

## **From Memphis to Carmona: A Cost Comparison of Suture Utilization and Operative Times in General Surgery**

**Aubrey Schachter, MD 1; Olivia DeLozier, MD 1; Maria Cecilia Leyson, MD 2; Martin Fleming, MD 1; Nia Zalamea, MD 1**

**1 Department of Surgery, University of Tennessee Health Sciences Center, Memphis, TN, US, 2 Department of Surgery, Ospital Ng Maynila Medical Center, Manila, Philippines**

**Introduction:** Surgical care is one of the costliest components of the healthcare system, with up to 33% of hospital waste in the United States originating in the operating room. Evaluation of surgical care in low-to-middle-income countries (LMICs) can help to highlight areas of waste in high-income countries (HICs) that may be modified to decrease spending.

**Methods:** We compared resource utilization in partial thyroidectomy and open inguinal hernia repair (IHR) between HICs and LMICs. HIC data was obtained from a hospital in Memphis, Tennessee from January – April 2022. LMIC data was obtained from a surgical relief trip to Carmona, Philippines with Memphis Mission of Mercy in February 2023. Number of sutures opened was used as proxy for resource utilization. Case duration was recorded from incision to closure.

**Results:** There were 10 IHR and 11 partial thyroidectomies performed at each site, with a different set of operative surgeons at each site. Significantly less suture was opened in LMIC cases as compared to HIC cases in both IHR (4.3 vs. 15.6,  $p < 0.01$ ) and partial thyroidectomies (5.5 vs. 12.4,  $p < 0.01$ ). Operative times were shorter in LMIC cases in partial thyroidectomies (67.1 vs. 105.1 min,  $p < 0.01$ ). There was no significant difference in operative time in IHR (64 vs 100 min,  $p > 0.01$ ).

**Conclusion:** HICs have high healthcare expenditures and generate large amounts of waste, specifically from surgical care. We have demonstrated that some spending in HIC may be unnecessary. Awareness of disparities between LMIC and HIC resource use may limit extraneous healthcare spending amongst HICs.

**One Liner:** Surgical care in Low- and Middle-Income Countries can have more efficient resource utilization than High-Income Countries, which should be used as a model for improvement.