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## BACKGROUND

- Dialysis is a primary treatment for end-stage renal disease (ESRD) patients. Patients can choose between haemodialysis (HD) and peritoneal dialysis (PD).
- For elderly ESRD patients ( $\geq 75$ ) with multiple comorbidities, dialysis may not increase survival over Conservative (symptom) Management (CM).
- Most elderly patients in Singapore receive dialysis, and primarily HD.

## OBJECTIVES & HYPOTHESES

### Objective:

- To investigate factors influencing the high uptake of dialysis in Singapore.

### Hypotheses:

- Patients (PTs) and family caregivers (CGs) lack knowledge about CM as a treatment alternative.
- They overestimate the survival benefits from dialysis.
- They succumb to physician recommendation, which is often skewed towards treatment.

## METHODS

- Setting:** Outpatient clinics at the Department of Renal Medicine, Singapore General Hospital.
- Design:** Cross-sectional survey, including a Discrete Choice Experiment (DCE).
- Sample:** 151 elderly pre-dialysis PTs ( $\geq 65$ ) with stage 3B to 5 chronic kidney disease (CKD) and their CGs.
- Respondents answered questions on:
  - Awareness of CM as a treatment option.
  - Knowledge on expected survival under dialysis and CM.
  - Influence of CGs and physicians on treatment decisions.
- In each DCE task, PTs were asked to assume that they have ESRD and choose one of the two treatment alternatives which varied by four attributes (Figure 1).
- CGs were shown the same DCE tasks, and were asked which treatment they will recommend to their PTs.
- Each respondent answered 9 DCE tasks.
- Following the last DCE task, respondents were asked if they would switch their choice if the other choice were recommended by their physician.

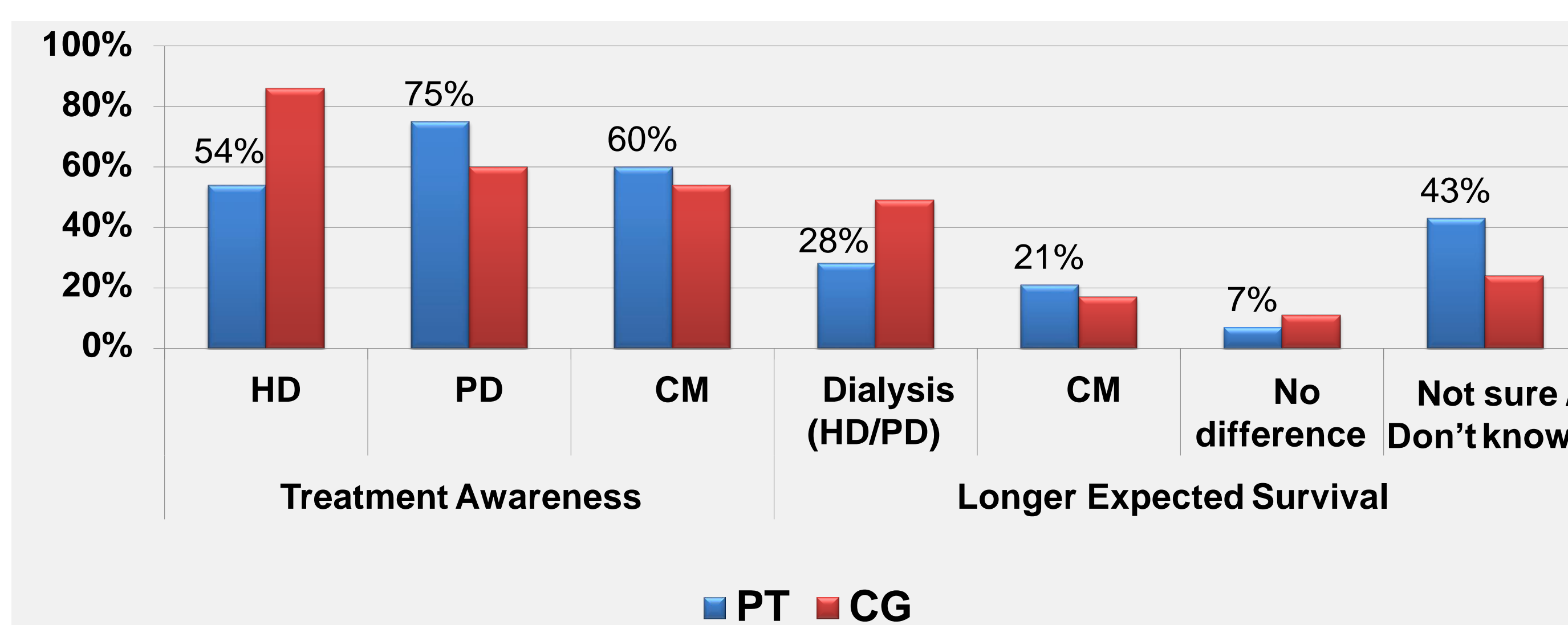
Figure 1. Example DCE Task

If these were the only treatment options, which one would you choose?		
	Option A	Option B
Type of treatment	In-centre blood dialysis (3 times a week)	Conservative management
Expected survival	3 years	1 year
Quality of daily life	Fair	Fair
Expected out-of-pocket cost per month	\$3,000	\$250

