What impact does a specialized center for transplantation and heptobiliary disease have on post-graduate resident training of gastroenterologists and surgeons?

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What impact does a specialized center for Hepatobiliary disease and transplantation have on the training of general Gastroenterologists and Surgeons? Currently, the post-graduate medical training environment in the United States is in tremendous evolution. Many changes are already common practice in the European community. In July 2003, guidelines regarding trainee work-hours and programmatic curricular topics became requirements for continued accreditation by the Accreditation Council for Graduate Medical Education (ACGME) in the United States. In order to ensure efficient resident education and compliance with work-hour guidelines, trainee clinical rotations are assigned more for the educational value of the clinical experience versus 'service' requirements for house staff. Due to limited work hours, training programs must now be meticulously organized in order to cover mandatory topics in a shorter time period. More burden is being placed on the house officer to supplement his or her clinical exposure with independent study and readings when not in the hospital [1]. Traditional models of immersion learning in academic medical centers, where large volumes of patients are cared for, is being re-examined. The current trend in post-graduate residency training is to expose the trainee to broad-based clinical training with limited numbers of patients [2] which often leaves the trainee ill-equipped to handle intricate and complicated disease states in an individual patient. With the increasing technological advances, sophistication of anti-Hepatitis therapy and complexity of patients with liver disease requiring operative and/or medical interventions, specialized Transplant/Hepatobiliary centers, or disease specific centers, are alternatives to care for these types of patients. Other specialties such as Cardiology and Cardiac Surgery, Neurology, Orthopedics and Ophthalmology have established specialized free-standing hospitals or disease specific centers within traditional academic medical settings with demonstrable improvement in efficiency in patient care, improvement in patient outcomes and focused residency training [3–5]. Unlike Ophthalmology, Orthopedics and Neurology, however, Transplant/Hepatobiliary surgery and Hepatology are post-residency fellowships and do not have their own designated residency-training programs. The question arises if care of the complicated liver patient is designated to specialized centers or free standing specialty hospitals, how will this affect the training of General Surgery Residents as well as the General Gastroenterology fellow vs. the Transplant Surgery and the Hepatology fellows? First, let us review what are the current requirements for accreditation for General Surgery residents; Gastroenterology fellows versus the Transplant Surgery/Hepatologist in transplant related fields of study in the United States and Canada.

1. Current requirements for the training of general surgeons

Current ACGME requirements for General Surgery training require that the programmatic curriculum include fundamentals of basic science as applied to transplantation; however, there is no patient care or operative requirement as defined by the Surgical Residency Review Committee (RRC). In fact, there is no case requirement for transplant procedures in the defined case categories required by the ACGME/RRC. There is, however, a requirement for 10 liver cases that include anatomic, and non-anatomic resections as well as biopsy procedures of the liver—a very small number [6]. Likewise, the American Board of Surgery (ABS) does not require exposure to transplant surgery as such; however, there is a requirement for ' pre- and post-operative management of disease processes of the alimentary tract and abdominal contents' [7]. This statement is vague enough to be interpreted independently by each training program to meet individual programmatic needs. Likewise, for GI fellowship training, the American Gastroenterological Association (AGA) has established curriculum guidelines that meet the ACGME core medical fellowship requirements. This curriculum defines a core curriculum over 18 months for clinical training, including a

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Abbreviations: ABS, american board of surgery; ACGME, accreditation council for graduate medical education; GI, gastroenterology; RRC, residency review committee; UNOS, united network of organ sharing.

12-month period to acquire specialized expertise in a more focused area such as hepatology, therapeutic endoscopy, or biliary interventions. The total training time for a general GI fellowship is to be no more than 3 years to cover these requirements [8].

