



STANDARDS FOR HEPATO-PANCREATO-BILIARY TRAINING

**Education and Training Committee
INTERNATIONAL HEPATO-PANCREATO-BILIARY ASSOCIATION
2008**

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1.0 DEFINITIONS

1.1 Hepato-Pancreato-Biliary (HPB) Surgeon

1.11 An HPB surgeon is an expert surgeon who has obtained additional training and experience in the multidisciplinary approach to the diagnosis, treatment, and rehabilitation of HPB patients and devotes a major portion of his or her professional practice to these activities as well as HPB education and advancement of knowledge in the field.

1.2 Hepato-Pancreato-Biliary (HPB) Training Program

1.21 An HPB training program should provide core knowledge and expertise to prepare its graduates to be expert HPB surgeons who interact with a multidisciplinary team to provide comprehensive care for HPB patients as well as leadership in the surgical, medical and lay communities in matters pertaining to HPB disease.

2.0 OBJECTIVES

An HPB Fellowship Training Program should provide fellows with the following:

2.1 Knowledge, Clinical Experience and Technical Skills

- 2.1.1 Knowledge, clinical experience and technical skills to provide comprehensive, state-of-the-art care to HPB patients.
- 2.1.2 Knowledge and experience in the interpretation of HPB imaging studies, including ultrasound, computerized tomography, magnetic resonance imaging, cholangiography, pancreatography, and angiography.
- 2.1.3 Knowledge and experience to determine disease stage and natural history as well as treatment options for individual HPB patients at the time of diagnosis and throughout the course of the disease.
- 2.1.4 Broad knowledge of nonsurgical treatment options including endoscopic, interventional radiologic, oncologic and medical therapies. This requirement includes an understanding of disease biology, indications for and complications of multimodality therapy.
- 2.1.5 Experience and technical skill in performing complex HPB operations, including new techniques.
- 2.1.6 Experience and technical skill in performing palliative surgical procedures and knowledge of nonsurgical palliative options.
- 2.1.7 Knowledge of HPB tumor biology, epidemiology, tumor markers and tumor pathology.

2.2 Training in HPB Surgery and Transplantation

- 2.2.1 A minimum of 12 months of clinical training in the surgical management of HPB patients is required for training in HPB surgery.
- 2.2.2 If liver transplantation is included, a minimum of 24 months of clinical training is required for training in HPB surgery and transplantation.
- 2.2.3 Each HPB surgery fellow must participate in the critical or key portions of a minimum of 100 major HPB operative procedures. This operative experience may be graded; however, at the completion of the fellowship the HPB fellow is expected to be able to perform major HPB operations independently. Minimum numbers for specific disease-site categories are:

Pancreatic operations	– 30
Hepatic operations	– 25
Complex biliary operations	– 20

With respect to these minimum case numbers:

- 2.2.3.1 Experience in each of the three HPB operation categories is required.
 - 2.2.3.2 Experience in minor procedures such as liver biopsy, pancreatic biopsy and cholecystectomy are expected but are not considered to be major HPB operative procedures.
 - 2.2.3.3 Experience in intraoperative ultrasound is required.
 - 2.2.3.4 Experience in tumor ablation is required.
 - 2.2.3.5 Experience in minimally invasive HPB staging is required, and experience in minimally invasive HPB surgical procedures is highly desirable.
 - 2.2.3.6 Experience in transabdominal ultrasound as well as percutaneous or endoscopic diagnostic or therapeutic procedures is not required.
 - 2.2.3.7 Each HPB surgery fellow must document his or her operative experience.
 - 2.2.3.8 Experience in liver transplantation is not required for training in HPB surgery.
- 2.2.4 If additional training in liver transplantation is being sought, each HPB surgery fellow must participate in the critical or key portions of a minimum of 50 transplant procedures including the following minimums:

Liver transplant – 30
Donor procurement – 25

This operative experience may be graded; however, at the completion of the fellowship the HPB fellow receiving additional training in liver transplantation is expected to be able to perform organ procurement and liver transplantation independently.

