

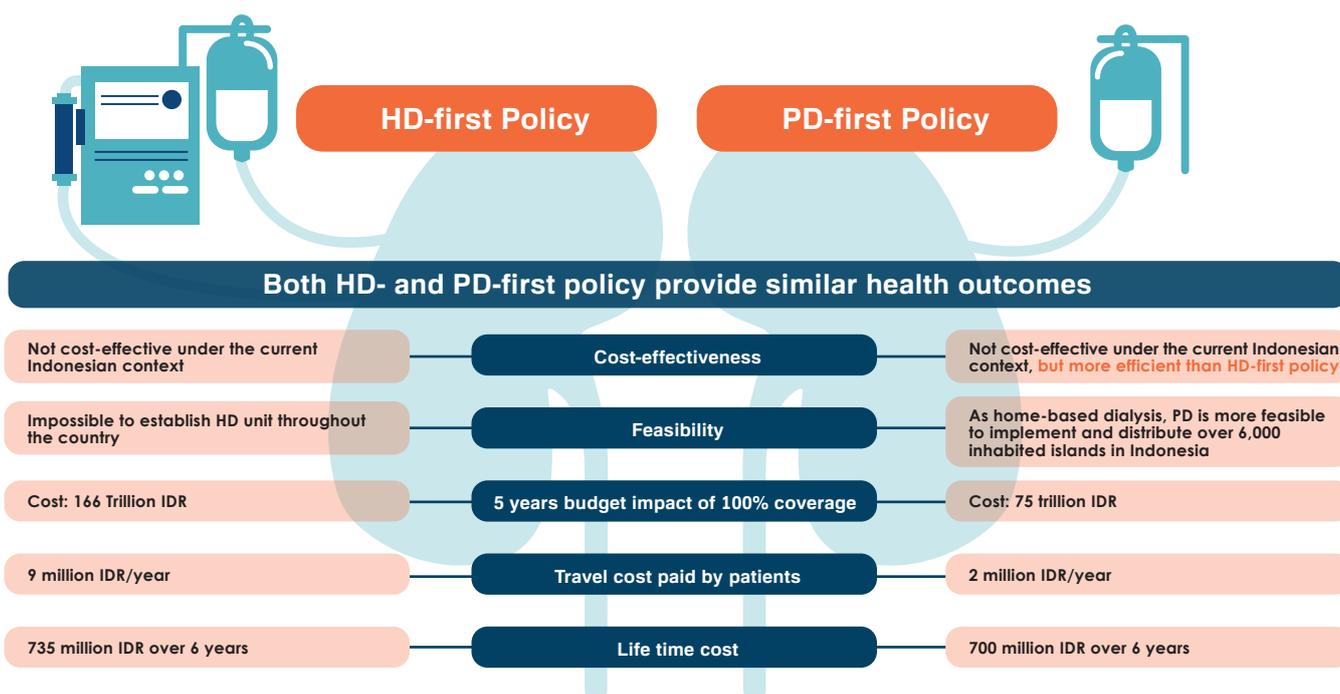
# POLICY BRIEF

## Health Technology Assessment for Renal Dialysis for End-Stage Renal Disease in Indonesia

**D**ue to the increasing burden of non-communicable diseases (NCDs) in aging populations and the prevalence of unhealthy lifestyles, end-stage renal disease (ESRD) that results from NCDs is a growing concern in Indonesia. With the target of achieving Universal Health Coverage (UHC) by 2019, public provision of treatment to address the burden of ESRD will become financially unsustainable due to the high cost of dialysis – unless an appropriate policy is developed. Treatments for ESRD currently included in the benefit package under the National Health Insurance Scheme called the Jaminan Kesehatan Nasional (JKN) are for both hemodialyses (HD) and peritoneal dialysis (PD). Both modalities offer substantial health benefits over supportive care albeit at a very high cost. Despite this, peritoneal dialysis as the first line treatment (PD-first policy) for ESRD patients is recommended to be implemented under the JKN as it is less costly but provides a similar level of health benefit compared to that of hemodialysis.

### Key Points:

1. HD-first policy is equivalent to free choice for dialysis as physicians have incentives to persuade patients to undergo HD. This is currently the case in Indonesia.
2. Although both dialysis modalities are not cost-effective in Indonesia, PD-first policy is more efficient than HD-first policy due to the limited accessibility of other treatment options.
3. It is not possible to establish a HD unit throughout the country given that Indonesia is made up of over 6,000 inhabited islands. On the contrary, it is possible to offer equitable access to home-based PD.



