RENAL
REPLACEMENT THERAPY

UNDER THE NATIONAL HEALTH SECURITY SYSTEM

NHSO
National Health Security Office

SITUATION OF KIDNEY DISEASE AND TREATMENT OF END-STAGE RENAL DISEASE (ESRD) IN THAILAND

Chronic renal disease is a public health problem in Thailand that adversely affects the life of the sufferer. Kidney disease also comes with a high cost of treatment. In 2017, it was estimated that 11.6 million people (17.5% of the total population) in Thailand had chronic renal disease. Of these, over half (5.7 million) had moderately to severely impaired kidney function. In 2017, fully 100,000 patients required hemodialysis (HD), and an estimated 20,000 were ESRD patients who needed HD or peritoneal dialysis (PD).

Initially, only the Civil Servants Medical Benefits Scheme (CSMBS) and the Social Security System (SSS) have included renal replacement therapy (RRT) in the benefits package but not the Universal Coverage Scheme (UCS). On December 28, 2007, the National Health Security (NHSO) Board decided to include RRT in the benefits package for UCS members as part of the 'PD First' policy, which gave priority to peritoneal dialysis for patients with ESRD.

INCLUSION OF RRT
BASED ON ETHICS AND FAIRNESS

A 2005study of the International Health Policy Program (IHPP) and the Nephrology Society of Thailand found that the government would have to spend more than 5 billion baht in the first year after adding RRT to the UCS benefits package. The cost could even rise to tens of billions of baht per year in cumulative costs, or about one-third of the entire budget for UCS in a 15-year period (Table 1).

Table 1: Estimates of the Cost of RRT under the UCS System in Years 1, 4, and 16*

Cost Scenario	Cost (baht) per patient per year**	Cost of the program in Year 1 (million baht)	Cost of the program in Year 4 (million baht)	Cost of the program in Year 16 (million baht)
Low	250,000	3,994	14,358	55,776
Medium	350,000	5,400	19,881	74,355
High	425,000	6,455	24,024	90,100

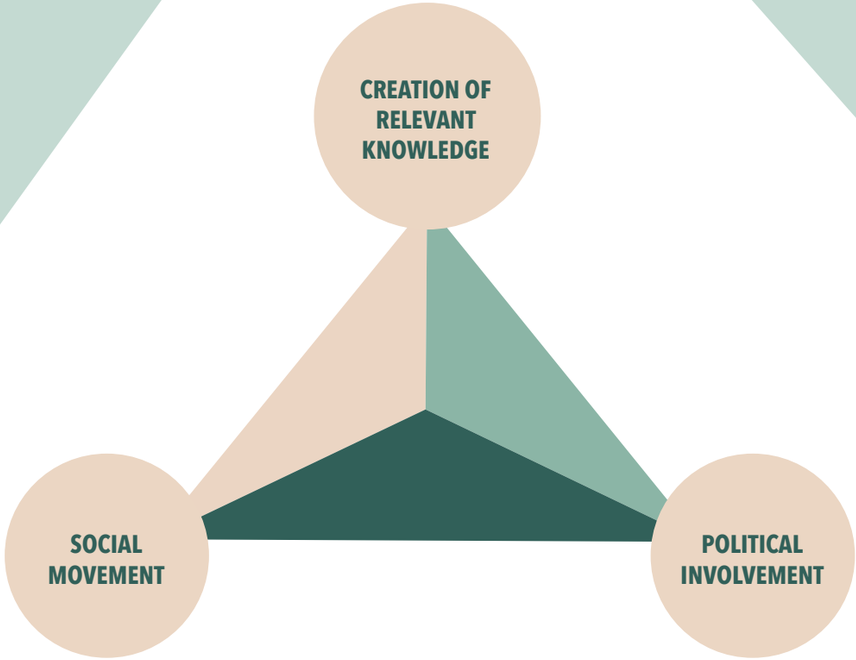
Remarks:
* Annual incidence of disease: 300 per million population, increasing 2% per year
**Used as the basis for an estimate of the cost for both HD and CAPD patients with the "low cost" scenario

If using cost-effectiveness as the criterion of inclusion of services in the benefits package, adding RRT would not meet the criterion. However, the decision on inclusion of services also rests on the consideration of ethics and fairness. In addition, the cost of treatment creates a financial burden for both patients and their families, which also puts a burden on the wider community. Thus, policymakers weighed a variety of factors in making the decision on the UCS benefits package.

