenged to identify better inventory policies and to test these policies via a physical simulation, the execution of which is described as "controlled chaos."

Chambers and Williams in "Miller Pain Treatment Center—Eastern Hospital Outpatient Center" is another case study in which a natural experiment forms the basis for understanding the use of discrete event simulation. The case describes changes in process flow when the protagonist moves from a private practice to a teaching hospital. The audience is health care professionals and the case is intended to challenge modelling skills and illustrate how complexity impacts tool selection and application.

The final paper, “The BedGame—A Classroom Game Based on Real Healthcare Challenges” by Vliegen and Zonderland, is a fascinating example of how a simple, low-tech game can be used to illustrate complex concepts of resource capacity and service time variability. The game is structured like a case in which a hospital is required to reallocate a set of beds amongst different medical and surgical services. Players are unit managers and must decide which services to group in what wards. Two rounds of the game take place: One in which players try to optimize the allocation and location of resources for only their specialty; and a second round where a cooperative approach is suggested.

Part 2 will, I feel, be of interest to operations research practitioners and healthcare providers; the tools and techniques illustrated in these papers has a wide range of application and will be of interest to many audiences. They are, also, all interesting papers in their own right.

In closing, I would like to dedicate Part 2 of the Special Issue on Teaching Healthcare Operations Research to Anna and Laurent Côté, Murray Côté’s parents. I met them both in Saskatoon, Saskatchewan on a cold winter’s day some years ago. They were the kind of people that you knew, from the moment you met them, you were going to like.