

Simulating Strategies To Launch a *De Novo* Home Therapies Program:  
A Home-Only Strategy

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BACKGROUND

- Approximately 47% of Medicare-certified dialysis facilities in the United States do not offer home dialysis, and another 8% of facilities are credentialed to offer home dialysis, but have no active patients (2021 USRDS Annual Data Report).
- Furthermore, 37% of aggregation groups (local clusters of commonly owned dialysis facilities) participating in the ESRD Treatment Choices (ETC) payment model do not offer home hemodialysis.
- New facilities focusing only on home dialysis may be an important strategy for increasing home dialysis utilization, as these facilities necessarily position home therapies as the "first" option—just as some countries direct patients to home dialysis unless medically contraindicated.
- Launching a *de novo* home therapies program raises questions about modality mix, device utilization, and financial impact.

METHODS

- We simulated modality mix and total revenue in a new facility starting with 12 home dialysis patients in December 2022 and averaging two new dialysis patients per month during 2023-2027, using Markov chain Monte Carlo simulation with 500 iterations to explore 5-year clinical and economic outcomes.
- We modulated two parameters:
  - Peritoneal dialysis (PD) vs home hemodialysis (HHD) adoption among new patients; and
  - HHD device utilization, using an innovative device lowering the conversion rate from HHD to conventional hemodialysis (CHD) by 40%.
- We presumed that 50% of patients who discontinue PD select HHD, regardless of HHD device, remaining under the facility's care.
- For economic analyses, we set the Medicare Part B rate for hemodialysis at \$257 (2022 rate), and presumed private payer factors of 1.15 (\$295) and 2.20 (\$565) for Medicare Advantage and commercial insurance, respectively.

