

# **The Value-Based Procurement Application in Dialysis: A Kingdom of Saudi Arabia (KSA) Case Study**

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# ■ Saudi Arabian Health System changes: Overcoming Challenges with Value-Based Health (Kidney) Care

Improving patient outcomes while reducing costs



1. Cattel D. et al., (2020); 2. Health Sector Transformation Program Delivery Plan, Vision 2023 Kingdom of Saudi Arabia

## VALUE-BASED PAYMENT

Incentivizing providers to reach pre-defined key performance indicators (KPIs) that improve patient outcomes.<sup>1</sup>

## VALUE-BASED PROCUREMENT

Purchasing medical technology based on its longer-term overall value rather than on its up-front cost.<sup>2</sup>

# Value-Based Procurement Brings 'Value' in Tender Processes<sup>3</sup>

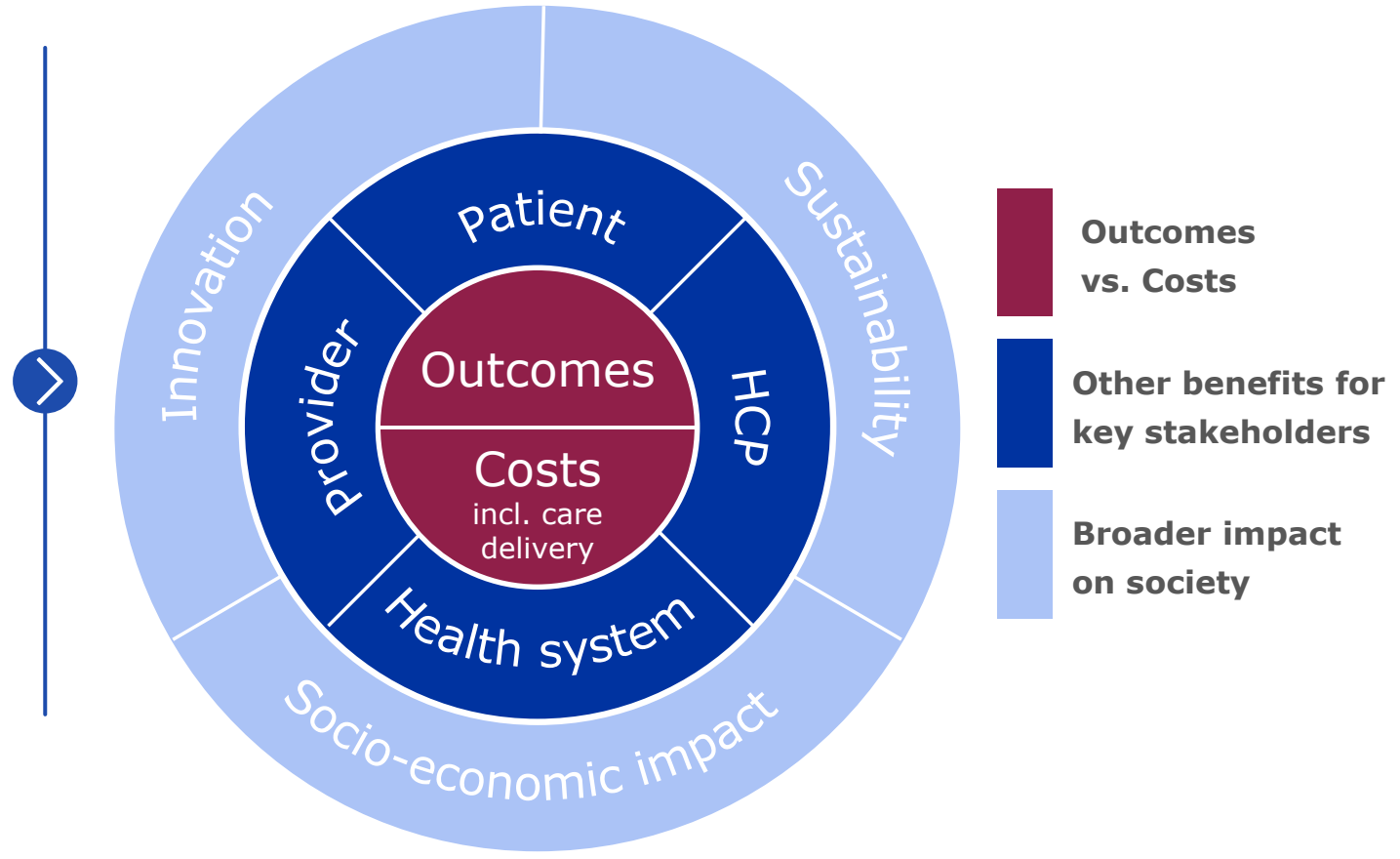


*Health outcomes that matter to patients*

$$\text{VALUE} = \frac{\text{Health outcomes that matter to patients}}{\text{Cost of delivering these outcomes}}$$



## Value-Based Procurement Framework



3. Value-based procurement- Partnering for patient-centric, sustainable health care (2019) – Standard Presentation

# ■ Total Cost of Ownership as part of the Value-Based Procurement practice

## Value-Based Procurement

prioritizes the overall value of a product or solution rather than simply selecting the lowest cost option..

