

**ANNUAL  
CLINICAL  
REPORT** 16

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RENAL MEDICINE

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# MESSAGE



CGH Renal Medicine has come a long way since its inception. Renal Medicine started off as a service for inpatients in Changi General Hospital (CGH), under the Department of General Medicine. It has since expanded into a full-fledged department to better address the needs of the eastern population.

In 2016, CGH raised Renal Medicine's status to a full clinical department. This is an affirmation of the team's effort, but it also highlights the rising rates of kidney failure, a trend that has persisted for more than a decade.

Chronic Kidney Disease is a protracted condition with major impact in the quality of life of our patients. In addition to providing affordable and quality renal care, our team recognises the importance of ensuring continuity of care for our patients. We do so by regularly reviewing and improving existing resources and policies on patient allocation. For example, patients in an outpatient setting follow the same nephrologist through all stages of disease, from early to end-stage disease. We believe that this patient-centred approach helps us achieve excellence in clinical care.

CGH Renal Medicine is a young and growing department. We will continue to develop our capabilities to provide affordable, sustainable and quality-assured care to meet the current and future needs of the population in the east.

*Thank you.*

**Adj Associate Prof Chionh Chang Yin**  
Chief, CGH Renal Medicine

# SPECIALISTS



**Adj Associate Professor  
Chionh Chang Yin**

**Chief & Senior Consultant**

*Specialty*  
Renal Medicine

*Sub-Specialty*

- Acute Kidney Injury
- Critical Care Nephrology

**Dr Roy Debajyoti Malakar**

**Senior Consultant**

*Specialty*  
Renal Medicine

*Sub-Specialties*

- Haemodialysis
- Glomerulonephritis



**Adj Associate Professor  
Wong Chiu Kit, Edmund**

**Consultant**

*Specialty*  
Renal Medicine

*Sub-Specialty*  
Chronic Kidney Disease



# MEET THE TEAM

**Dr Koduri Sreekanth**

**Consultant**

*Specialty*

- Renal Medicine
- Internal Medicine

*Sub-Specialties*

- Glomerulonephritis
- Interventional Nephrology



**Dr Ng Kok Heong**

**Consultant**

*Specialty*  
Renal Medicine

*Sub-Specialty*

- Chronic Kidney Disease
- Peritoneal Dialysis



**Dr Ng Chee Yong**

**Senior Associate Consultant**

**Dr Ng Lay Choo**

**Associate Consultant**

**Dr Poh Cheng Boon**

**Associate Consultant**

# RENAL MEDICINE DEPARTMENT



## SERVICES

### Early Chronic Kidney Disease

- Health Management Unit Community Programmes

### Advanced Kidney Disease Care

- Inpatient & Outpatient Care
- Subspecialty clinics in Glomerulonephritis, Haemodialysis and Peritoneal Dialysis
- Interventional Nephrology services for diagnostic kidney biopsy and dialysis access

### Haemodialysis & Peritoneal Dialysis

- Inpatient Haemodialysis Unit
- Peritoneal Dialysis Unit
- High Acuity Haemodialysis Service
- Continuous Renal Replacement Therapy (CRRT)

### Collaborative Partnerships

- National Kidney Foundation, Singapore
  - Intervention Radiology
  - Vascular Surgery
  - Intensive Care Units