RESULTS

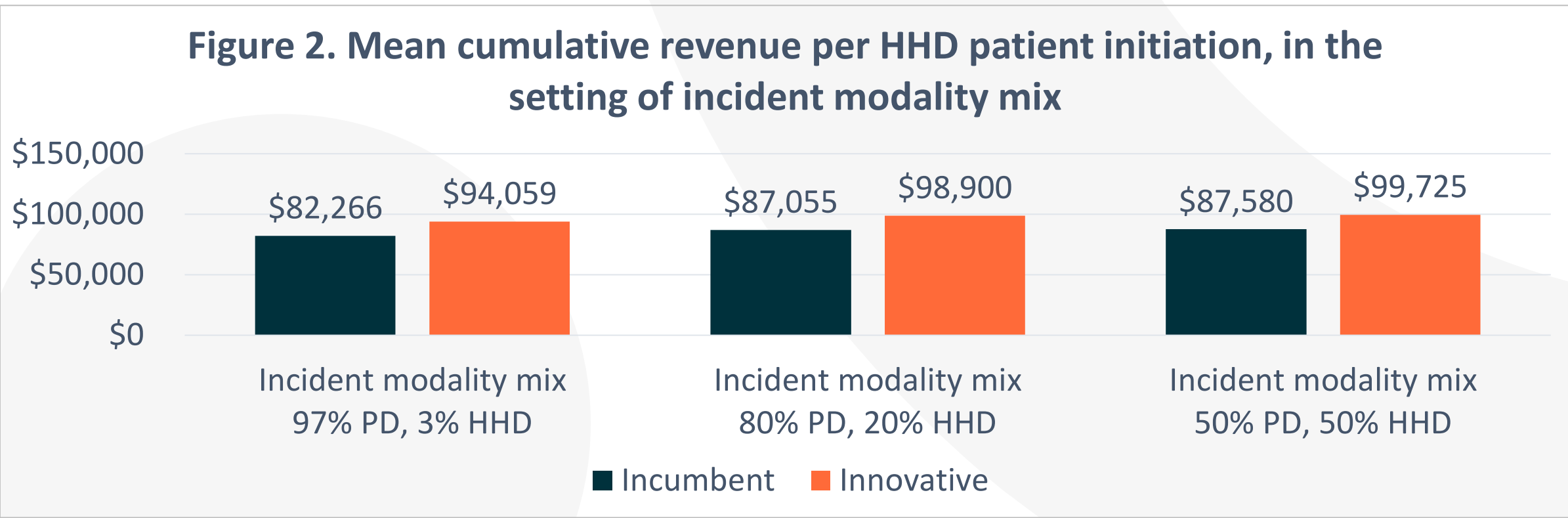
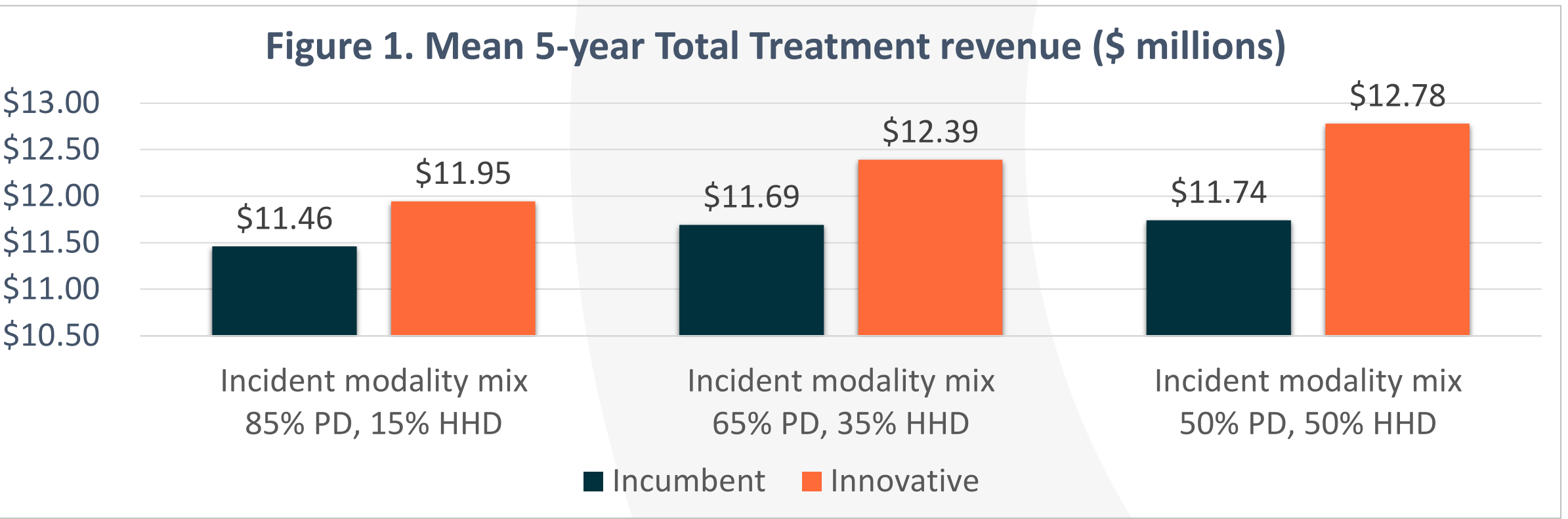
- The relative mixture of PD and HHD among new patients strongly influences the modality mix in the home therapies program in 2027. (Table 1)
- Increasing adoption of HHD among new patients slightly shrinks program census, as those transferring from HHD to CHD exit the home program’s census. (Table 2)
- However, increasing HHD adoption has the opposite effect of increasing mean cumulative 5-year revenue by 4.2% to 8.8%, due to reimbursement for additional hemodialysis sessions. (Figure 1).
- Reducing attrition with an innovative HHD device increases 5-year cumulative revenue per HHD start by 14%. (Figure 2)

Table 1. Monthly probabilities of transitions between modalities/states

Current state	PD	HHD	Death or Transplant
Incident ESKD	85% / 65% / 50%	15% / 35% / 50%	
PD	97.5%		1.5%
HHD (in training)		83.6%	1.4%
HHD (at home)		97.6%	1.4%

Table 2. Home dialysis utilization in 2027, following launch of a *de novo* home therapies program with 12 patients in December 2022 and 2 new home dialysis starts per month

HHD device	Incident modality mix 85% PD, 15% HHD			Incident modality mix 65% PD, 35% HHD			Incident modality mix 50% PD, 50% HHD		
	Pt-Mo	PD	HHD	Pt-Mo	PD	HHD	Pt-Mo	PD	HHD
Incumbent	728	79.7%	20.3%	707	63.7%	36.3%	677	50.9%	49.1%
Innovative	763	77.5%	22.5%	750	60.0%	40.0%	738	47.1%	52.9%



DISCUSSION

- In a *de novo* home therapies program, the relative selection of PD and HHD among new dialysis patients ultimately guides census growth and the mixture of modalities.
- This simulation is limited to the impact of modality mix on treatment revenue. Additional benefits from reduced home dialysis training nurse hours, and home market growth were not modeled.

CONCLUSION

- Strategies that increase the ratio of HHD share to PD share—including the use of innovative HHD devices, like the Tablo® Hemodialysis System, that improve retention—are likely to be financially favorable.