

## **125: DEVELOPMENT OF A REAL-TIME WAIT LIST MANAGEMENT SYSTEM IN A PUBLICLY FUNDED HEALTHCARE FACILITY**

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### **Objective:**

To develop and implement a wait list management system (WLMS) for elective Orthopaedic surgeries (knee and hip arthroplasty and knee arthroscopy) within Capital Health to enable the accurate and efficient collection of data on various parameters associated with patients' wait for surgery (size of list, rate of list growth, rate at which surgeries are performed, health and functional status of patients, surgeon rated priority) and to use the data to develop an integrated forecasting and simulation component to facilitate informed resource allocation decisions.

### **Methods:**

Surgery bookings were centralized to allow for standardized, prospective entry to the wait list. This process involves surgeons submitting completed booking forms with a rating of patient acuity (priority metric) to the Wait list Coordinator immediately. The priority metric is based on a visual analog scale (VAS) with a single question asking the surgeon to rate the patient priority based on all other patients that they have seen with a similar condition. A cross-sectional postal survey of patients on the wait list was conducted and included the WOMAC, SF36 and questions asking patients their degree of satisfaction with their access to orthopaedic surgery, whether or not they feel that their wait for surgery will impact upon the overall result, and the length of time they feel is appropriate to wait for surgery. A comprehensive analysis of data collection within the facility's enterprise systems uncovered a plethora of data related to aspects of patients' wait for surgery (eg., resource use, electronic chart and intraoperative data, standardized outcome measures (WOMAC, SF36)). Reporting systems were established to obtain and import this data into the WLMS to enable cross-referencing with the simulation component (predictive computer model) for validation, reassessment and fine-tuning to increase its clinical utility.

### **Results:**

The postal survey revealed SF36 and WOMAC scores 3 to 4 standard deviations below the population norm, over 50% of patients felt that wait time would affect their outcome, 80% of patients felt their wait should be 12 months or less, and over 50% were unsatisfied with their access to surgery. The priority metric scores (VAS) were normally distributed with good face validity (arthroscopy had lower priority than arthroplasty and revision surgery had highest priority). Preliminary wait list data indicates wait times of 130 to 300 days for arthroplasty and 90 to 400 days for arthroscopy. The ratio of booked to completed surgeries (traffic ratio) is currently 0.9 for arthroplasty and 1.5 for arthroscopy. Enough data has been gathered to construct the simulation component which is now in the final stages of validation.

### **Conclusions:**

In this facility patients are adversely affected prior to coming to surgery, are unsatisfied with the length of their wait, and the wait list continues to grow due to increasing demand for arthroplasty (i.e., aging population) and the fact that current traffic ratios exceed the maximum value for a stable waitlist (0.7 as dictated by queue theory). The priority metric has face validity as a relative scale for rating patient acuity and will facilitate standardization across surgeons. Prospective outcomes with respect to the wait list will allow more accurate delineation of what minimum acceptable wait times for orthopaedic surgery should be from administrative, surgeon and patient perspectives. Collection of comprehensive data has enabled creation of a simulation component in the WLMS to test the effect altering levels of different resources (i.e., OR time, bed availability, number of surgeons, etc.) may have on the wait for surgery.