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Specialization and utilization after hepatectomy in academic medical centers

Joshua J. Shaw, MD,^{a,*} Heena P. Santry, MD,^a and Shimul A. Shah, MD^b

^a Department of Surgery, Surgical Outcomes Analysis & Research (SOAR), University of Massachusetts Medical School, Worcester, Massachusetts

^b Transplant Division, Department of Surgery, University of Cincinnati, Cincinnati, Ohio

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ABSTRACT

Background: Specialized procedures such as hepatectomy are performed by a variety of specialties in surgery. We aimed to determine whether variation exists among utilization of resources, cost, and patient outcomes by specialty, surgeon case volume, and center case volume for hepatectomy.

Methods: We queried centers ($n = 50$) in the University Health Consortium database from 2007–2010 for patients who underwent elective hepatectomy in which specialty was designated general surgeon ($n = 2685$; 30%) or specialist surgeon ($n = 6277$; 70%), surgeon volume was designated high volume (>38 cases annually) and center volume was designated high volume (>100 cases annually). We then stratified our cohort by primary diagnosis, defined as primary tumor ($n = 2241$; 25%), secondary tumor ($n = 5466$; 61%), and benign ($n = 1255$; 14%).

Results: Specialist surgeons performed more cases for primary malignancy (primary 26% versus 15%) while general surgeons operated more for secondary malignancies (67% versus 61%) and benign disease (18% versus 13%). Specialists were associated with a shorter total length of stay (LOS) (5 d versus 6 d; $P < 0.01$) and lower in-hospital morbidity (7% versus 11%; $P < 0.01$). Patients treated by high volume surgeons or at high volume centers were less likely to die than those treated by low volume surgeons or at low volume centers, (OR 0.55; 95% CI 0.33–0.89) and (OR 0.44; 95% CI 0.13–0.56).

Conclusions: Surgical specialization, surgeon volume and center volume may be important metrics for quality and utilization in complex procedures like hepatectomy. Further studies are necessary to link direct factors related to hospital performance in the changing healthcare environment.

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1. Introduction

Every year, over 10,000 hepatectomies are performed in the United States. Ninety percent of these hepatectomies occur at academic medical centers [1]. The Agency for Healthcare Research and Quality has estimated that the annual costs of hepatectomies in the United States exceed 100 million dollars

[1]. Academic medical centers are staffed by surgeons representing many specialties, including general surgeons, surgical oncologists, and transplant surgeons who may perform hepatectomies with varying degrees of frequency despite differences in their surgical training and specialization. Previous studies focusing on lung and pancreatic cancer resection have shown significant differences in patient outcomes,

* Corresponding author. Department of Surgery, University of Massachusetts Medical School, 55 Lake Ave North, Worcester, MA 01655. Tel.: +1 617 842 5996; fax: +1 508 856 8629.

E-mail address: joshua.shaw3@umassmemorial.org (J.J. Shaw).

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