# MILESTONES

- 2010**
- Renal Medicine starts off as a service provided under the Department of General Medicine.
  - On 9 Feb 2010, CGH's new Renal Dialysis Unit with 5 dialysis stations, opened its doors to patients.
- 2011**
- CGH receives accreditation as an Advanced Speciality Training Centre for Renal Medicine from the Joint Committee of Specialist Training, Ministry of Health, Singapore.
  - In collaboration with Department of Cardiology, CGH starts an Aquadex® Ultrafiltration treatment for management of refractory heart failure.
  - In September 2011, CGH becomes one of the first few hospitals in Singapore to offer a procedure – renal denervation – to patients with poorly controlled high blood pressure.
- 2012**
- The renal medicine service is recognised as a Division of Renal Medicine in the Department of General Medicine, CGH.
  - CGH is the first centre in Singapore to initiate a routine Regional Citrate Coagulation protocol using citrated solutions for Continuous Renal Replacement Therapy.
  - A renal protocol is included in the CGH's Health Management Unit (HMU) programme. The HMU utilises nurse telecare coordinators who help patients manage their medical conditions through tele-monitoring and tele-education, ensuring patients with early Chronic Kidney Disease are monitored in the community.
- 2013**
- An expanded 11-station dialysis facility with more than twice the original patient capacity is inaugurated.
  - CGH Renal Medicine wins the Best Oral Presentation of a scientific research project at the Singapore Society of Nephrology Annual Scientific Meeting.
  - A collaborative Memorandum of Understanding is signed with the National Kidney Foundation, Singapore. The nephrologists in CGH take over chronic dialysis care of CGH patients in the NKF Simei Centre.
  - CGH joins as the main participating site of the SingHealth Residency Programme for Renal Medicine specialist training.

# MILESTONES

- 2014** ●
  - The high dependency dialysis service is initiated in the newly renovated medical high dependency unit which offers Slow Low-Efficiency Dialysis (SLED) therapy for unstable patients.
- 2015** ●
  - CGH initiates the Pharmacist-led Renal Clinic, a new concept in healthcare to better utilise the professional knowledge of pharmacists in optimising drug therapy in renal patients.
  - A prototype medical device developed as a research project with CGH Renal Medicine, in collaboration with the Singapore University of Technology and Design, is patented.
- 2016** ●
  - In May 2016 Renal Medicine implements augmented Inpatient & General Medicine Services.
  - Renal Medicine receives the CGH 'Best Hand Hygiene Practice' Award.
  - In November 2016, the Renal Medicine division is recognized as a Department in CGH.

