

# ADVANCES IN HEPATOLOGY

Current Developments in the Treatment of Hepatitis and Hepatobiliary Disease

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## Workforce Issues in Hepatology



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### G&H Why is the burden of liver disease and complexity of care rising?

**SP** One reason is that the risk of metabolic dysfunction-associated steatotic liver disease (MASLD) is on the rise. Approximately 30% of the US population has MASLD, although not all of these patients are going to develop cirrhosis and decompensated liver disease. With MASLD-associated cirrhosis comes increases in the risk of liver cancer, decompensation, and need for liver transplant.

Additionally, there has been an increase in therapeutics in the field of hepatology, increasing the complexity of care. Twenty to 30 years ago, we did not have all of the tools that are available now. There are currently many more ways to noninvasively measure advanced fibrosis with elastography and improved biomarkers such as the Enhanced Liver Fibrosis test. Hepatitis C virus infection can be cured in nearly all patients now. There are also currently several therapies for metabolic dysfunction-associated steatohepatitis that were not available even just 3 years ago. There have also been improvements in organ preservation for liver transplant patients, and transplant populations are living longer.

### G&H What are the main drivers of hepatology workforce shortages?

**SP** One is that there are many competing specialties in gastroenterology, and many providers choose other specialties like inflammatory bowel disease or advanced endoscopy. Some providers may want to go into private practice rather than work at an academic center. However, the way our current training structure is organized, trainees who choose transplant hepatology are for the

most part limited to large academic centers. Another driver is limited early exposure to hepatology. I was lucky; I rotated on a hepatology service as a third-year medical student and fell in love with it. However, not everyone gets that exposure. Some residents are not officially on a hepatology service until their third year of residency, if at all, when they have already figured out what they want to do and are already matched to fellowships or going into primary care. Finally, financial compensation for academic hepatologists is usually less than general gastroenterology or other gastroenterology specialties, either in private or academic settings.

### G&H Could you discuss geographic disparities in hepatology care?

**SP** Multiple studies have looked at gastroenterology workforce adequacy overall, not just for hepatology. There is overrepresentation of the gastroenterology workforce in the Northeast compared with the Midwest, West, and particularly the South. It is predicted that in 2037 the South will have approximately 80% of the gastroenterology workforce needed, as opposed to the Northeast, which will have approximately 133%. Additionally, rural areas will have approximately 30% of the needed gastroenterology workforce vs metropolitan areas. The shortages of hepatologists within this are even more dramatic.

### G&H What is the impact of reduced access to hepatologists or liver transplant centers?

**SP** Patients who live closer to an academic transplant center generally have better access to transplant evaluation and referrals. A real-world example is Chicago, which

has 5 liver transplant centers, compared with the rest of Illinois, where there are none. It may take someone from South Illinois 4 or 5 hours to drive to a transplant center. Expanding access to general hepatologists in surrounding communities could improve the management of advanced liver disease for these patients while also facilitating more timely referrals to transplant centers, leading to earlier evaluation and better outcomes. Geography can also intersect with insurance barriers. Parts of Northwest Indiana are only about 35 miles from Chicago, but

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patients with Indiana Medicaid may be restricted to seek care in Indiana alone, which only has 1 transplant center that may be much farther for the patient. Additionally, when hepatology services are limited in a region, providers may not be aware that transplant evaluation practices have evolved. For example, many centers now consider selected patients with alcohol-associated cirrhosis for transplant evaluation without requiring the traditional 6-month period of sobriety.

#### **G&H** Can telehealth help address some of the gaps in hepatology care?

**SP** Telehealth has tremendous potential to improve access to hepatology care, particularly for patients who live far from specialty centers or have difficulty traveling. In many cases, patients who are stable may only need to come to the transplant center for procedures or for the transplant itself, whereas much of their pre- and post-transplant care can be delivered virtually. Telehealth can reduce unnecessary travel, improve continuity of care, facilitate earlier specialist involvement, and help ensure that patients receive appropriate referrals before their disease becomes too advanced. Additionally, telehealth can also strengthen the expertise of local providers and support them in managing patients with chronic liver disease through specialist consultation and education.

One of the best examples is Project ECHO, an innovative telementoring model that connects specialists (in this case hepatologists) with primary care physicians and other clinicians practicing in rural and underserved communities. The program was originally developed to expand access to treatment for hepatitis C virus infection, enabling community providers to successfully manage patients who otherwise would not have had access to specialty care. As hepatology workforce shortages continue, telehealth will likely remain an important strategy for extending specialty expertise to communities where access is limited.

