Objective To analyze the impact of surgical approach in survival of patients with endometrial cancer.

Methods Using the National Cancer Data Base, patients who underwent hysterectomy upon diagnosed of endometrial cancer from 2010 to 2015 were identified. Data collected were demographic, tumor characteristics, perioperative outcomes, adjuvant treatment, and survival. Univariable and multivariable Cox proportional hazard model was used to identify factors associate with survival. Survival (OS) was analyzed with the Kaplan-Meier curve and compared by the log-rank test.

Results 109,143 patients met inclusion criteria. Open surgery was performed in 30833 (28.3%), laparoscopy in 20344 (18.6%), and robotic in 57946 (53.1%). Laparoscopy improved survival 10% (HR=0.9; 95%CI 0.8–1.0; p=0.0009), and robotic improved survival 20% (HR 0.8; 95%CI 0.8–0.9; p=0.0001) in hazard of death compared with open for the entire cohort. The 30-day and 90-day mortality rate favored laparoscopy and robotic approach. For patients younger than 65 years old, the 5-year survival was 86.9% (95%CI 0.863–0.875), 92.3% (95%CI 0.916–0.929), and 93.3% (95%CI 0.929–0.936) for open, laparoscopy and robotic approach, respectively (p<0.0001). For elderly population, 5-year survival was 66.9% (95%CI 0.658–0.679), 77.6% (95%CI 0.764–0.788), and 79.1% (95%CI 0.783–0.798) for open, laparoscopy and robotic, respectively (p<0.0001). The 5-year survival was higher in young patients when compared with the elderly (p<0.0001). Factors associated with survival were age, performance status, race, tumor characteristics, and adjuvant therapy. For elderly patients, laparoscopy, and robotic improved survival in hazard 10%, (p <0.0001) when compared with open surgery.

Conclusion Minimally invasive surgery improved survival in patients with endometrial cancer.