Concise Commentary: Remaining Outside the Hospital Is a Golden State in Cirrhosis—Lessons from California

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The challenge of decreasing avoidable readmissions for chronic medical conditions has broad societal, financial, and medical implications. The success of tactics to address this issue has been recognized as an important determinant of hospital efficiency by the US Centers for Medicare and Medicaid Services [1]. This is particularly true for cirrhosis; nowhere is the burden of disease in this population more starkly illustrated than in the problem of hospital readmissions [2]. Therefore, identification and mitigation of modifiable risks for readmission among cirrhotic patients remain important goals of investigation.

In a well-designed observational cohort study published in this issue of *Digestive Diseases and Sciences*, Wei et al. [3] have taken a longitudinal, state-wide approach to the analysis of readmissions within 30 days of discharge for patients with cirrhosis-related hospitalizations in California. The team found that almost a fifth of subjects were readmitted during the 30 days following discharge. As expected, patients with more severe liver disease were more likely to be readmitted within 30 days, especially those with ascites, hepatic encephalopathy, or hepatocellular carcinoma [4]. In agreement with other studies, variceal bleeding was not a significant driver of readmission [5].

Interestingly, a hospital's status as a liver transplant center, rather than its actual volume of cirrhotic patients was one determinant of a decreased risk of readmission. As noted

by the authors, this may reflect greater experience in caring for cirrhotic patients; it may also be due to more focused management of liver disease and the ability to provide liver transplant services at such centers. The absence of a significant difference between high- and low-volume hospitals may also speak to the relative paucity of available interventions to decrease readmission in cirrhotic patients.

The study utilized a large, robust, electronic claims database [the Healthcare Cost and Utilization Project (HCUP) database] compiled from patients hospitalized in the most populous state in the USA. A unique feature of this study is California's distinct racial and ethnic diversity, responsible for the socioeconomic and cultural factors that informed reported readmission disparities between ethnicities, in addition to the underlying medical conditions. The use of a claims database does not allow for a detailed understanding of the factors such as laboratory values that underlie improved care for cirrhotic patients, or those that would drive individual hospitals or practices toward refining their strategies for delivering such care. Greater knowledge of these factors could inform tailored strategies to prevent readmission, including hospital-based system redesign [6], individual patient and caregiver contact [7], and enhanced post-discharge follow-up [8]. Furthermore, the HCUP database largely does not include the population in care in medical centers operated by the US Department of Veterans Affairs, where similar trends in cirrhosis-related readmissions exist [9].

It is also relevant that while there are preventable readmissions, a sizable group of readmissions are actually necessary and may indeed reflect greater contact between the clinical team and patients post-discharge [9]. Moreover, studying a 90-day post-discharge period may also be of interest in this population, since the risk of readmission is maintained even this far out after discharge [4].

Ultimately, this paper underscores the relevance of a population perspective for cirrhosis in highlighting broad trends that can serve as a focus on the creation of preventative

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programs. Further research is needed to integrate all levels of service and determine the necessity of the readmissions.

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