#### **G&H** Should there be alternative training pathways in hepatology?

**SP** In my opinion, we need to start rethinking hepatology training pathways. Although the gastroenterology fellowship remains one of the most competitive subspecialty training programs, we continue to face a shortage of hepatologists. One idea is whether the name of the fellowship should be changed to Advanced Hepatology and Transplant, shifting the focus from transplant to the management of patients with decompensated cirrhosis.

Could there be multiple different pathways? The traditional gastroenterology fellowship requires 3 years followed by 1 year of transplant for a total of 4 years. To help address workforce shortages, a new 2 + 1 pathway was introduced, which allows eligible trainees to complete 2 years of gastroenterology fellowship followed by 1 year of transplant hepatology fellowship, reducing the total training time to 3 years. That was an important step, but I am not sure it fully addresses the underlying issue. There are trainees who are passionate about liver disease but are less interested in transplant medicine. Could there be a pathway with a 2-year gastroenterology fellowship and 1 year focused on general and advanced hepatology without requiring training at a liver transplant center? Such a fellowship could emphasize the diagnosis and management of chronic liver diseases, cirrhosis and its complications, and referral to transplant centers when needed.

The most controversial idea would be to separate hepatology from gastroenterology entirely and establish it as its own independent fellowship, with endoscopy training incorporated into the curriculum and an optional advanced transplant track for those who want to specialize further. I am not necessarily advocating for that model, but I do think it is worth discussing, especially given the current and projected workforce shortages. An independent hepatology fellowship might attract physicians whose primary interest is only liver disease (and not gastroenterology) and could provide another avenue into the field without requiring that trainees first match into an increasingly competitive gastroenterology fellowship.

We have inadvertently created a training bottleneck—the largest obstacle is at the very point of entry. Although we do not have data, I would assume this could limit the number of trainees who go into hepatology. I do not know what the right solution is, but I do know that we need to start having these conversations, explore new approaches to training, and be willing to rethink our assumptions if we want to build a workforce that can meet the growing burden of liver disease.

### **G&H** Could artificial intelligence help workflow, for example, by highlighting patients at risk for liver disease?

**SP** There is a role for artificial intelligence (AI) in medical care, but we do not know exactly what that looks like right now. AI could potentially analyze medical records, laboratory data, imaging, and other clinical information to identify patients at high risk for advanced liver disease who might otherwise go unrecognized. It could flag patients with persistently abnormal liver tests, alcohol use disorder, or metabolic risk factors who need additional evaluation or referral to a hepatologist. Not every patient with fatty liver disease needs specialty care, but AI could help identify those at greatest risk for progression to advanced fibrosis or cirrhosis who would benefit from timely referral. This could be especially valuable in primary care, where physicians are managing so many different things for their patients. I do not think AI is ready to replace our clinical judgment. If a patient comes in with elevated liver function tests, I do not think that AI is going to be able to offer a differential diagnosis and treatment plan as well as a physician could. However, there is a way for AI to be integrated into medical health care to make our workflow more efficient and decrease administrative burdens. I use AI daily for its note-writing capabilities and have dramatically decreased the time I spend with documentation in electronic medical records.

### **G&H** Could you discuss any other proposed solutions for hepatology workforce issues?

**SP** Having early exposure to hepatology curriculum and rotations in medical school, especially during residency, is important. The internal medicine residency program at the University of Chicago had a mandatory hepatology rotation and found that it increased the comfort of the residents in managing cirrhosis and liver-related illnesses. There was also some increased interest in having a career in hepatology, but that was not sustainable. Visibility is

also important. We can be impactful by being visible at conferences, especially those for medical students and residents. Our societies also have great programs; for example, the American Association for the Study of Liver Diseases' Emerging Liver Scholars program allows residents increased exposure to hepatology with direct mentorship. Pay equity is another important issue that deserves attention. We need to better understand whether compensation is one of the factors that discourages physicians from pursuing transplant hepatology and, if so, how to address it. Additionally, we should consider expanding and further integrating advanced practice providers (APPs) into hepatology care. One approach would be with a fellowship or training program for those who want to specialize in hepatology. Our center is doing an APP fellowship for inflammatory bowel disease, so perhaps we need to start looking at that practice model.

### **G&H** What further research and next steps are needed in this area?

**SP** We need to better understand what attracts medical students, residents, and gastroenterology fellows to—or discourages them from pursuing—a career in hepatology. Their perspectives could help inform future training pathways. Should there be a pilot program that looks at a model other than the 2 + 1 pathway? We need more research to understand which training models are most effective and which changes would strengthen the hepatology workforce.

### **Disclosures**

*Dr Paul has no relevant conflicts of interest to disclose.*

### **Suggested Reading**

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