2. Requirements for fellowship training

In comparison, the American Society of Transplant Surgery (ASTS) has set guidelines for standardizing and accrediting transplant surgical fellowship training programs. As Transplant Surgery is not an ACGME accredited specialty, training programs must meet ASTS guidelines for ASTS accreditation and meet UNOS guidelines for certification of individuals at the completion of their training. The ASTS's Education committee determines the structure of training including curriculum recommendations and minimum patient volumes for adequate experience [9]. ASTS approval includes two separate accreditation processes: institutional as well as trainee accreditation. Each approved fellowship position in the institution must perform 30 kidney, 45 liver and 20 pancreas transplants as primary surgeon during the course of their training program in order to be certified for each organ [10]. The ASTS has not yet established numbers of cases to be certified for living donor liver operations other than to be trained in a UNOS approved living donor liver program. The ASTS sets no limits or goals for hepatic resections other than to meet the UNOS requirements of 10 resections per 2 years for living donor liver surgeons. Currently, there is no movement in the transplant surgical community to be recognized by the ABS as a separate surgical specialty with a separate board designation. Currently, there is no requirement that an ASTS fellowship be associated with an accredited General Surgery training program. Unlike in some European or Asian training centers, hepatobiliary training in the Unites States has no separate fellowship designation. The Society for Surgical Oncology (SSO) has initiated a standardization process for oncology fellowships to include oncologic procedures of the liver but this will not include procedures for portal hypertension or transplantation.

Similarly, the American Society of Transplantation (AST) and American Association for the Study of Liver Disease (AASLD) have developed standards for training transplant hepatologists. Training institutions must be a UNOS approved liver transplant program and be affiliated with an ACGME accredited GI training program. Patient volumes must include a minimum of 30 liver transplant s per year or 20 per approved fellowship position. The institution must provide fulltime faculty including a medical director, a fully trained hepatologist, who has expertise in managing patients with liver disease. Curricular recommendations include selection of appropriate recipients and donors, both living and cadaveric, as well as immunosuppressive management and evaluation of allograft dysfunction. Special emphasis is placed on providing experience with living donor liver transplantation with recommendations of offsite training if the home institution cannot provide an in house experience [11]. UNOS requirements for qualification for Liver Transplant Program Medical Directorship are included in the recommendations for training by the AST and AASLD [12].

3. The proposed impact of specialized centers on post-graduate resident training

In light of the requirements for training each type of trainee, how would specialized hospitals or disease specific centers affect the training of general Ssurgeons and general GI fellows? For general surgery residents one could imagine a significantly adverse effect, as transplant surgery is not a required rotation by either the RRC or ABS and the number of HPB cases required is very small. Specialized centers or hospitals could potentially not have residents involved in their transplant programs as educationally, Transplant surgery, and to some extent, hepatobiliary surgery is not a requirement. Limited work hours mandated by the ACGME work hour guidelines have made many training hospitals virtually short manpower; that is, with the same number of residents, work hours are at least 20% less than estimated prior to 2003. This discrepancy has led to limited physician availability in some institutions where administrations have not responded quickly enough with expansion of clinical infrastructure [13]. Secondary to issues of manpower, many training programs have limited or done away with rotations not in the primary sponsoring institution or rotations that are not required by accrediting bodies. In fact, current US RRC requirements adopted November 2005 require participating training institutions, other than the primary sponsoring institution, to provide an educational proposal explaining the rationale as to why their site is integral to the required program curriculum. This proposal must be approved by the ACGME for the off site location to be an approved part of the training program [14]. Without exposure to transplant or complex hepatobiliary procedures, general surgery resident's exposure to donor procurements, anatomical dissections involving complex vascular and biliary structures, and biliary reconstruction techniques would be severely limited. Finally, in the long term, having a general surgery population not familiar with the basics of treating critically ill, chronically immunosuppressed patients is not in our transplant patient's best interest. Certainly, an experienced physician best deals with the complications associated with complex hepatobiliary procedures. One can imagine a transplant or hepatobiliary patient being treated for a surgical emergency in a center where the general surgeons have no experience or exposure to patients with this type of illness with potentially the extra layers of complex immunosuppression or complex biliary anatomy. Likewise