## Total Cost of Ownership


considers all cost items that need to be reflected before purchasing any medical technology:  
*technology purchasing, energy, installation, maintenance, repairs, upgrade, personnel training, etc.*<sup>4</sup>




Potential savings and impact that a new technology can have on the total treatment costs as a results of improved outcomes (e.g., organizational, clinical, etc.)<sup>4</sup>

4.Hospodkova P. et al.,(2016)

## SAUDI ARABIAN DIALYSIS CENTER

 > 300 patients

 > 45.000 dialysis treatments/year

 > 90 stations



Low quality water  
Old machines with high failure rate  
No use of hemodiafiltration  
High maintenance cost  
Very high consumables cost  
High cost of waste

## APPROACH



Identification of key challenges, strategic goals and unmet need of the customer



Set up of a multidisciplinary team to ensure the alignment from all stakeholders



Solution proposal (product and service)



Application of Total Cost of Ownership methodology to show the overall lifecycle costs



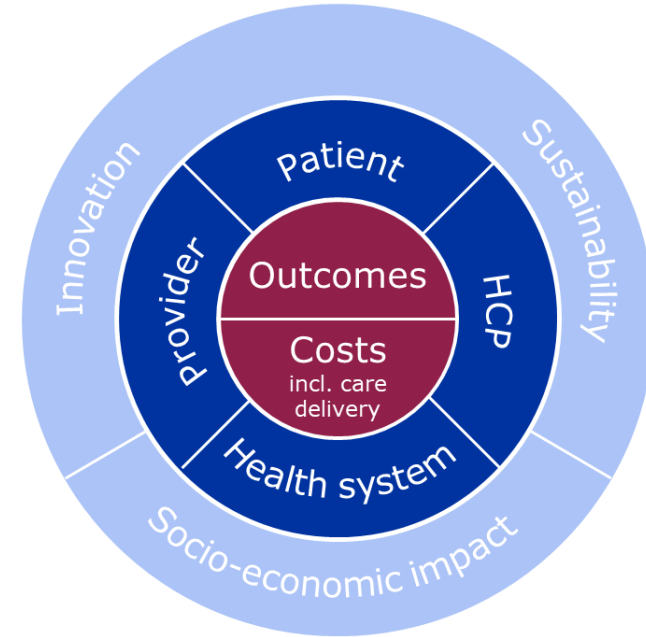
Move from supplier to partner

# Value-Based Procurement: Saudi Arabian Dialysis Center



## PROBLEM DEFINITION

- Eight different suppliers for hemodialysis and acute dialysis treatments
- Reduction of machine failures and consequently maintenance time
- No use of hemodiafiltration due to the low water quality



## MAIN CRITERIA USED – NO MINIMUM TECHNICAL REQUIREMENT



Safety for patient  
& care provider



Operational  
efficiency



Total Cost of  
Ownership



Environmental  
sustainability



Quality of care

# Value-Based Procurement: Saudi Arabian Dialysis Center



## Total Cost of Ownership Calculation (TCO)

- Positive TCO despite investment in new technology
- Main value drivers in organizational and clinical value
- Move from supplier to partnership agreement

	Current Set-Up Dialysis Center	New Set-Up Dialysis Center	Saving
<b>Technology</b>			
<b>Equipment</b>	106	116	3.7M SAR
<i>of which</i>	25 (Old HD* machines)	25 (New HD* machines – replaced) 10 (New CKRT** machines)	2.5M SAR 1.2M SAR
<b>Water Treatment Units</b>	2	2	2
<i>of which</i>	One old, one new	Two new units with capacity 3.000 L/h	3.2M SAR
<b>Water Quality</b>	Not use for HDF***	Ultrapure water for HDF***	Ultrapure water for HDF***
<b>Costs</b>			
<b>Equipment</b>			
Maintenance	2.3M SAR	Included	2.3M SAR
Resident Engineer	Additional costs (multiple suppliers)	Included	250K SAR
<b>Consumables</b>			
HD*/CKRT**	20.6M SAR	16.9M SAR	3.7M SAR
<b>Other Costs</b>			
Water	2M SAR	1.2M SAR	800K SAR
Saline bags	823K SAR	0 SAR	823K SAR
Waste	1.7M SAR	1.3M SAR	400K SAR
<b>Total Costs</b>	<b>27.4M SAR</b>	<b>19.4M SAR</b>	<b>8M SAR + (7.2M SAR Investment)</b>

\*HD=Hemodialysis; \*\*CKRT=Continuous Kidney Replacement Therapy; \*\*\*HDF=Hemodiafiltration

° This saving is coming from the additional administrative/operational burden the customer\* has with the eight different suppliers in comparison to only FME as its partner.

# ■ References

1. Cattel, Daniëlle, and Frank Eijkenaar. "Value-based provider payment initiatives combining global payments with explicit quality incentives: a systematic review." *Medical Care Research and Review*, 77.6 (2020): 511-537.
2. Health Sector Transformation Program Delivery Plan, Vision 2023 Kingdom of Saudi Arabia
3. Value-based procurement- Partnering for patient-centric, sustainable health care (2019) – Standard Presentation [https://www.vbpcommunity.eu/files/ugd/cfafdb\\_d162f7316f8640c983091c15fadce6a3.pdf](https://www.vbpcommunity.eu/files/ugd/cfafdb_d162f7316f8640c983091c15fadce6a3.pdf)
4. Hospodkova, P., Vochyanova, A.: The application of the total cost of ownership approach to medical equipment-case study in the Czech Republic. In: IUPESM World Congress on Medical Physics and Biomedical Engineering, pp. 361–366 (2016)



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**Thank you**

