

Center Differences in Model for End-Stage Liver Disease Exceptions: Fairness, Local Culture, and Norms of Practice

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Fairness seems like a simple concept understood even by children, but ensuring fairness in resource allocation turns out to be quite difficult. Fairness can be divided into criteria and process. To paraphrase the esteemed philosopher Norman Daniels, we may never agree on the criteria, but we should at least perceive that the process is fair.¹

The current primary criterion used for organ allocation in liver transplantation is based on the principle of urgency, which is operationalized as the patient's probability of dying from liver disease in the near future. In most patients, this is measured with the Model for End-Stage Liver Disease (MELD) score. Like any prognostic index, the MELD score works only to predict a specific thing (death from liver disease) in a specific population (cirrhosis with impaired synthetic function). It does not correlate well with quality of life,² nor does it do a good job of predicting death from miscellaneous complications of liver disease such as hepatopulmonary syndrome or from other conditions that would benefit from transplantation such as amyloidosis. Thus, the transplant community has needed to develop a process for prioritizing such patients. Some of these complications, such as hepatocellular carcinoma, are common enough that a standardized exception score has been set. However,

various other complications (eg, cholangitis), which are called nonstandardized exceptions or nonrecognized exception diagnoses (non-REDs), are reviewed on a case-by-case basis by regional review boards (RRBs).

Is the MELD exception process fair? New information provided by Goldberg et al.³ in this issue of *Liver Transplantation* suggests that the answer is, unfortunately, not really. The authors reviewed 58,641 candidates for liver transplantation; on behalf of 4356 of these patients (7.4%), at least 1 non-RED exception application was made. Hierarchical regression techniques were used to investigate the reasons for variation in exception applications and to understand the extent to which variation occurred at the patient, transplant center, and regional levels. In other words, if rates of exceptions vary by center, is this variation due to between-region differences in the strictness of RRBs, and does this strictness exert feedback regulation of center behavior? Alternatively, could it just be that some centers have sicker patients than others? The authors found that although exception applications did vary by region, as previously documented, there was a 3-fold greater variation by center that was independent of the region in which the centers were located. Despite adjustments for between-center differences in patient characteristics, rates of exception applications varied more than 4-fold between centers in the same region. As might be expected, because approval decisions occur at the regional level, between-center differences

Abbreviations: MELD, Model for End-Stage Liver Disease; non-RED, nonrecognized exception diagnosis; RRB, regional review board.

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in approval rates were much smaller. These data provide compelling evidence that centers differ in their behavior regarding the submission of exception applications on behalf of their patients and that this behavior is not driven by variations in the severity of patient illness or by the whims of local RRBs.

Concerns about the fairness of MELD exceptions are further heightened by Goldberg et al.'s finding that in a multivariate analysis, women, African Americans, Hispanics, and patients with Medicaid insurance were all statistically significantly less likely to have an exception application, as shown in Table 6 of their article.³ These are traditionally vulnerable populations, and all have been shown to be underserved by the transplant system in various ways.⁴⁻⁶ On the positive side, minorities and patients with Medicaid insurance seemed to fare slightly better at the RRB level, as shown in Table 7 of their article. Women, however, not only were 21% less likely to have an exception application ($P=0.001$) but also were 14% less likely to have their exception approved ($P=0.07$). This is somewhat surprising, in that it is common knowledge that women tend to have slightly lower MELD scores than men with liver disease of a given severity because their serum creatinine levels are lower.⁵ Further study is needed to understand the reasons behind these disparities.

Why are physicians at one center much more likely to submit exception applications than physicians at another center? This finding could not be explained by center-level differences in volume or the competitiveness of the local environment. Only the median match MELD score was associated with a likelihood of a higher submission rate, and the magnitude of this association was small. I would theorize that these differences are primarily due to differences in local culture and norms of practice. Most transplant physicians spend the majority of their career practicing at one center, and many practice at the same center at which they completed their training. At national meetings, few of us spend time comparing our rates of exception applications with our colleagues' rates at other centers; in fact, most of us can only guess at our own personal rates. When deciding whether to apply for an exception on a patient's behalf, we habitually behave as we have always behaved and similarly to how colleagues at our own center behave. Such center-level differences have been shown for other behaviors in liver transplantation, such as organ utilization practices.⁷

In summary, the process for determining MELD exceptions does not fully adhere to the accepted criterion of urgency. A given patient's probability of receiving a MELD exception is determined not just by his or her probability of dying from liver disease but also by his or her race/ethnicity, sex, socioeconomic status, and geographic location. What then are some possible solutions? Because most of the variation is at the center level, a national review board would not solve the problem. One solution is improved prognostic models.

It is possible that the upcoming incorporation of serum sodium into the MELD score (the MELD-Na score) will reduce the need for non-RED exceptions in some patients, although this remains to be seen. Another solution is the delineation of formal criteria for RRBs to follow. One hypothesis for partially explaining center differences is that centers with representatives on RRBs have inside knowledge about what types of applications are likely to receive a favorable review, and this makes these centers more likely to submit applications. The 2006 consensus guideline on MELD exceptions was developed as a review of the available evidence and not as a working document for RRBs.⁸ Perhaps it is time for the liver transplant community to develop a more granular set of protocols and standards. Finally, the most powerful tool for reducing center-level variability would be to provide each center with feedback about its practices with respect to national averages. Normative feedback has long been recognized as a crucial component of change in physician behavior,⁹ and I have argued that it is underused in transplantation.⁷ Feedback would at least promote consistency, which is an important—and measurable—aspect of fairness.

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