

Introduction

Perfecting the balance between patient safety and resident wellbeing is an ongoing process in the United States and in 2003, the ACGME implemented resident duty hour restrictions with these goals in mind. Using 10 years of post-reform data, we seek to elucidate the long-term impact of the ACGME duty hour restriction on patient mortality from Acute Ischemic Stroke.

Methods

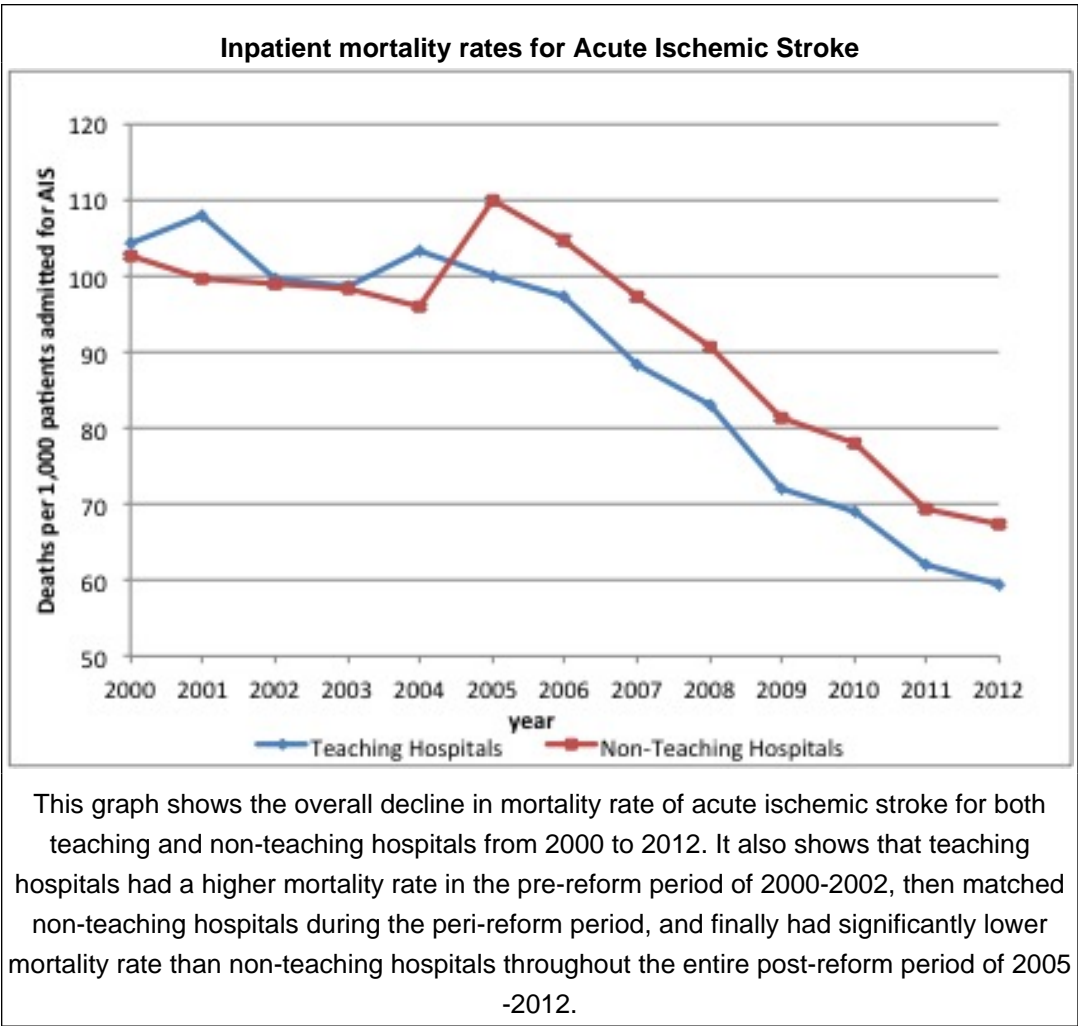
Using the Nationwide Inpatient Sample data, we conducted a retrospective cohort study comparing the deaths per 1,000 adult patients admitted to teaching and non-teaching hospitals for AIS from 2000-2012. Trend analysis and two-proportion z-test were preformed with a p-value of 0.01 to identify differences in mortality rates of teaching and non-teaching hospitals by year.

Results

Over thirteen years, a total of 6,997,569 stroke discharges were recorded for this study. From 2000 to 2012 the mortality rate significantly decreased for both teaching and non-teaching hospitals by 4.35% and 3.44% respectively (p-value < 0.000). In the pre-reform period, teaching hospitals had a significantly greater mortality rate for AIS than non-teaching hospitals (p-value < 0.011). Mortality rates shifted in the peri-reform period with no-significant difference in 2002 and 2003. One year after ACGME duty hour policy, teaching hospitals again had a significantly greater mortality rate. However, throughout the entire post-reform period of 2005-2012 teaching hospitals had a significantly lower mortality rate than non-teaching hospitals for AIS.

Conclusions

Our results indicate that the ACGME duty hour restrictions had a positive impact on patient safety for AIS while reducing the weekly hours worked by residents. Over the 13 years, national improvements in stroke recognition



and treatment lead to significantly reduced mortality rate from AIS for both teaching and non-teaching hospitals. Similar analysis should be done to gain a broader understanding of how ACGME resident duty hour restrictions have impacted patient mortality rates for other common diseases and surgical procedures. Research such as this may illuminate whether or not there is a difference in the optimal number of duty hours for surgical versus medical residents in order to achieve improved patient safety.