TRIANGLE THAT MOVES A MOUNTAIN

STRATEGY FOR THE INCLUSION OF RRT IN THE BENEFITS PACKAGE

The success of the push to include RRT in the UCS benefits package can be attributed to the application of the "Triangle That Moves a Mountain" strategy with its three main components: Creating relevant knowledge; Propelling a social movement, and Encouraging political involvement. The work of the academic sector combined with the efforts of the political parties, government civil servants, professional personnel, and Civil Society organizations (CSO) enabled advocates to take advantage of the favorable political environment to push through approval of the expansion of the UCS benefits package to include RRT.



GOALS AND OBJECTIVES OF THE RRT POLICY

Policy objectives of the expanded benefits package are as follows:

01 To create equitable access by providing PD

02 To prevent households from going bankrupt

03 To invest in cost-effective interventions

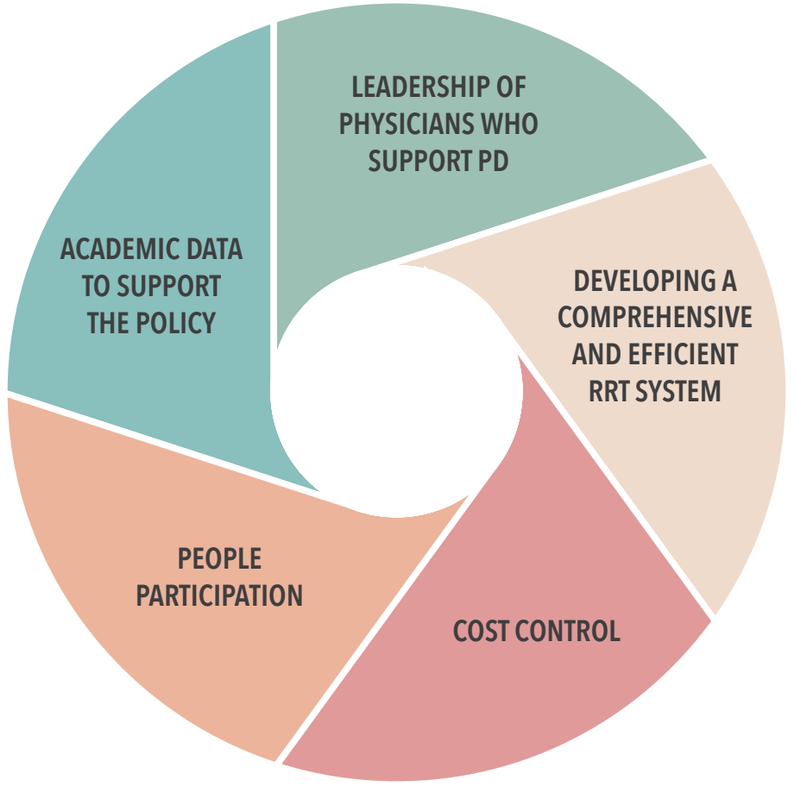
04 To invest in a technically-efficient alternative

05 To minimize the impact on the health services system and minimize burn-out and/or resignation of nurses and doctors who provide critical services to patients

06 To promote efficient allocation of resources by investing in more cost-effective services

07 To increase the cost-effectiveness ratio by reducing the cost of producing PD solutions and related drugs domestically instead of relying on imports and generic drugs

KEY STRATEGIES
IN IMPLEMENTING THE
"PD FIRST" POLICY



KEY MILESTONES
IN THE EVOLUTION OF RRT UNDER THE UCS

OCTOBER 1, 2010

Beneficiaries are granted the right to receive Erythropoietin if they are a new HD patient using an HD machine and who do not wish to receive PD in accordance with NHSO guidelines.

