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Publication date:
2018

Document Version
Publisher's PDF, also known as Version of record

#3576

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An Analysis Of Administrative Data From 34 Hospitals In Eight Countries.

Sten Rasmussen[1], Georgia Chan[2], Perla J. Marang-Van De Mheen[3], Andrew Gordon[4], Ove Talsnes[5]

1. Department of Orthopaedic Surgery, Aalborg University Hospital, Aalborg, Denmark
2. Dr Foster/Telstra Health in association with the Dr Foster Unit at Imperial College London, London, United Kingdom
3. Department of Medical Decision Making, Leiden University Medical Center, Leiden, Leiden, The Netherlands
4. Department of Orthopaedic Surgery, Sheffield, United Kingdom
5. Department of Orthopaedic Surgery, Elverum, Norway

Background

An increasing number of patients with chronic diseases such as degenerative spine, hip and knee need operative treatment. During the last decades, the population health has increased. The number of hospital beds and the length of hospital stay (LOS) has decreased.

Purpose

The question is whether we can expect this decrease in length of stay to continue in a linearly fashion or whether this decrease will level off? The purpose of this analysis was to evaluate the trends in LOS for lumbar fusion, total hip (THA) and knee arthroplasty (TKA) and hip fractures in hospitals participating in the Global Comparators international benchmarking collaborative.

Materials and Methods

We explored hospital administrative data for the period 2008 through 2014 for 34 University Hospitals from Australia, Belgium, Denmark, Finland, Great Britain, Italy, Netherlands and USA. We used fixed and random effects modelling, adding country as a grouping variable. We included data on 15905 lumbar fusion 56772 THA, 69182 THA and 47104.

Results

For lumbar fusion, there was no change in LOS. For THA, there was reduction in LOS from 8.1 to 4.6 days. Adjusted the reduction in LOS decreased by year ($P < 0.001$). For TKA, there was a reduction in LOS from 7.7 to 4.5 days. Adjusted the reduction in LOS decreased by year ($P < 0.001$). For hip fracture, there was a minor reduction in LOS from 4.9 to 4.5 days. Adjusted the reduction in LOS decreased by year ($P < 0.001$).

Conclusions

Mean LOS reduced after THA, TKA and hip fractures but this trend seems to level off. For hip fracture, there is an indication that LOS have reached a plateau. For lumbar fusion, we found no change in LOS. Given increasing numbers of elderly, this suggests that hospital capacity might have to increase, as reduction in LOS cannot compensate the increasing number of patients.

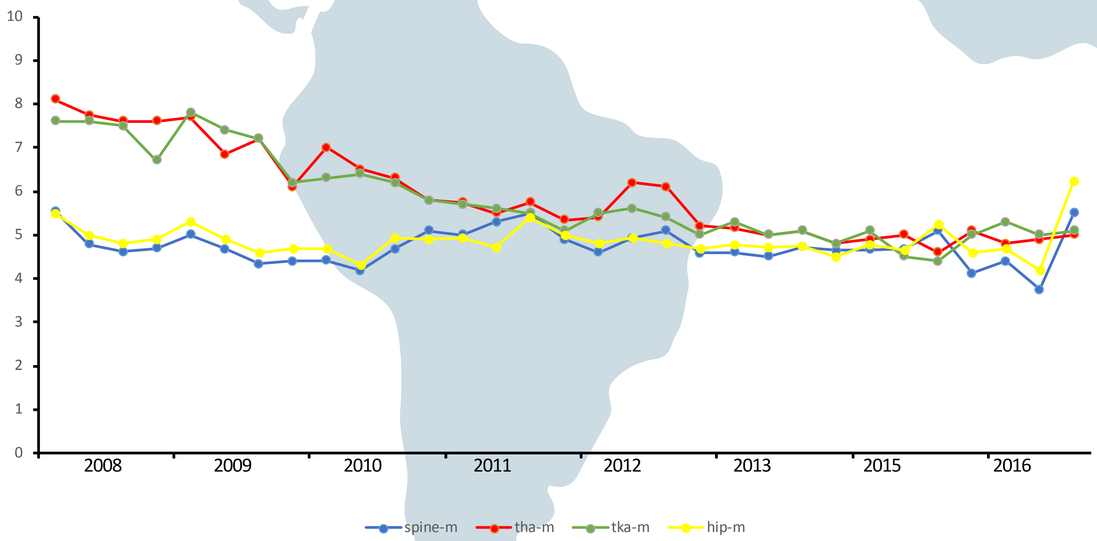

Figure 1. Observed unadjusted trend of quarterly mean length of stay in days.

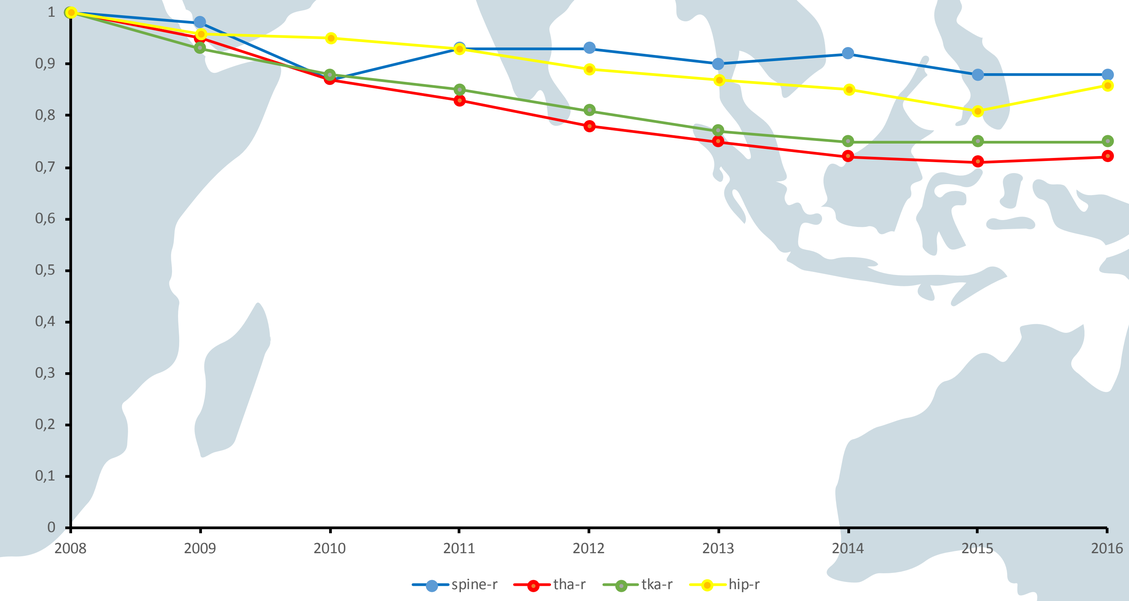

Figure 2. Adjusted trend in reduction of length of stay. Fixed effect model adding country as a variable, adjusted for co-morbidity, age, in-hospital death and interactions.

AALBORG UNIVERSITY HOSPITAL
Denmark

Sten Rasmussen MD PhD
Phone: +45 25 52 04 62
E-mail: sten.rasmussen@rn.dk