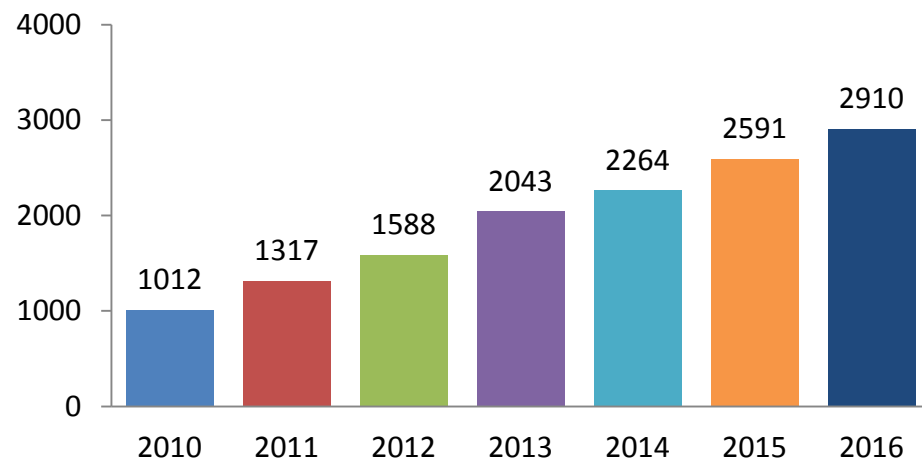


# INPATIENT OVERVIEW

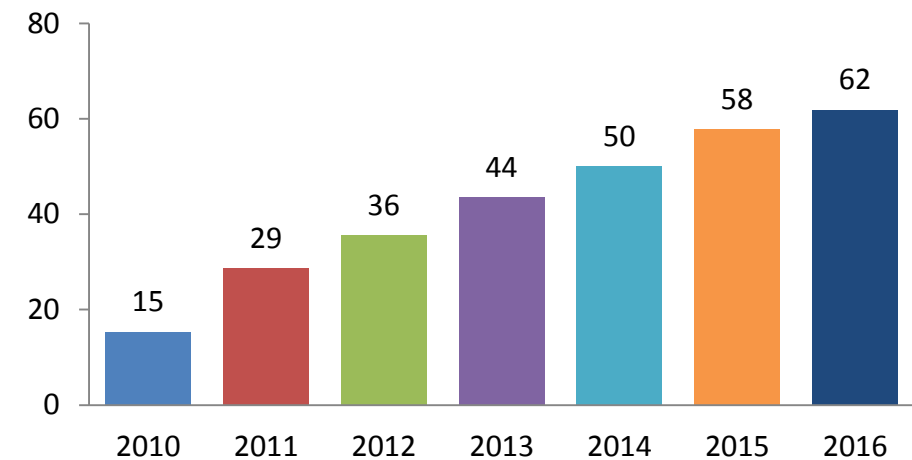
Chronic Kidney Disease is a protracted medical condition. The Renal Medicine team recognises the importance of ensuring patients receive continuity of care.

In the inpatient setting, the patient care is specialist-led and patients are assigned to the same consultant throughout their stay as far as possible. A systematic allocation of patients ensures an even distribution of work load and permits time for each patient to be reviewed thoroughly.

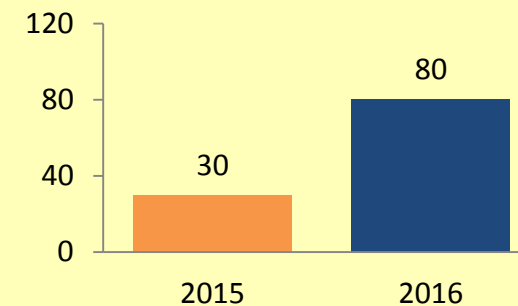
## TOTAL INPATIENT REFERRALS PER YEAR



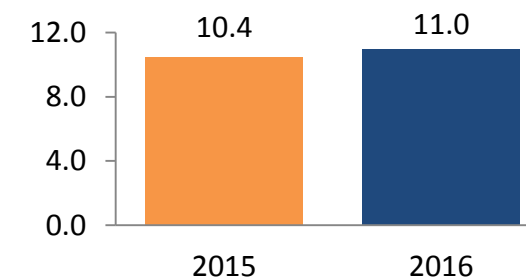
## AVERAGE INPATIENT ATTENDANCE PER DAY (INPATIENTS & REVIEWS)