OCTOBER 1, 2012

NHSO cancels co-payments for RRT cases using HD machines for continuing ESRD patients who do not wish to shift to PD.

AUGUST 7, 2017

The NHSO Board reviews implementation over the past ten years to identify successful components and obstacles that remain and to review the process of adjusting conditions (shift mode) in PD and HD, while anticipating new technologies, such as Automated Peritoneal Dialysis (APD).

JUNE 22, 2018

A technical conference is convened on quality development of PD ("Ten Years of Thailand's 'PD First' Policy: Dialysis for All, No One Left Behind").

AUGUST 7, 2020

NHSO launches the APD service

JANUARY 1, 2008

This date marks the first time that the NHSO provided the following:

1. Government subsidizes the cost of CAPD for both new and continuing ESRD patients under the UCS system without co-pay requirement, and launches this service simultaneously in all provinces nationwide.
2. For the continuing UCS patients on HD but who declined CAPD, the government provides subsidies whereby the patient pays one-third of the cost of HD.
3. Intensified cooperation between the relevant agencies to control and prevent diseases that cause chronic renal failure, especially hypertension and diabetes.

DECEMBER 28, 2007

The NHSO Board approves the criteria and conditions for RRT in accordance with the Cabinet resolution.

OCTOBER 30, 2007

The Cabinet passes a resolution to approve the extension of the benefits package for ESRD patients in the National Health Security System to cover RRT, except for those with contraindications. This was a manifestation of the PD First policy.

SEPTEMBER 26, 2007

The NHSO Board passes a resolution to expand the benefits package for ESRD beneficiaries in the National Health Security System.

MANAGEMENT OF RRT SERVICES

PERITONEAL DIALYSIS [PD]

- RRT is to be administered to all patients by initiating the CAPD method in patients without contraindications; no co-pay is required
- The cost of CAPD includes the cost of abdominal surgery to insert a catheter, ongoing check-ups, peritoneal dialysis, basic dosing devices, Erythropoietin, other necessary drugs, and treatment of complications arising from the use of CAPD services

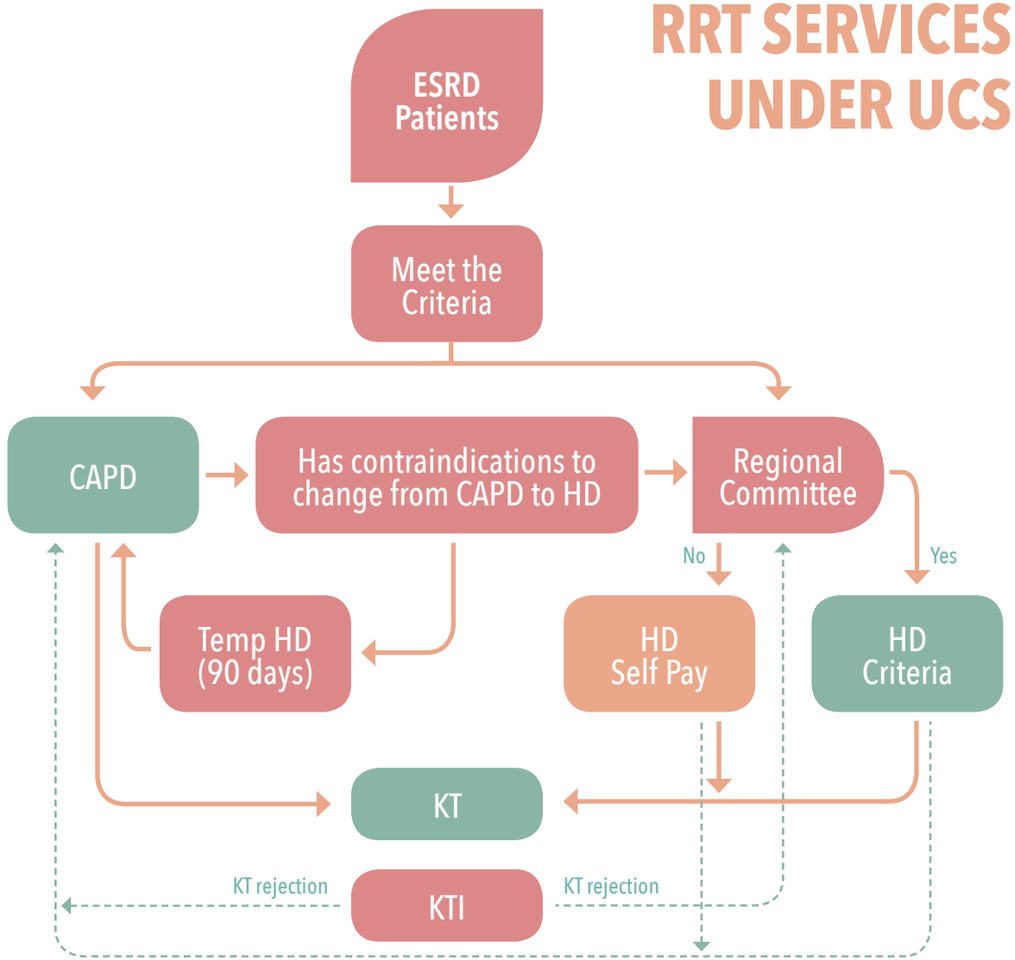
HEMODIALYSIS [HD]

