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RESPONSE TO LARDNER ET AL

Katie Jane Sheehan, Boris Sobolev and Pierre Guy for the Canadian Collaborative Study of Hip Fractures.

We thank Lardner and colleagues for their interest in our recent article. We found more deaths after admission to medium and small community hospitals than teaching hospitals. We also found more deaths for those surgically treated at medium community hospitals compared to teaching hospitals.(1) The next step is to explore potential mechanisms for our reported associations.

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 further suggest the procedure time as a potential mechanism which relates both to access and delivery. Patients admitted in the evenings may have to wait longer for their surgery. They may receive their surgery from a lower-grade 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. Yet, it remains unclear whether delayed access and reduced resources following after-hours admissions or procedures increases the risk of death.(2-4)

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.(5) Further, the British Columbia Hip Fracture Redesign Program is collecting prospective data on procedure time to determine the effect of after-hours procedures on outcomes.(6) We hope these analysis 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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6. BC Hip Fracture Redesign Project [Available from:
[http://www.hiphealth.ca/research/research-projects/Hip-Fracture-Redesign/Hip-Fracture-Redesign/.](http://www.hiphealth.ca/research/research-projects/Hip-Fracture-Redesign/Hip-Fracture-Redesign/)]