2.3 Training in Research

- 2.3.1 Knowledge of the design and implementation of a prospective data base.
- 2.3.2 Knowledge of the design and conduct of prospective clinical trials.
- 2.3.3 Knowledge of the interface between basic science and clinical care to facilitate translational research.

2.3.4 Knowledge of statistical methods to properly evaluate the results of published research studies.

2.4 Training in Education

2.4.1 Knowledge and skills to train students and residents in the multidisciplinary management of HPB patients.

2.4.2 Knowledge and skills to train non-physicians (physician assistants, nurse practitioners, etc.) in specialized HPB care.

2.4.3 Skills to organize and conduct HPB-related public education programs.

2.5 Leadership in HPB Disease

2.5.1 Skills to develop and support:

- institutional programs related to HPB malignancies including a tumor registry,
- institutional policies regarding HPB surgery training,
- multidisciplinary conferences on HPB disease, patient care and research, and
- psychosocial and rehabilitative programs for HPB patients.

3.0 PROGRAM REQUIREMENTS

3.1 General Requirements

An HPB Fellowship consists of a minimum of 12 months of continuous education and training following completion of a general surgery residency. At least 24 months are required if liver transplantation is included. A portion of the program should be devoted to clinical research. Fellows should have access to faculty who can mentor them in basic science research and have the option for such an experience if desired.

- 3.1.1 An adequate opportunity should be provided to interact with interventional radiologists, pancreatobiliary endoscopists, gastroenterologists, hepatologists, transplant surgeons, medical oncologists, radiation oncologists, and pathologists. These experiences may be obtained by formal rotations on specialty services, participation in structured multidisciplinary conferences, attendance at specialty tumor clinics, or inclusion of specialty patients on a single HPB service. Trainees should be taught the appropriate approach to interacting and communicating with referring physicians and nonHPB surgeons as well as to perform consultations for HPB patients.
- 3.1.2 Initial outpatient assessment, preoperative decision making, perioperative management, and patient follow-up are essential to the training experience. To the greatest extent possible, HPB fellows should participate in the preoperative evaluation, assessment, treatment planning, and postoperative ambulatory care of patients in whose surgery they participate. As a guide, HPB fellows should see preoperative and postoperative ambulatory patients at least one full day out of five, or its equivalent.
- 3.1.3 Clinical experience alone is insufficient education in HPB surgery. The training program must develop a regularly scheduled didactic program consisting of conferences, lectures, debate series, and/or journal club, covering not only clinical surgical problems but also nonsurgical, basic science, clinical research, and ethical problems. HPB fellows must participate, and program directors must be able to provide proof of fellow attendance at didactic conferences.
- 3.1.4 The HPB surgery fellowship program must not conflict with the regular general surgical training programs at the participating institution. HPB fellows' clinical responsibilities must be in accordance with the guidelines of governing surgical trainee review bodies. In most circumstances, an HPB fellow should not be responsible for the same patients or for the same service as the most senior general surgical trainee. In other words, the fellows' experience should not diminish the experience of general surgery trainees in their final year of training. Rather, an HPB surgery fellowship program should complement an institution's general surgery training program by developing a focus of excellence in HPB management

that can be observed and experienced by all surgical trainees and attending staff.