- HD in continuing patients prior to October 1, 2008 was co-paid at a flat rate; co-payment was cancelled after October 1, 2012
- After October 1, 2008, new patients who were unable to use PD services and received the Committee's approval for HD, receive free services; patients who did not wish to shift to PD services and did not receive the Committee's approval to use the HD method, had to pay out-of-pocket; the cost of Erythropoietin is covered.

KIDNEY TRANSPLANT [KT]

- For KT, the program covers the costs of services for kidney donor and donor recipient, including preparation for the donor recipient, surgery of the recipient, preparation of the donor, surgery of the donor, treatment of complications such as graft rejection, postoperative immune-suppressants (KTI), and follow-up after kidney transplantation

RRT SERVICES UNDER UCS



RRT BUDGET

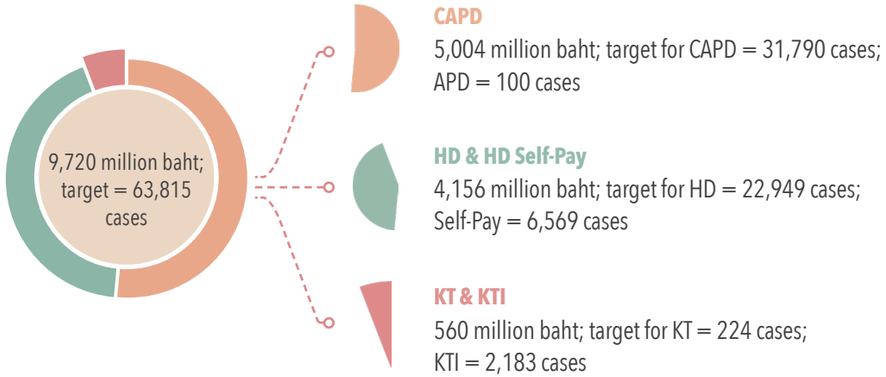
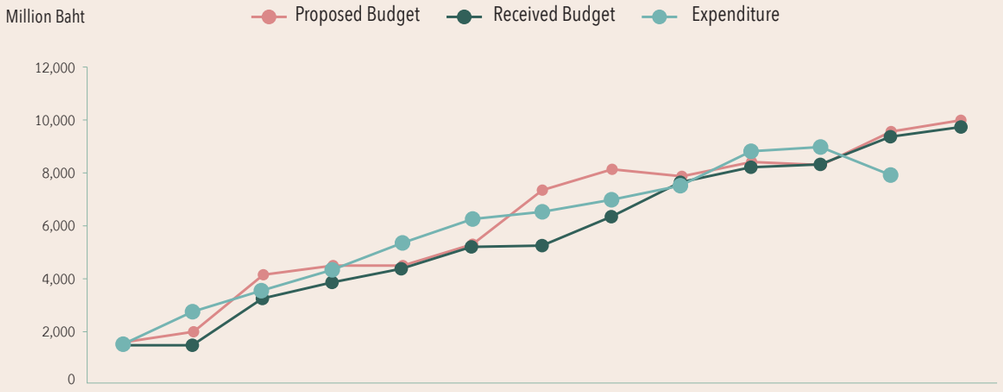