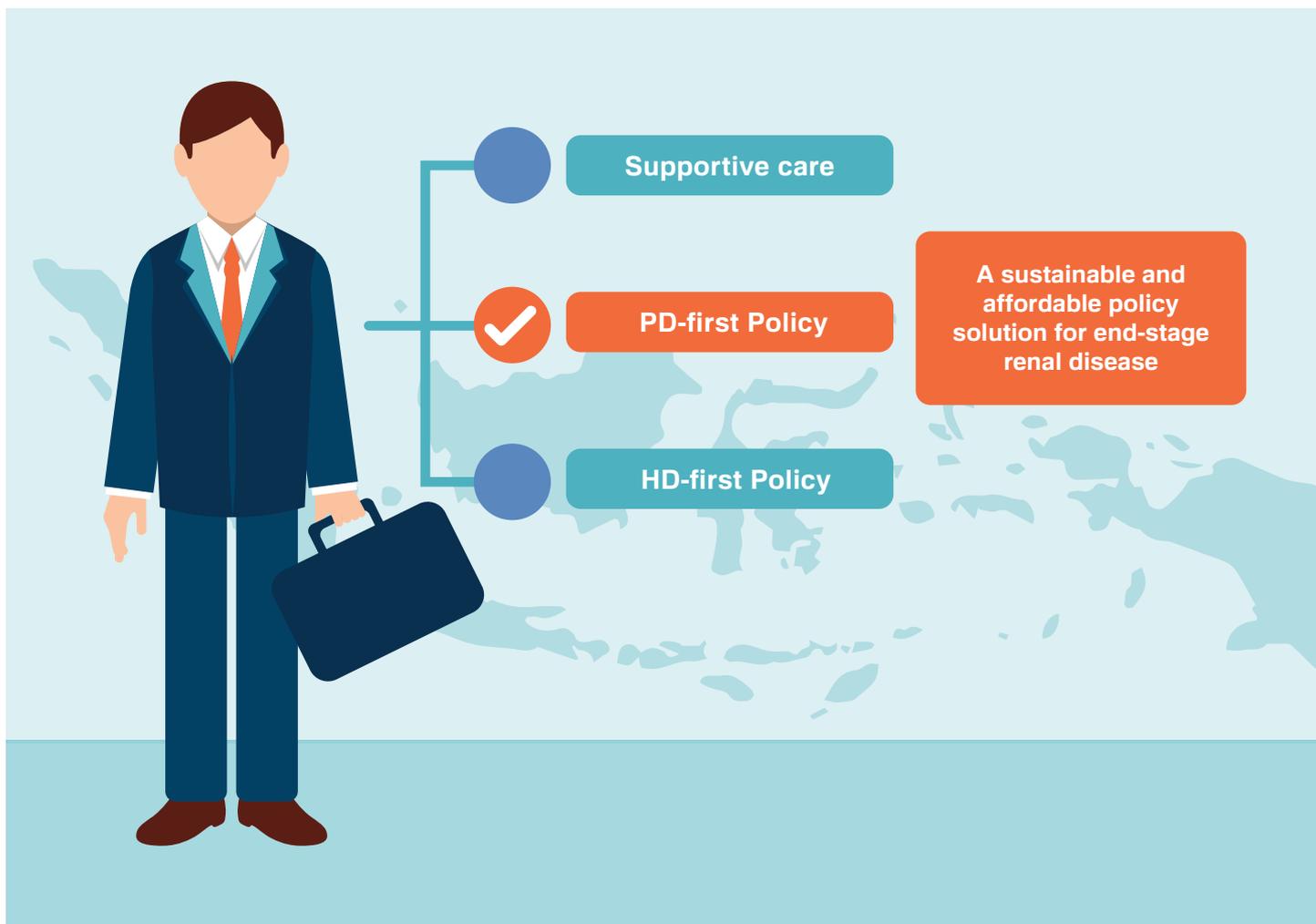
## Disease Burden of End-stage Renal Disease (ESRD)

**E**SRD in Indonesia has an annual incidence of 35,000 patients and prevalence of 120,000 patients. Without renal replacement therapy (RRT), i.e. kidney transplantation or renal dialysis, patient prognosis varies between six months to nearly two years. Given that kidney transplantation is not a viable option for all patients, the Healthcare and Social Security Agency (BPJS Kesehatan) offers reimbursement for both hemodialysis (HD) and peritoneal dialysis (PD). However, it is estimated that only 53% of patients have access to dialysis. Additionally, despite PD being less expensive than HD, it is reported that almost all patients are undertaking HD. As a result, in 2014, 2.48 trillion IDR was spent for ESRD treatment, which is the second largest expense of the BPJS.