## RESULTS

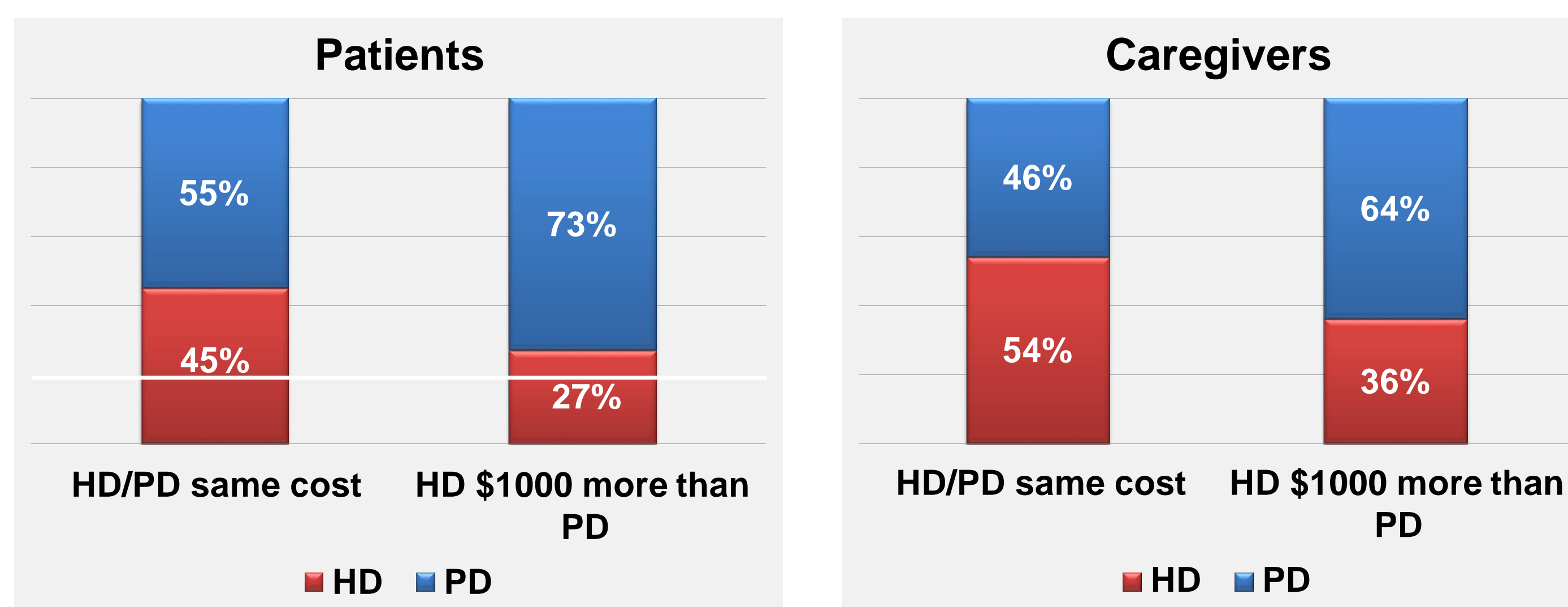
- PTs: Mean (SD) age was 74 (6) years and 44% had  $\geq 2$  comorbidities.
- CGs relationship with the PTs: 40% spouses and 53% children.

Figure 2. Awareness of ESRD Treatments and Survival



- 40% (95% Confidence Interval CI:32-48) PTs and 46% (95% CI:38-46) CGs were not aware of CM as an option.
- 43% (95% CI:35-51) PTs and 24% (95% CI:17-31) CGs were not sure which treatment offered longer expected survival.
- CGs predicted a median survival of 8 (95% CI:6-8) years for dialysis while the local data shows a median survival of 4.8 years for this age group.