Figure 1: RRT Budget 2021

The budget for RRT has been increasing every year since 2009 (Figure 2), as NHSO has been changing and adding services continuously to improve the service and the number of patients receiving RRT in the UCS has increased. The NHSO has tried to control costs based on the strategies discussed above to ensure that the RRT budget for ESRD patients is sustainable.

The budget for RRT as a percent of the total budget of the UCS remained at 5% in 2021.

TRENDS IN BUDGET FOR ESRD CASE MANAGEMENT: FY 2009-21



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Proposed Budget	1,530	1,928	4,098	4,437	4,417	5,234	7,315	8,098	7,842	8,332	8,281	9,532	9,978
Received Budget	1,530	1,455	3,227	3,858	4,358	5,179	5,247	6,318	7,592	8,165	8,281	9,375	9,720
Expenditure	1,488	2,704	3,512	4,316	5,306	6,233	6,470	6,991	7,462	8,830	8,962	7,879	

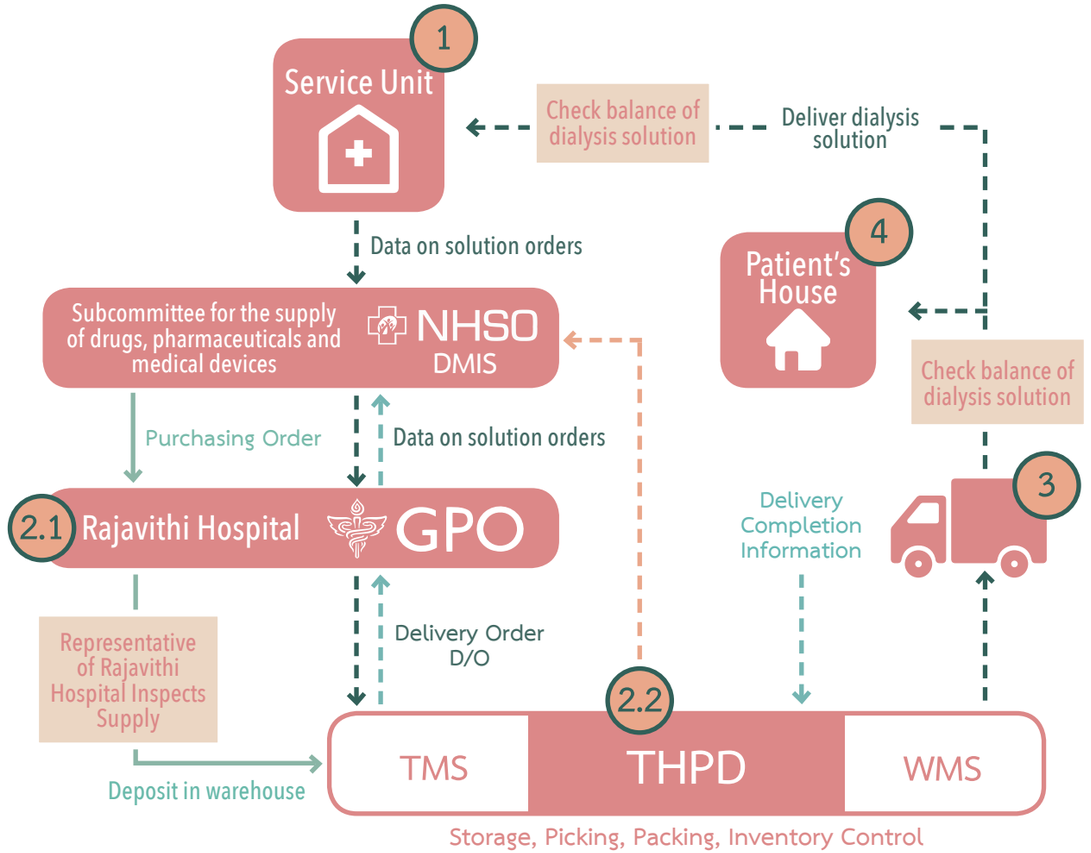
Figure 2: Trends in Budget for ESRD Case Management: FY 2009-21