- 3.1.5 The HPB fellowship sponsoring institution must be accredited by the responsible national organization overseeing healthcare quality issues. The general surgery training program of the sponsoring institution (if applicable) must be fully accredited by the appropriate national governing body charged with oversight of surgical training programs.
- 3.1.6 The institution must provide an appropriate educational environment and ensure adequate trainee supervision. Patient support services, work hours, and on-call schedules should be reasonable and allow HPB fellows to participate in scholarly activities such as in-house didactic conferences as well as local, regional and national meetings. Access to a library and on-site electronic literature retrieval capabilities are required.
- 3.1.7 The program director must be certified (or equivalent) in general surgery and a member of the International Hepato-Pancreato-Biliary Association (IHPBA), the American Hepato-Pancreato-Biliary Association (AHPBA), the Asian-Pacific Hepato-Pancreato-Biliary Association (A-HPBA) or the European Hepato-Pancreato-Biliary Association (EHPBA). The faculty must demonstrate evidence of scholarly activity in HPB disease, as evidenced by participation in basic science research; clinical research protocols; presentations at local, regional, or national meetings; and/or publications in peer-reviewed journals.
- 3.1.8 Each HPB fellow's progress during the program must be formally evaluated in writing and feedback provided to the fellow at least semi-annually by the HPB program director and faculty. The HPB fellow should be advised of any deficiencies in time to correct problems prior to completion of the fellowship.
- 3.1.9 HPB fellows must be given the opportunity to evaluate the program overall, as well as all rotations, conferences, and faculty. These evaluations should be obtained in as confidential a manner as possible. The program director should regularly assess the post-training clinical and research activities of past HPB surgery fellows to determine whether the goals of the training programs are being achieved, namely, the production of effective HPB surgery specialists.

3.2 Training in HPB Surgery

- 3.2.1 Minimal times for HPB surgery and transplantation fellow training are outlined in 2.2.1 and 2.2.2, respectively.
- 3.2.2 Minimal operative experience for each fellow in HPB surgery for HPB operations are outlined in 2.2.3 and for liver transplantation are outlined in 2.2.4, respectively.

- 3.2.3 The HPB program should provide a minimum of 100 major HPB operative procedures per year as well as adequate training for both HPB fellows and general surgery trainees, if present.
- 3.2.4 HPB programs that provide liver transplant experience should provide a minimum of 30 transplants per year as well as adequate training for both fellows and general surgery trainees, if present.
- 3.2.5 The HPB program should provide experience in intraoperative ultrasound, tumor ablation, and minimally invasive staging as well as exposure to minimally invasive HPB operations.
- 3.2.6 The program director should review the HPB fellow's operative log regularly. The program director must have a system to address and correct operative experience deficiencies promptly.

3.3 Additional Essential HPB Training

- 3.3.1 The fellowship must provide exposure to and experience in the multidisciplinary management of HPB disease. Rotations on nonsurgical services alone will not substitute for an understanding of the integration of multiple HPB-related specialties in the treatment of HPB patients.
- 3.3.2 The fellowship must provide opportunities to participate in multidisciplinary clinics, tumor boards, or conferences. Specialists involved in these opportunities should include interventional and diagnostic radiologists, pancreatobiliary endoscopists, gastroenterologists, hepatologists, medical oncologists, radiation oncologists, pathologists, and transplant surgeons.
- 3.3.3 HPB fellows also should gain experience in providing supportive care to HPB patients, including pain management and parenteral and enteral alimentation, as well as rendering emergency surgical care. HPB fellows also should have an understanding of rehabilitative services in various settings.

3.4 Research Training

- 3.4.1 Clinical research must be included in the training program. HPB fellows should have opportunities to design and implement clinical research protocols, and each HPB fellow should initiate or participate in an investigative project and should be sufficiently familiar with statistical methods to properly evaluate research results. Presentation and peer-reviewed publication of at least one research project is expected.
- 3.4.2 Each HPB fellow must complete a course on clinical research on human subjects. Online courses approved by national research bodies are acceptable. Ethics of research on human subjects must be included in the curriculum.

- 3.4.3 Training in basic methodology for conducting clinical trials, including biostatistics, clinical research design, ethics, and implementation of computerized data bases must be provided.
- 3.4.4 Laboratory research is optional. Fellows who desire this experience should be encouraged to work with basic science research faculty mentors on or off-site and as time and funding allows.