## AVERAGE NUMBER OF RENAL INPATIENTS PER MONTH



## AVERAGE LENGTH OF STAY (IN DAYS)



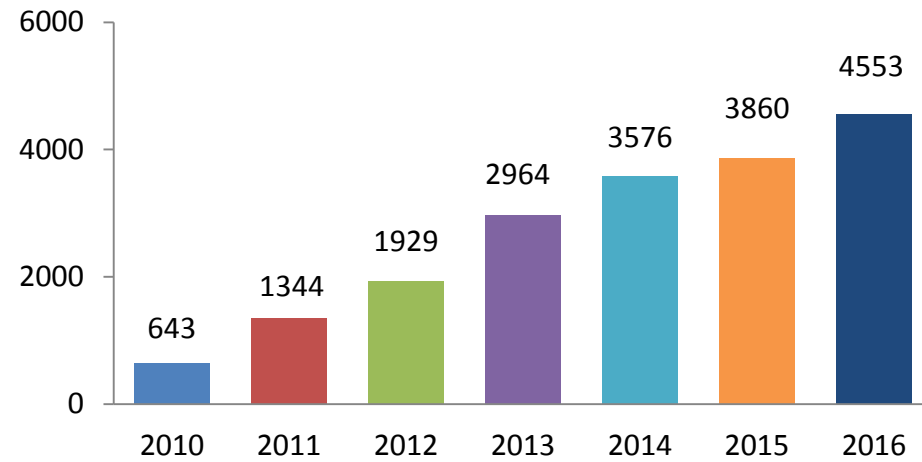


# OUTPATIENT OVERVIEW

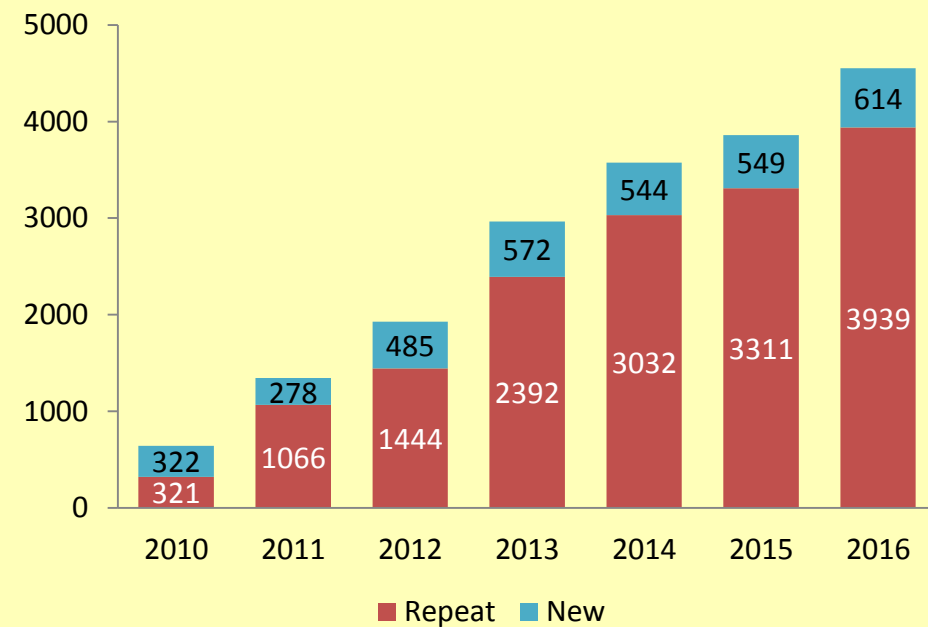
In the outpatient setting, all patients are assigned to a specialist. The patients follow the same nephrologist through all stages of their chronic disease. As part of residency training, patients may be reviewed by senior residents who are closely supervised and all cases are handed back to a specialist by the end of their academic year. This ensures that patients receive quality and continuous care, and trust and rapport with the same physician can be built over the years.



TOTAL OUTPATIENT VISITS PER YEAR



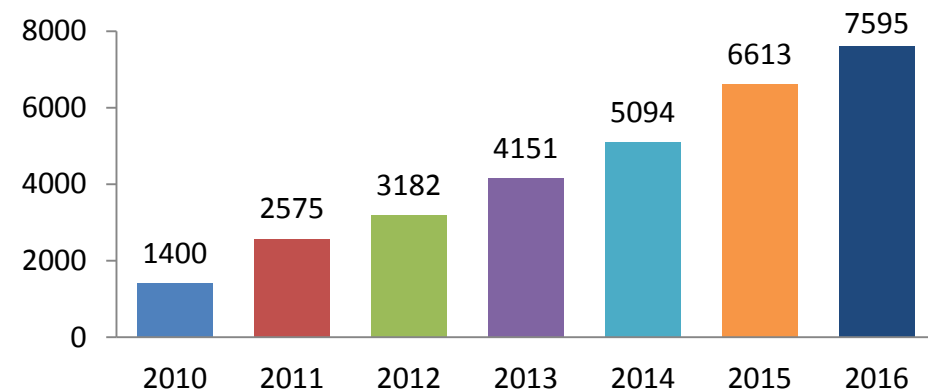
OUTPATIENT VISITS BY CASE TYPE (NEW CASE VS REPEAT CASE)



