



CUMMING SCHOOL OF MEDICINE

# Optimal Shift Duration For Emergency Physician Efficiency, Effectiveness and Safety

## A comparison of 6, 7, and 8-hour shifts

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- ED physicians must be efficient, yet maintain safety standards and high quality of care
- 2014 census – record population growth in Calgary  
→ more access to Calgary EDs
- Literature gap around productivity, efficiency for < 8-hr shifts and how it relates to patient safety



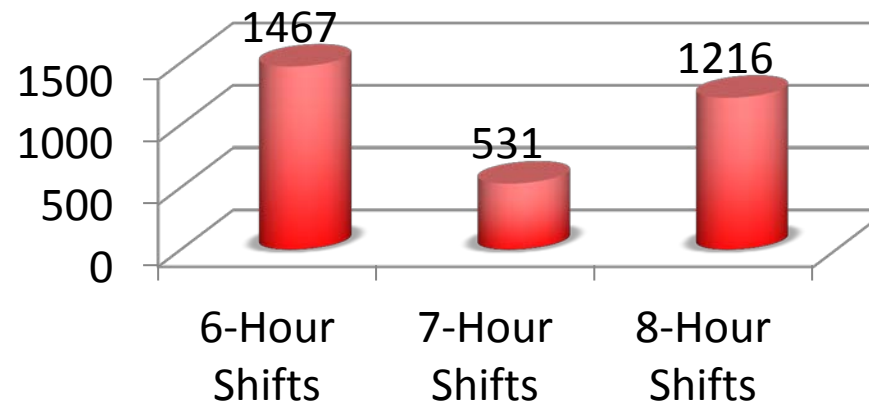
- Is there a difference in the efficiency of patients seen per hour between 6, 7, or 8-hour shifts in the ED?
  
- Does shift length affect:
  - The number of patient handovers?
  - Unscheduled ED revisit rates?



- Retrospective Study of 1 Calgary ED
  - 81 physicians, 79,941 visits during a 1-year period
- Online scheduling system/ administrative database used to compare shift data:
  - Scheduled shift length and patients seen per hour
  - % of patients handed over to next physician
  - Return visits within 72-hour period

- 41 physicians met inclusion criteria
  - Worked  $\geq 30$  shifts of varying lengths over 1 year period
- Minor Treatment shifts excluded
  - Faster patient turnover

**Total Number of Shifts Included:  
3214**



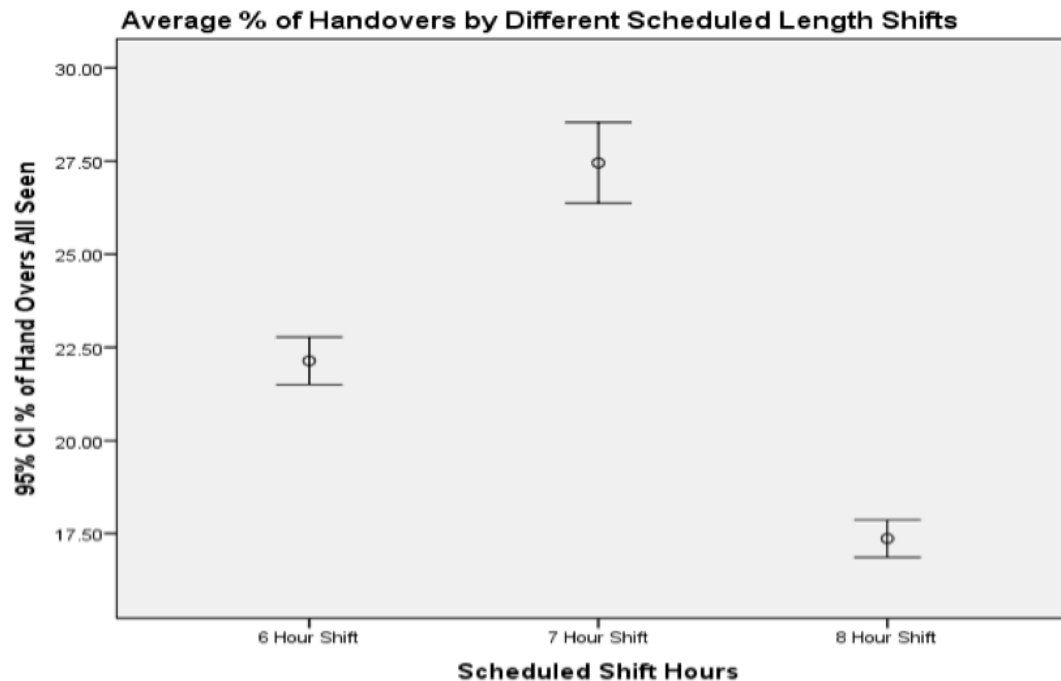


- 6-Hour: 2.56 Patients/ hr
- 7-Hour: 2.75 Patients/ hr
- 8-Hour: 2.5 Patients/ hr

$P < 0.001$



- Results based on individual physician handovers:
  - 6 Hour: 22.14 %
  - 7-Hour: 27.45 %
  - 8-Hour: 17.36 %



- No significant difference in 72-hr return rates between the 3 shift lengths:
  - 6 Hour Shift 3.91
  - 7 Hour Shift 3.77
  - 8 Hour Shift 3.71
    - $P = 0.62$



- Inclusion of night shifts
  - All night shifts at this location are 7-hrs
  - Higher handover rate of patients following night shift



## ■ Implications

- Efficiency of EDs
- Patient safety is main consideration: fewer handovers in 8-hour shift
- Physician preferences
- Staffing considerations