MANAGEMENT OF DIALYSIS SOLUTION

The NHSO provides services to deliver dialysis solutions to patients' homes. This is a time-saving and cost-saving strategy for patients because they do not have to travel to the service unit by themselves, with the main objective to improve the quality of life and enable patients to have access to RRT, no matter where they live.

The NHSO has developed an online Disease Management Information System (DMIS) to facilitate ordering and management of dialysate supply by ordering through the Government Pharmaceutical Organization (GPO), and delivery in collaboration with Thailand Post Distribution Company Limited (THPD). This creates a national distribution system for delivering dialysis solutions to patients nationwide. The orders are checked every day through the DMIS to ensure that there is no omission or duplication of distribution of solution, and that each patient receives the appropriate solution in a timely way.

Flow Chart: Management of Dialysis Solution Budget & Delivery

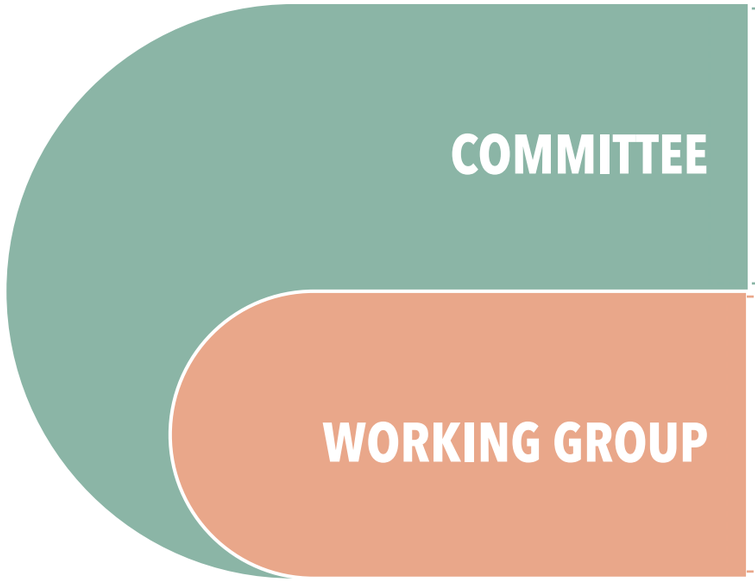


In extreme cases such as a flood disaster, the NHSO will coordinate with the local administrative organizations (LAO), various foundations, or even the Royal Thai Navy to deliver the solution by boat if necessary (see photo).

The COVID-19 pandemic and strong government response to contain spread has affected the delivery of the dialysis solution in some aspects. Similar to the contingency plans for a tropical storm and flooding, the NHSO had to produce a rigorous plan for the storage of dialysis solution for patients in each locality in order to minimize the impact of resupply transportation to the patients. In addition, both patients and THPD delivery staff have to be screened for COVID-19 to reduce risk of infection.