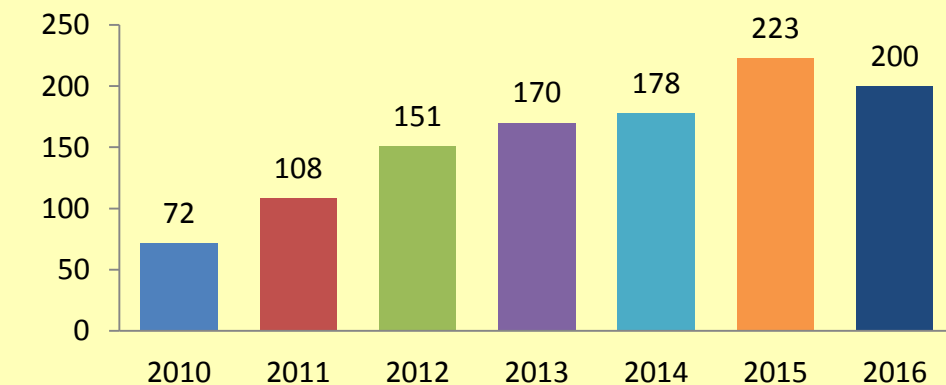
# HAEMODIALYSIS OVERVIEW

Dialysis is an essential life-sustaining therapy for patients with kidney failure. The department provides dialysis services to inpatients admitted to the hospital who require dialysis due to acute kidney injury or as part of long term maintenance therapy for end stage kidney disease. Each individualised dialysis prescription is provided by the renal physicians based on clinical indicators and treatment is carried out by highly trained renal nurses. The department adheres to stringent protocols to ensure high quality dialysis is delivered in a safe environment. Patients who are clinically unstable undergo treatment with close monitoring in a high acuity dialysis setting.