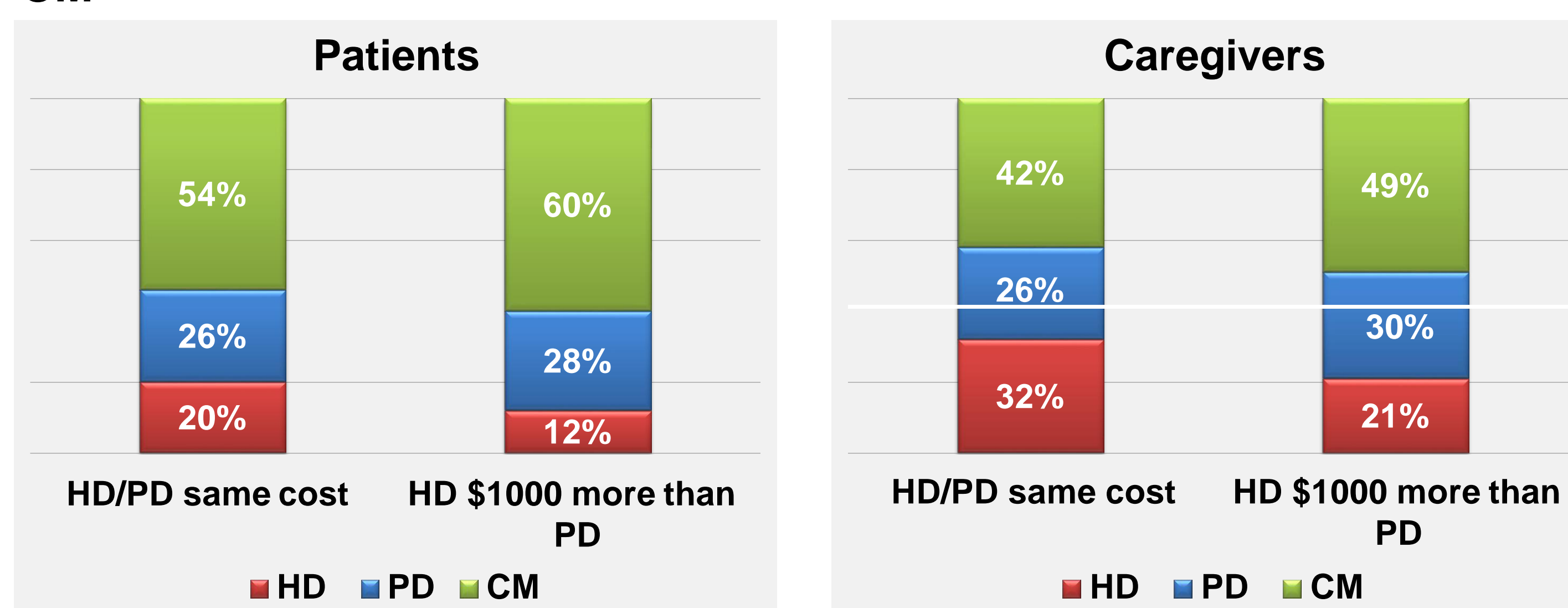
Figure 3. Respondents choosing HD and PD when UNAWARE of CM



Assumes estimated survival under HD and PD=4.8 years [estimated using local registry data], Fair QoDL, Cost of HD and PD a) same; b) \$1,600 pm for HD and \$600pm for PD. Estimates survival under CM=2.3 yrs (Murtagh et al. 2007, Chandna et al. 2010), Fair QoDL and Cost=\$100pm.

- When PTs/CGs were **not aware of CM** and:
  - HD/PD costs are same: 45% (95% CI:35-55) PTs and 54% (95% CI:45-63) CGs chose HD.
  - HD is \$1,000/month costlier than PD: 27% (95% CI:19-35) PTs and 36% (95% CI:28-44) CGs chose HD.

Figure 4. Respondents choosing HD, PD and CM when AWARE of CM



Assumptions are same as in Figure 3.

- When PTs/CGs were **aware of CM** and:
  - HD/PD costs are same: Despite 2.5 year lower expected survival than dialysis, CM was the most popular choice.
  - HD is \$1,000/month costlier than PD: Predicted demand for HD decreases (20% vs 12% for PTs; 32% vs 21% for CGs) and demand for CM increases (54% vs 60% for PTs; 42% vs 49% for CGs).
- Among respondents who initially chose CM, 49% (95% CI:40-58) of PTs and 68% (95% CI:59-77) of CGs would switch to HD if their physician recommends it.

## CONCLUSIONS

- Results revealed that the high dialysis demand is mostly due to lack of awareness about CM as treatment option, and patient and caregiver deference to physician recommendation.
- Efforts should be made to ensure that elderly ESRD patients receive full information about treatment options tailored to this subpopulation before they make treatment decisions.