SEMINAR TITLE
“A mixed integer programming model to locate traumatic brain injury treatment units in the Department of Veterans Affairs”

SEMINAR SPEAKER
Murray Cote
Division of Health Policy & Research
Health Sciences Center
University of Colorado, Denver

ABSTRACT
For the Department of Veterans Affairs (VA), traumatic brain injury (TBI) is a significant problem facing active duty military personnel, veterans, their families, and caregivers. The VA has designated TBI treatment as one of its physical medicine and rehabilitation special emphasis programs, thereby providing a comprehensive array of treatment services to those military personnel and veterans with TBI. Timely treatment of TBI is critical in achieving maximal recovery, and being in geographical proximity to a medical center with specialized TBI treatment services is a major determinant of whether such treatment is utilized. We present a mixed integer programming model for locating TBI treatment units in the VA. This model was developed for the VA Rehabilitation Strategic Healthcare Group to assist in locating new TBI treatment units. The optimization model assigns TBI treatment units to existing VA medical centers while minimizing the sum of patient treatment costs, patient lodging and travel costs, and the penalty costs associated with foregone treatment revenue and excess capacity utilization. We demonstrate our model with VA TBI admission data from one of the VA’s integrated service networks, and discuss the expected service and cost implications for a range of TBI treatment unit location options.

BIOGRAPHIC PROFILE
Dr. Murray Cote is an Associate Professor in the Division of Health Care Policy and Research, the Health Sciences Center, both at the University of Colorado at Denver, and past president of the Health Applications Section of INFORMS. Murray’s primary research interests are in health care operations, including patient flow, capacity planning and management, demand forecasting, and nurse staffing and scheduling, supported by funding from the National Science Foundation, Center for Medicare and Medicaid Services, Department of Veterans Affairs Rehabilitation Outcomes Research Center, and the Education and Research Foundation of APICS. His research has been published in Decision Sciences, the European Journal of Operational Research, and Socio-Economic Planning Sciences and has received awards from the Decision Sciences Institute and the Healthcare Financial Management Association.

For further information, contact the Department of Mechanical & Industrial Engineering, 334 Snell Engineering Center, Northeastern University, 360 Huntington Avenue, Boston, MA, 02115. Tel: (617) 373 2186; (Fax) 617 373 2921.