**TOTAL INPATIENT HAEMODIALYSIS PER YEAR**

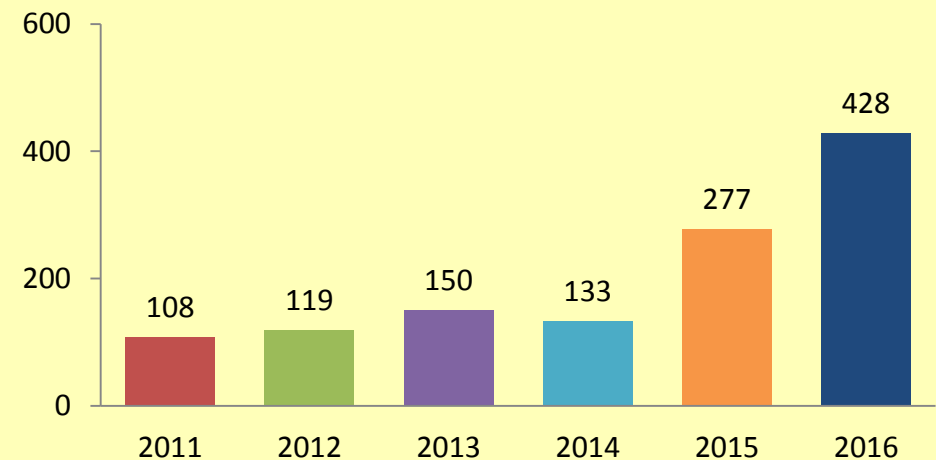


**ACCUMULATED NEW HAEMODIALYSIS PER YEAR**

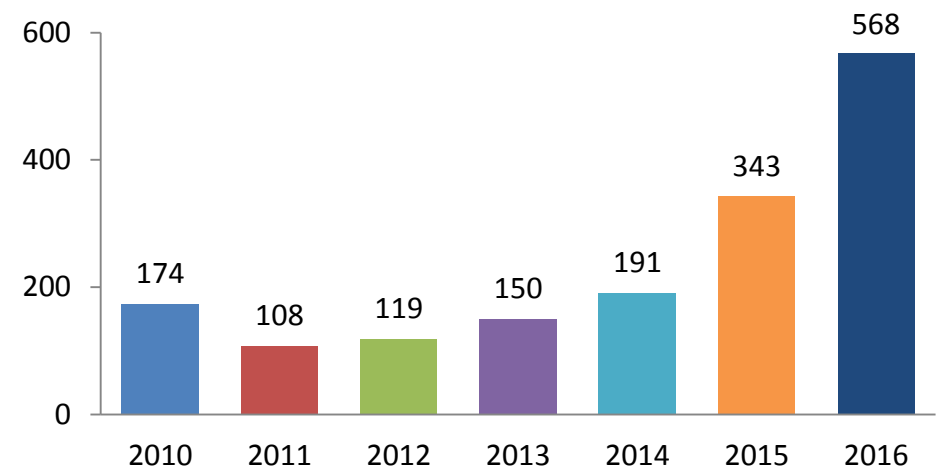


# HIGH ACUITY DIALYSIS

**TOTAL HIGH ACUITY HAEMODIALYSIS PER YEAR**



**TOTAL HAEMODIALYSIS PER YEAR PERFORMED OUTSIDE OF MAIN DIALYSIS CENTRE**

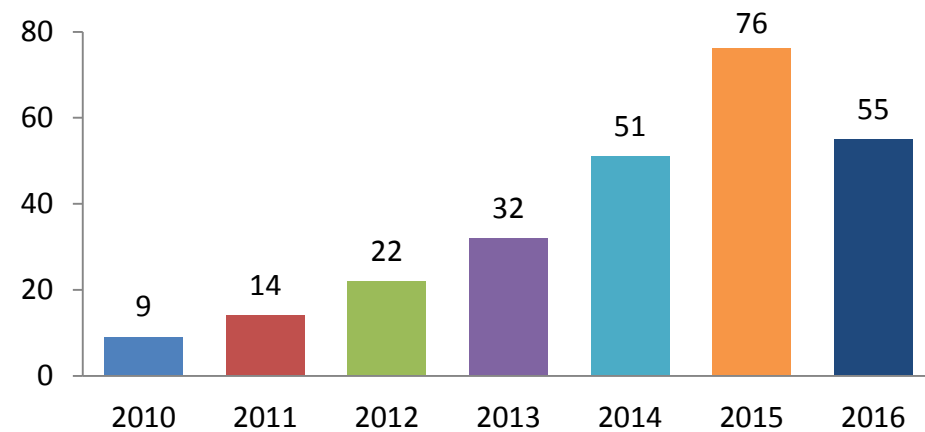


# PERITONEAL DIALYSIS

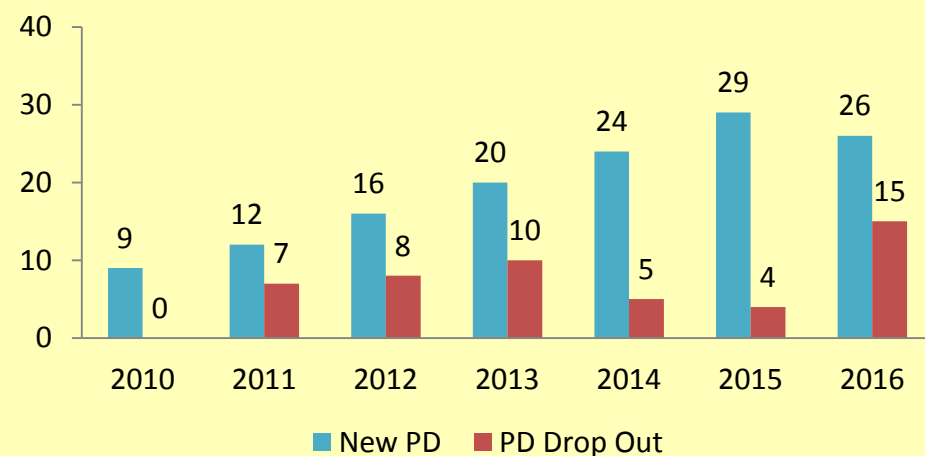
## OVERVIEW

Peritoneal Dialysis is another way to provide life-sustaining treatment for patients with kidney failure. These patients perform dialysis at home with regular monitoring by the renal physicians and peritoneal dialysis nurses. When these patients are admitted, the team of physician and nurses provide peritoneal dialysis treatment and ensure the clinical needs are met. The CGH Peritoneal Dialysis is performing well, exceeding international quality standards.