## Sustainable Policy for ESRD Treatment

Indonesia has recently commenced the implementation of its national health insurance and is expected to achieve universal health coverage (UHC) by 2019. As such, it is projected that the BPJS would have to increase spending on RRT in order to fully cover all ESRD patients. To support the policy-making process, the Indonesian Health Technology Assessment (HTA) committee commissioned a secretariat team to conduct a model-based economic evaluation and budget impact analysis on the first choice of dialysis modality for ESRD patients. The study conducted a cost-utility and budget impact analysis of:

- 1) PD-first policy, i.e. providing PD as initial treatment followed by HD if necessary;**
- 2) HD-first policy, i.e. providing HD as initial treatment followed by PD if necessary, and;**
- 3) Supportive care, i.e. providing the best supportive treatment without dialysis or renal transplantation.**



## Key Findings: Cost-Effectiveness

Where one Quality Adjusted Life Year (QALY) gain entails a one year gain with the patient in perfect health (no disabilities or other adverse conditions), the study findings indicate a supportive care policy option resulted in **0.076** QALYs. The QALY gained for PD first policy was discovered to be slightly higher at **4.40** compared to HD first policy at **4.34** QALYs due to PD patients experiencing a higher quality of life compared to HD patients.

The study also found that, comparing to a supportive care policy option, the incremental cost of PD first policy was lower than HD first policy, while its incremental QALY gain was slightly higher. The incremental cost-effectiveness ratio (ICER) or the average incremental cost associated with one additional unit of QALY gained was used to measure value for money. The ICER value for providing **PD-first policy is at 193.3 million IDR per QALY gained**. In comparison, the ICER value for providing a **HD-first policy is costlier at 207.4 million IDR per QALY gained**. Using a threshold of one GDP per capita equivalent to IDR 43 million, both policies are considered to be not cost-effective given the extremely high cost compared to the gain in health outcomes.

## Budget Impact

To assess budget impact from the perspective of the health care provider, an estimate of the necessary financial support for each dialysis treatment was calculated for a five-year time period under two scenarios: at 53% coverage and at 100% coverage. A five-year PD first policy at 53% coverage will require approximately IDR 40 trillion while full coverage will require IDR 75 trillion. On the other hand, a five-year HD first policy is relatively more expensive at IDR 88 trillion for 53% coverage and IDR 166 trillion for full coverage.

Treatment options	Health Outcome	Cost effectiveness	Total lifetime costs of patient	Travelling cost (Out of pocket payment)	Budget Impact	
					53% coverage	100% coverage
Supportive care	Patient's life expectancy varies between 6 – 24 months.					
<b>Optimal Policy</b> Peritoneal dialysis as the first line treatment, followed by hemodialysis if needed	Similar level of health benefit.	Not Cost-effective* (193 million IDR per QALY**)	700 million IDR for over 6 years	2 million IDR per year	40 trillion IDR	75 trillion IDR
Hemodialysis as the first line treatment, followed by peritoneal dialysis if needed		Not Cost-effective* (207 million IDR per QALY**)	735 million IDR for over 6 years	9 million IDR per year	88 trillion IDR	166 trillion IDR

\* One GDP per capita was used as the threshold of value for money, equivalent to IDR 43 million, of this study.

\*\* Cost per Quality Adjusted Life Year

## Policy Recommendations

- The PD option should be the first choice for ESRD patients because it is more effective and potentially more cost effective than the HD option. Moreover, the PD option can save household expenditure for traveling and government investment in high-cost dialysis machines. As such, the Ministry of Health needs to build capacity and develop a clear plan for scaling up PD provision in public hospitals throughout the country.
- The Ministry of Health and BPJS Kesehatan should develop a policy that includes incentives to improve access to PD as a first line treatment.
- Given the very high cost of dialysis, preventing ESRD will be essential for ensuring financial sustainability. In order to prevent the future burden of ESRD, population based screening and provision of early treatment for diabetes and hypertension or the Package of Essential Non-communicable disease (PEN) interventions should be strengthened.

### Acknowledgement

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For more information on this study,  
please go to [www.globalhitap.net/projects/idsi-indonesia](http://www.globalhitap.net/projects/idsi-indonesia)



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