

## INTERVENTIONAL NEPHROLOGY TRAINING CENTERS

Practical Details for Interested Institutions  
2023 Edition

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## 1. OBJECTIVES OF ISN INTERVENTIONAL NEPHROLOGY TRAINING CENTERS

The demand for interventional nephrology training has been steadily growing in low- and middle-income countries, where number of interventionalists is very limited, and patients often miss dialysis treatment because of vascular access problems. For young nephrologists who want interventional nephrology training, the opportunity to be trained in developed countries is rarely available. If they can be trained in the ISN-recognized centers with some funds for training, they will provide better quality of care for dialysis patients and train others interventional nephrologists in the same region.

The first IN Training Centers were selected in 2020, and applications rounds for the Interventional Nephrology Scholarship Program have been held annually ever since. The Scholarship Program has proved to be extremely popular, with more high-quality applications than could be supported by the 12 original IN Training Centers. As such, the ISN once again welcomes applications for new IN Training Centers, as well as opening up possibilities for training in more topics.

ISN Interventional Nephrology Training Centers host trainees for two types of courses:

- Foundation course (2-4 weeks) – designed for trainees who need training in a specific interventional procedure. (hands-on or observership)
- Advanced course (3 months) – designed for trainees who need training in a broad spectrum of procedures, especially endovascular procedures. (must be hands-on, with the Scholar being able to practice the procedures themselves)

Both courses are accompanied by an online component – the Interventional Nephrology E-learning Curriculum must be completed by all Scholars.

## 2. BENEFITS OF BEING AN ISN INTERVENTIONAL NEPHROLOGY TRAINING CENTER

Selected centers will receive approval as ISN Interventional Nephrology Training Centers for a five-year term.

At the end of this period, selected centers will have the option to re-apply to remain an ISN Interventional Nephrology Training Center.

Selected centers will host trainees from low- and middle-income countries for a Foundation Course (2-4 weeks) or for an Advanced Course (3 months). ISN will support these trainees with a grant to contribute to their travel, accommodation and living costs during the training.

ISN Interventional Nephrology Training Centers will benefit from increased visibility at national, regional and global levels – they will be promoted on the ISN website and all other ISN communication channels.

Selected centers will receive a certificate and may state that they are an '*ISN Interventional Nephrology Training Center 20XX-20XX*' (with the ISN logo alongside this statement) on their letterhead and other communications.



Please note that ISN recognition does not provide certification according to the criteria of any existing postgraduate training organization.

### 3. HOW TO APPLY

The deadline to apply is September 1st. The application must be completed in English. Only applications submitted via the application portal will be considered.

[CLICK HERE TO APPLY](#)

#### Eligibility criteria

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- No restriction in terms of country income category as classified by the World Bank
- The program liaison officer and senior nephrology staff involved in the training should be **full ISN members**.
- The center should either:
  - have university affiliated programs or accredited academic programs as per regional/national regulations for at least 2 years
  - or
  - have performed specific procedures for at least 2 years such as tunnelled HD catheter insertion, PD catheter insertion, diagnostic endovascular procedures, therapeutic endovascular procedures (PTA, thrombectomy, stents insertion, coils embolization, etc), dialysis vascular access ultrasound, vascular access surgery, etc.
- The center should have performed at least 200 interventional procedures in the previous year of application.

#### Facility and equipment requirements

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The center should:

- Have a designated space to perform procedures: interventional suite within radiology, surgery, cardiac cath. lab or designated nephrology suite
- Have the following equipment: Fluoroscopy C-arm (or equivalent), Vascular ultrasonography machine, Operating table, Adequate lighting, Patient monitoring needs (pulse oximetry, cardiac monitor, ECG, oxygen supply)
- Have a proper recovery area
- Have a storage area
- Meet safety needs as per local/regional requirements and regulations



- Maintain quality assurance records: procedure log, complications (as per ASDIN guidelines), outcomes, radiation safety log. It should be ongoing with the aim of developing regional guidelines
- Prioritise patient safety with contingency plans for management of complications, emergencies, and maintain standard operating procedure plan.

## Requirements for Trainer

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- The program liaison officer and senior nephrology staff involved in the training should be **full ISN members**.
- Trainers should either be:
  - nephrologists, surgeons, radiologists, cardiologists who have performed these procedures for at least 2 years
  - or
  - nephrologists who were trained by ISN Educational Ambassadors and have performed these procedures for at least 2 years.

## General tips and comments

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### Application:

The application is a lengthy process and we recommend you allocate enough time for it before submission. The ISN will select a limited number of ISN Interventional Nephrology Training Centers and only candidates with a strong application file will be accepted.

### Forms:

Your application must be submitted via the **online application system**. Applications sent by email, fax or post will not be considered.

### ISN membership:

Interventional Nephrology Training Centers serve as ISN beacons within a region. The program liaison officer and senior staff at these centers are expected to be **active members of the ISN community with full ISN Membership**. Explore different ISN membership opportunities for your colleagues and become part of the ISN community. If membership fees are not paid, the application will not be considered.

### Language:

The application and all enclosed documents must be written in English. Documents submitted in any other language will not be accepted.

## 4. REVIEW OF APPLICATIONS

The ISN Interventional Nephrology Working Group will review applications and forward its recommendations to the ISN Programs Chair for approval. The names of centers selected will be submitted to the ISN Executive Committee for final approval.



Assessment will be based on the criteria listed below:

- Facilities and equipment available at the training center
- Number of procedures undertaken in the last 2 years
- Experience of the trainers
- Available curriculum and possibility of hands-on training
- Language of training
- Local accreditation (by professional organization or government)
- Adequate governance, planning, staffing and with quality insurance
- Relevance of training offered to the region

The outcome of applications will be announced within two months of the deadline. The selected centers will be encouraged to host trainees accepted by the ISN Interventional Nephrology Working Group in the application sessions held in January each year.

