Response to "After hours surgery and mortality: the potential role of acute care surgery models as a factor accounting for results"

We thank Lardner and colleagues[1] for their interest in our article. Our next step is to explore potential mechanisms for our reported associations.[2]

We agree that factors of care may help to explain the association between treatment setting and mortality after hip fracture. Indeed, we offered factors related to access (bed occupancy, presence of orthopaedic trauma services, staff and equipment levels) and delivery (surgical volume, treatment style, and prioritization) as potential mechanisms reported in the literature.

Lardner and colleagues[1] further suggest procedure time as a potential mechanism that relates both to access and delivery. Patients admitted in the evenings may have to wait longer for their surgery. If their operation is at night, they may receive their surgery from a less experienced surgeon. Further, postoperatively these patients may be transferred to a ward after hours, where there is less available nursing staff to monitor for complications than during daytime hours, or where co-management by a perioperative medical team is not available.[3] Yet, it remains unclear whether delayed access and reduced resources following after-hours admissions or procedures increases the risk of death.[4–6]

The Canadian Collaborative Study on Hip Fractures will explore the effect of after-hours admission time, procedure volume and bed occupancy on risk of death after hip fracture.[7] Further, the British Columbia Hip Fracture Redesign Project is collecting prospective data on procedure time to determine the effect of after-hours procedures on outcomes.[8] We hope these analyses will shed light on the mechanism underlying our reported association between treatment setting and death. At that time, we may begin to implement and evaluate interventions (such as dedicated daytime orthopaedic trauma rooms) to combat the underlying mechanisms, and hopefully, improve outcomes at all treatment settings for these vulnerable patients.

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Competing interests: For authors' competing interests, see reference 2.