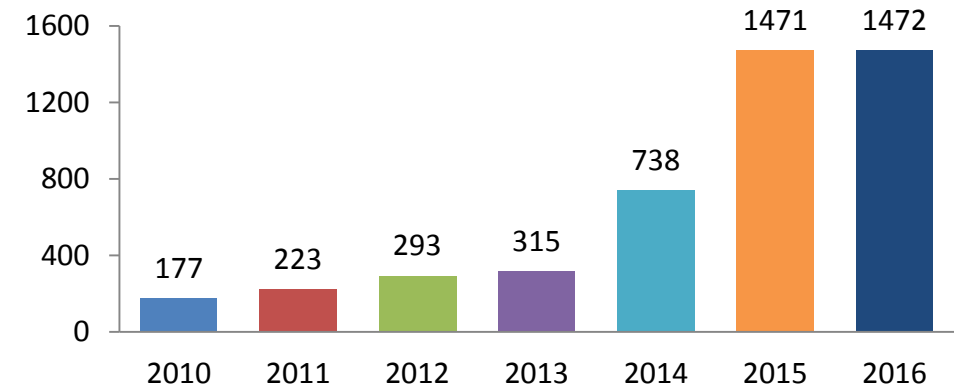
### PREVALENT PERITONEAL DIALYSIS PATIENTS



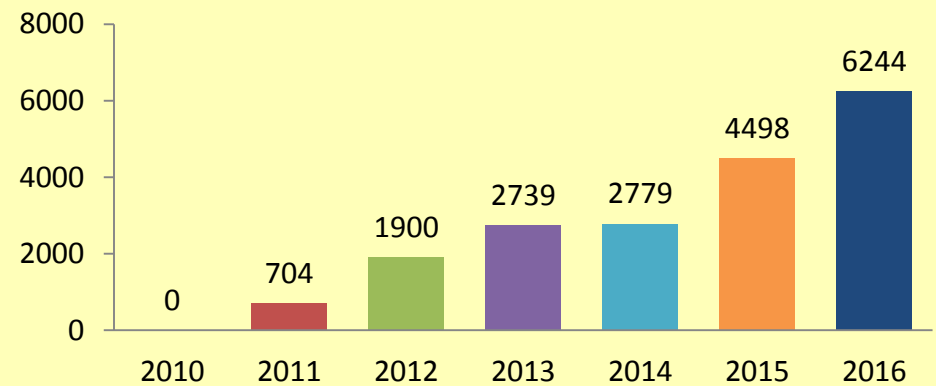
### PERITONEAL DIALYSIS – NEW CASE VS DROP OUT



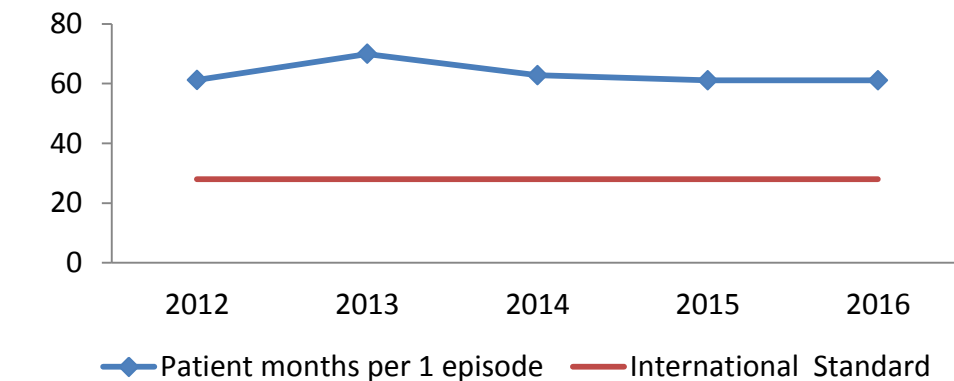
### TOTAL PERITONEAL DIALYSIS EXCHANGES PER YEAR



### TOTAL PERITONEAL DIALYSIS PROCEDURES



### PERITONITIS RATE



The peritonitis rate is expressed and the average number of patient months on peritoneal dialysis before 1 episode occurs. This is the main quality indicator proposed by the International Society of Peritoneal Dialysis and the target standard is 1 episode in 28 patient months.