## 5. ROLE OF ISN INTERVENTIONAL NEPHROLOGY TRAINING CENTERS

The primary objective of ISN Interventional Nephrology Training Centers is to provide interventional nephrology training to young nephrologists in low, lower-middle, or upper-middle-income countries from their region through the ISN Interventional Nephrology Training Courses.

Each application round for Interventional Nephrology Scholarships, IN Training Centers select which applicants they would be willing to train. The ISN then makes the final selection of who will receive funding and certification as part of the Scholarship Program.

In addition, like all ISN Regional Training Centers, ISN Interventional Nephrology Training Centers are expected to promote ISN activities in their region.

### ISN Interventional Nephrology Training Courses

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To be eligible to apply for the ISN Interventional Nephrology Training Courses, trainees should be full ISN members, from a low, lower-middle, or upper-middle income country as classified by the World Bank, and have the guarantee from the home institution of their re-employment once the training has been completed.

There is one application session per year, and applications are reviewed by the ISN Interventional Nephrology Working Group. Trainees must complete the '*Interventional Nephrology eLearning Program*' before starting the hands-on training at the host center.



### Interventional Nephrology eLearning Program:

Didactic components are standardized with the Interventional Nephrology eLearning Program on the ISN Academy. It includes sessions on:

- Introduction to interventional nephrology
- Fundamentals of vascular anatomy
- Fundamentals of vascular access – Catheter, AVF, AVG.
- Physiology of AV access dysfunction
- Monitoring and surveillance techniques principles
- Physical examination of AV access
- Central venous catheter and its complications
- Management of catheter related blood stream infection
- Safety rules for IN procedures – sedation, radiation, infection prevention
- Physics of Ultrasonography and its roles in AV access assessment
- Basics knowledge on tools used to perform IN procedures
- CVC designs for temporary/bridge access
- PD catheter - design, placement steps, complications
- Kidney biopsy - needles, sample handling, indications and complications

Once the Interventional Nephrology eLearning Program is completed, trainees can start the hands-on training, which includes the following procedures:

- Tunneled and non-tunneled central venous catheter placement
- Peritoneal dialysis catheter placement
- Endovascular (angioplasty, thrombectomy, etc)
- Native and non-native kidney biopsy
- Point-of-care ultrasonography (specific to kidneys)

The ISN Interventional Nephrology Training Courses offer two levels of hands-on training: a Foundation Course and an Advanced Course.

### Level 1 – Foundation Course:

The Foundation Course is a training of 2 to 4 weeks designed for trainees who need training in a specific procedure listed in the training curriculum. Training Centers can provide observatory training or hands-on training with patients.



This course is useful for trainees who want to learn specific procedure such as tunneled HD catheter insertion, PD catheter insertion or kidney biopsy based on the resources and situation they encountered. However, they can observe or assist cases in the curriculum, which broaden their knowledge and expertise in dialysis access management.

## Level 2 – Advanced Course

The Advanced Course is a training of up to 3 months designed for trainees who need training in a broad spectrum of procedures listed in training curriculum, especially endovascular procedures. Training Centers should provide hands-on training with patients.

This course is useful for trainees who want advanced-level training such as broad endovascular procedures. The trainees will be able to start interventional nephrology program immediately after return if facility and equipment for the procedures are ready.

Level 2 course mandates minimum number of procedures in 3 months as follows:

|                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CVC (tunneled and non-tunneled)</b>                    | 10 procedures and 50% performed independently                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Tunneled PD catheter</b>                               | 10 procedures and 50% performed independently                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Acute PD catheter</b>                                  | 10 procedures and 50% performed independently                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Diagnostic angiography and Endovascular procedures</b> | 20 procedures and 50% performed independently                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Kidney biopsy</b>                                      | 5 native and 5 transplant biopsies performed independently using USG. Simultaneous understanding of the tissue processing needs for histopathology reading.                                                                                                                                                                                                                                                                           |
| <b>Nephro-POCUS (total/independent)</b>                   | <ul style="list-style-type: none"> <li>• Kidney-Doppler ultrasonography: 30/10</li> <li>• Urinary bladder ultrasonography: 15/5</li> <li>• Inferior v. cava (15/5)</li> <li>• Lung ultrasonography (15/5)</li> <li>• Basic echocardiography (15/5)</li> <li>• Preoperative mapping for arteriovenous fistula (15/5)</li> <li>• Arteriovenous fistula with clinical problem (15/5)</li> <li>• PD catheter evaluation (15/5)</li> </ul> |

## Certificate:

Trainees will receive a certificate 'Completion of Interventional Nephrology (Foundation or Advanced) Training Course' from ISN at the end of training period based on the type of trained procedures, number of performed procedures, and a short report about trainee's performance from host mentor (e.g. certificate of endovascular procedures, certificate of tunneled HD catheter insertion, etc).



## 6. RENEWAL PROCESS FOR ISN INTERVENTIONAL NEPHROLOGY TRAINING CENTERS

ISN Interventional Nephrology Training Centers will need to re-apply to keep their status every five years.

The ISN Interventional Nephrology Working Group reviews quality assurance data (number of trainees, number of procedures, individual trainee log of procedures, etc) and feedback from trainees.

The ISN Interventional Nephrology Working Group will review applications and forward its recommendations to the ISN Programs Chair for approval. The names of centers selected will be submitted to the ISN Executive Committee for final approval.

*For any further questions or assistance with your application, please don't hesitate to get in touch at [isnprograms@theisn.org](mailto:isnprograms@theisn.org).*