Transporting Dialysis Solution during the Flood Disaster in Yasothorn Province in September 2019

COMMITTEE AND THE WORKING GROUP



- Committee for Overseeing Support for the Improvement of RRT in the National Health Security System
- Committee at the Regional Level to Support ESRD Patients in the National Health Security System to access RRT
- Committee for Considering Cases Unable to Receive CAPD

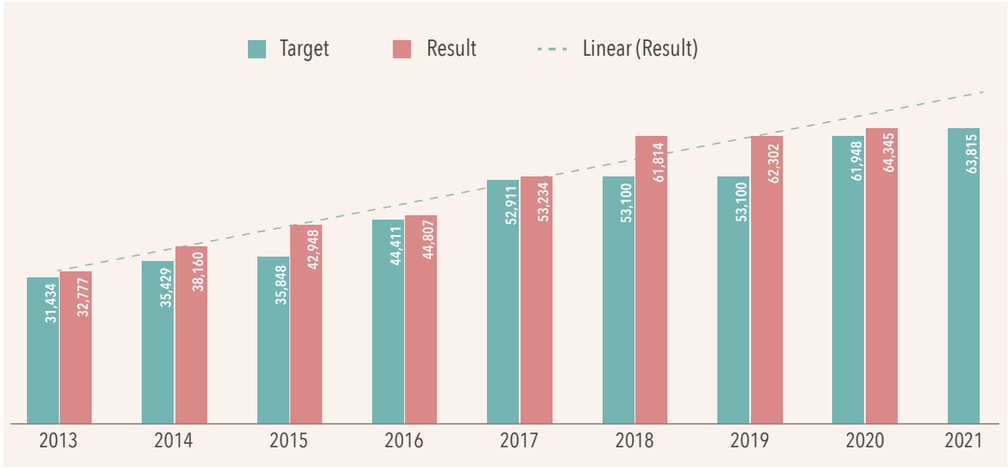
- Working Group for Organ Donation and Kidney Transplantation
- Working Group on the Kidney Disease Information System Development
- Working Group to Develop Services and Quality Standards for HD Using Hemodialysis Machines

ACHIEVEMENTS

NUMBER OF PATIENTS RECEIVING RRT HAVE INCREASED EVERY YEAR

In 2020, there were 64,345 cases receiving RRT under the National Health Security System, which is double the level in 2013 (32,777). Ever since RRT was included in the UCS benefits package in 2008, the number of patients receiving services has increased every year, and it is evident that the NHSO was able to achieve more than the specified target almost every year.

NUMBER OF SERVICE RECIPIENTS: TARGET AND ACHIEVEMENT: FY 2013-21



Unit : Cases
Date as of July 31, 2020

Figure 3: Number of Service Recipients: Target and Achievement: FY 2013-21

NUMBER OF PATIENTS SHIFTING FROM CAPD AND HD SELF-PAY RECEIVING HD BENEFITS

A number of CAPD patients had to switch to HD due to complications or occurrence of abdominal infection. The NHSO has a policy to compensate HD self-pay patients if they were Gold Card holders.

