



Starting the conversation about value in liver transplantation: Invited Commentary on “Is there value in volume? An assessment of liver transplant practices in the United States since the inception of MELD”



Liver transplantation (LT) is a complicated endeavor, integrating numerous expensive components into the care of a single individual. Like other surgical procedures in medically complex patients, LT necessitates expensive pre-, intra-, and post-operative care, the extensive use of medical and ancillary support, and the possibility of costly complications. Transplantation adds additional and unique expenses, including the organ acquisition fees and the transport for organ procurements, both increasing in the current era of broader sharing. Decision-making for LT is challenging, with each liver organ offer prompting an incompletely informed multivariate analysis with both lives and dollars at stake, balancing the projected risks, benefits, and costs of a proposed donor/recipient combination against the uncertain outcome of waiting until the next offer arrives. In this murky milieu of high stakes, high costs, and high levels of uncertainty, finding a clear definition of “value” in the LT process is an arduous, but necessary, task.

In this issue of *Surgery*, Patel et al took a high-level view of the complex LT ecosystem and provided a simplified value definition to start the conversation about what “value” in LT really means. The authors defined value as “an exchange of goods and services for costs,” with 1-year graft survival rates considered as the “goods and services,” and the post-LT hospital length of stay (LOS) as the “costs.”¹ Overall, the authors reported that the measured LT value in the United States has increased over time with period-specific improvements in both 1-year graft survival and LOS. Importantly, the magnitude of value increase over time correlated with center volume, with large centers creating more value by decreasing LOS despite increases in donor and recipient complexity compared to smaller centers. This finding suggested that the value and volume in LT may be correlated, placing LT in parallel with other complex procedures (eg, pancreaticoduodenectomy and cardiac surgery).

This streamlined definition of value is not without shortcomings, as the 2 variables chosen for analysis cannot tell the entire story of the benefits and costs along the LT care pathway. Pretransplant costs—including the evaluation and management of complications—are not considered, nor is the “aggressiveness” of centers in transplanting their listed patients and shifting patients into the value-measured post-LT category. Graft survival is an important, but not freestanding, metric of the “goods and services” quality. Focusing on the index, post-transplant admission LOS ignores the cost of readmissions and lacks the consideration of access to resources (eg, skilled nursing facilities

and rehabilitation centers) that may favor larger centers. Nevertheless, the authors readily acknowledged these shortcomings and highlighted the need for collecting more comprehensive data that better reflects the multifaceted aspects of quality across the ESLD and LT spectrum.

Although improving data collection to fine-tune this definition of LT value is certainly desirable, it is important to recognize that LT is uniquely unsuitable for an iron-clad value definition, due to the lack of a reasonable alternative therapy. An obvious contrast is end-stage kidney disease in which the survival, quality of life, and cost metrics can be compared with dialysis, favoring transplantation.² Similarly, end-stage heart disease patients may be offered a transplantation or mechanical assist devices; with a heart transplant costing less than the placement of a left ventricular assist device, all while providing an improved survival and quality of life.³ A LT can only be compared with the medical care of the cirrhotic patient,⁴ or, occasionally, a transjugular intrahepatic portosystemic shunt—both are unreasonable options for most patients with significant complications of liver disease.

Despite these challenges, the time has come to discuss and refine our perception of LT value. We are entering a period of rapid change in LT practice, marked by the changing patterns of liver disease etiology, increased distances traveled for organs, and a necessary surge in the use of marginal grafts. The emergence of high-cost, potentially high-reward perfusion devices is accelerating change, and it may recalibrate our current perceptions of how LT is practiced and what it should cost.⁵ As these forces threaten to change the value proposition of LT, we need to establish our current value proposition as a baseline. Patel et al offered an imperfect but worthy initial definition, which is the opening statement of a conversation we need to have urgently.

Funding/Support

This research did not receive any specific funding from any agencies in the public, commercial, or not-for-profit areas

Conflict of Interest/Disclosure

The authors have indicated that they have no conflicts of interest regarding the content of this article.

Andrea M. Meinders, MD^a, Mark J. Hobeika, MD, FACS^{a,b,*}

^a *Department of Surgery, J.C. Walter Jr. Transplant Center, Sherrie and Alan Conover Center for Liver Disease and Transplantation, Houston Methodist Hospital, TX*

^b *Department of Surgery, Weill Cornell Medical College, New York, NY*

* Corresponding author: Mark J. Hobeika, MD, 6550 Fannin Street, Smith Tower, Suite 1661, Houston, TX 77030.

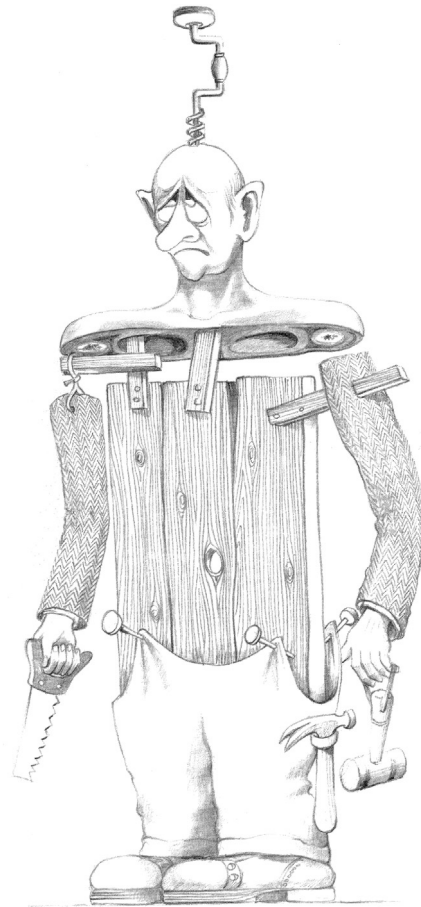
E-mail address: mjhobeika@houstonmethodist.org (M.J. Hobeika).

Twitter: @ameinders4, @markhobeika

Accepted 2 June 2022

References

1. Patel MS, Wang BK, MacConmara M, et al. Is there value in volume? An assessment of liver transplant practices in the United States since the inception of MELD. *Surgery*. 2022.
2. Held PJ, McCormick F, Ojo A, Roberts JP. A cost-benefit analysis of government compensation of kidney donors. *Am J Transplant*. 2016;16:877–885.
3. Mulloy DP, Bhamidipati CM, Stone ML, Ailawadi G, Kron IL, Kern JA. Orthotopic heart transplant versus left ventricular assist device: a national comparison of cost and survival. *J Thorac Cardiovasc Surg*. 2013;145:566–573. discussion 573–574.
4. Volk ML, Mellinger J, Bansal MB, Gellad ZF, McClellan M, Kanwal F. A roadmap for value-based payment models among patients with cirrhosis. *Hepatology*. 2019;69:1300–1305.
5. Ward A, Klassen DK, Franz KM, Giwa S, Lewis JK. Social, economic, and policy implications of organ preservation advances. *Curr Opin Organ Transplant*. 2018;23:336–346.



A Board-like Abdomen