# INTERVENTIONAL NEPHROLOGY

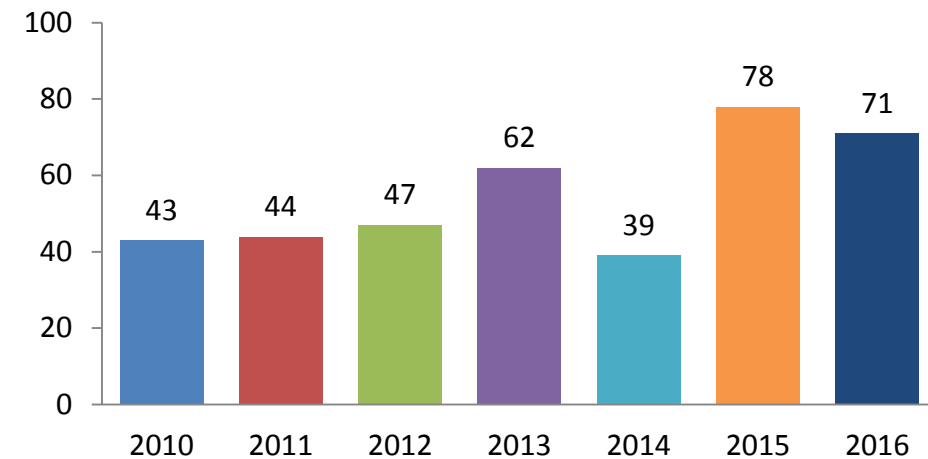
## PROCEDURES OVERVIEW

Nephrological procedures are essential services provided by the department. The renal physicians perform percutaneous kidney biopsies with real-time ultrasound guidance. The samples obtained are evaluated by a renal pathologist under a light microscope with specialised stains and immune-specific markers, and also with high magnification under electron microscopy. The biopsy procedure and subsequent microscopic evaluation is essential for the diagnosis of primary renal conditions and helps renal physicians in selecting the most appropriate treatment for the patient.

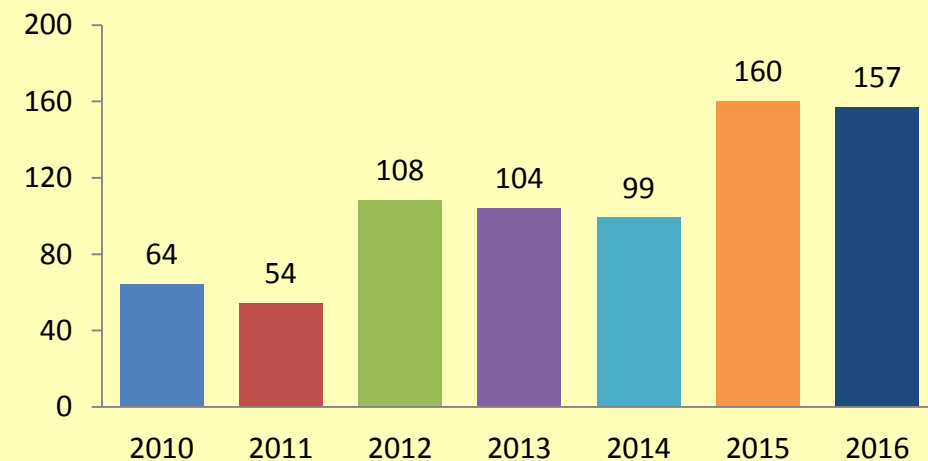
Another common procedure undertaken by the department is the insertion of dialysis catheters. These catheters are inserted into major central blood vessels to allow circulation and purification of blood through a haemodialysis machine.

All procedures are undertaken by trained physicians adhering to international recommendations and guidelines, such as the use of real-time ultrasound guidance for accuracy. Safety to the patient is always the primary consideration in all procedures.

**TOTAL BIOPSIES PER YEAR**



**TOTAL CATHETER INSERTIONS PER YEAR**





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