NUMBER OF PATIENTS SHIFTING FROM CAPD AND HD SELF-PAY RECEIVING HD BENEFITS: FY 2015-2019

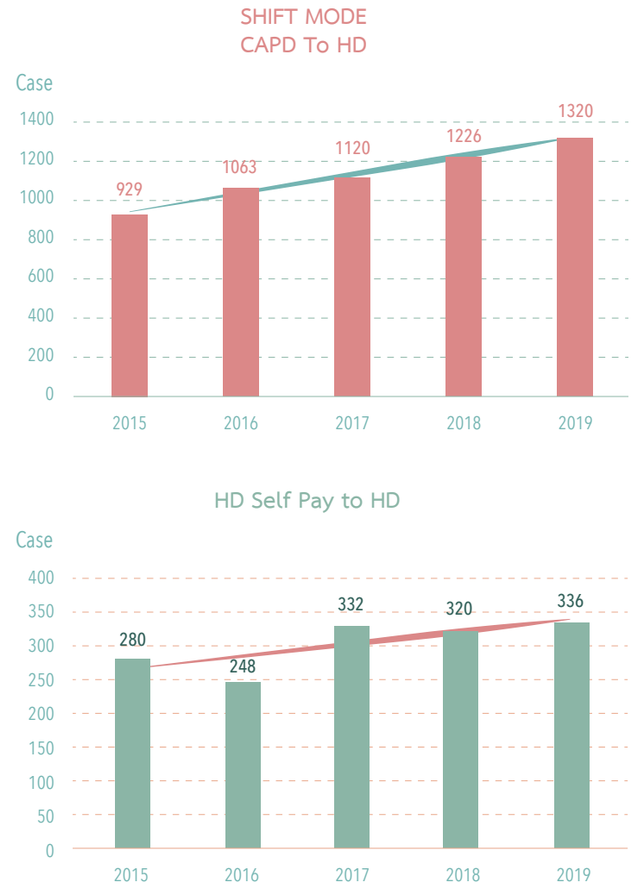


Figure 4: Number of Patients Shifting from CAPD and HD Self-Pay Receiving HD Benefits

CHALLENGES AND THE WAY FORWARD

A major challenge with RRT is the annual increase in the number of patients and the impact on the NHSO budget. Thailand is rapidly transitioning into an "aged society," and that means that there will almost certainly be an increase in prevalence and absolute number of people with NCD. This will translate into an increased caseload of ESRD patients who need RRT.

The following are some ways the NHSO is working to address these challenges.

SUPPORTING THE WORK OF CHRONIC KIDNEY DISEASE CLINIC (CKD CLINIC)

As the number of kidney disease patients entering the National Health Security System is increasing every year, measures must be taken now to slow the progression of kidney disease to ESRD. One way to approach this is to support the establishment of a CKD Clinic to stall the progression of renal disease. The NHSO has a major role in providing technical assistance, public relations, and overall support for the implementation process of these clinics.

CAMPAIGN TO ENCOURAGE PEOPLE TO DONATE ORGANS AND RECEIVE ORGAN TRANSPLANTATION

Although PD and HD can help alleviate the burden of kidney disease, the ESRD treatment that has the greatest effect on the quality of life of patients is, at present, a kidney transplant (KT). Thailand still has a relatively low number of organ donors, so eligible ESRD patients have to wait a long time to receive KT, if at all. The NHSO is responsible for making a step-by-step plan to facilitate KT services. Accordingly, in the future, one of the strategies for RRT in Thailand is to try to maximize the number of KT procedures.

APPLICATION OF NEW TECHNOLOGY IN RRT, SUCH AS THE USE OF AUTOMATED PERITONEAL DIALYSIS

The NHSO is always looking for new technologies to improve the quality of life of UCS beneficiaries and help reduce long-term costs of managing NCD. In 2020, the NHSO launched a pilot project to provide APD for ESRD patients in areas which have the capacity to deliver the service, while the NHSO covers the cost of PD solution, equipment, and drugs related to APD.

The results from the pilot project showed that the patients had a better quality of life. Cases who had used ordinary PD over a long period of time and used more dialysis solution were able to use the dialysis solution more efficiently with the APD machine since that was automated and calibrated for optimal delivery of dialysate. Moreover, patients using APD experience greater comfort because they do not need to change the dialysate bags frequently, and can perform routine tasks more conveniently than with conventional PD.

SUMMARY

Over the past ten years of supplying subsidized RRT to UCS beneficiaries, the NHSO has faced many challenges. However, with a strong policy foundation, combined with the cooperation of many parties, including policymakers, medical personnel, academia, CSO, and in collaboration with policy development and careful budget planning for ESRD patients, RRT administration has been successful through a systematic process of patient care. The NHSO continues to look for new therapeutic technologies, cost control strategies, service enhancements, quality-of-life development of patients, and support for equal access to services. That said, it is still necessary to study implementation and extract lessons learned (both positive and negative) in order to advance RRT so that it is cost-effective and sustainable.

National Health Security Office