Public Private Partnership in Indian Dialysis Market: A Disruptive force

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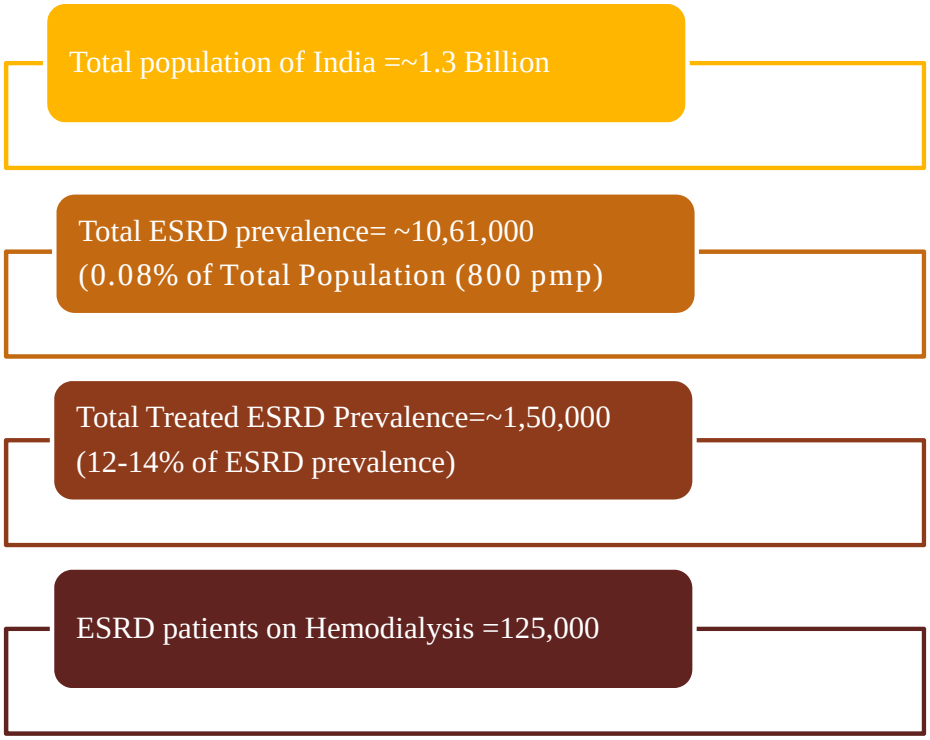
pwc

Introduction : Disease burden and dialysis requirement



An ESRD patient requires around 3 rounds of dialysis per week

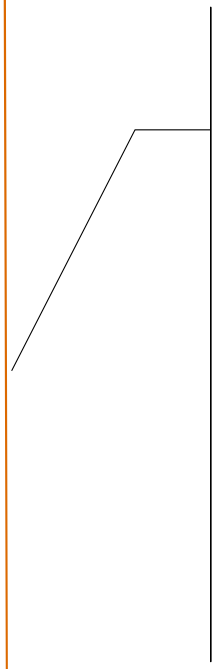
On an average, the dialysis session and cost ranges from Rs.500 in charitable organization to about Rs.2000 in private organization

The government is moving towards PPP model because it will assure not only reach and affordability but also quality standards.

Rationale & Objectives

Rationale

- The purpose of this study is to understand the concept of public private partnership and its impact on dialysis market in future.
- The Indian healthcare system is facing challenge in making the healthcare services affordable and accessible to the patients in need
- India is gearing up its capabilities to respond to changing disease incidence profiles.
- With the efforts of government to make the healthcare services available to the public, this sector is going to flourish.



Objectives of the Study

General Objective

To understand the concept, current status and future trend of Public Private Partnership (PPP) in Dialysis market in India

Specific Objective

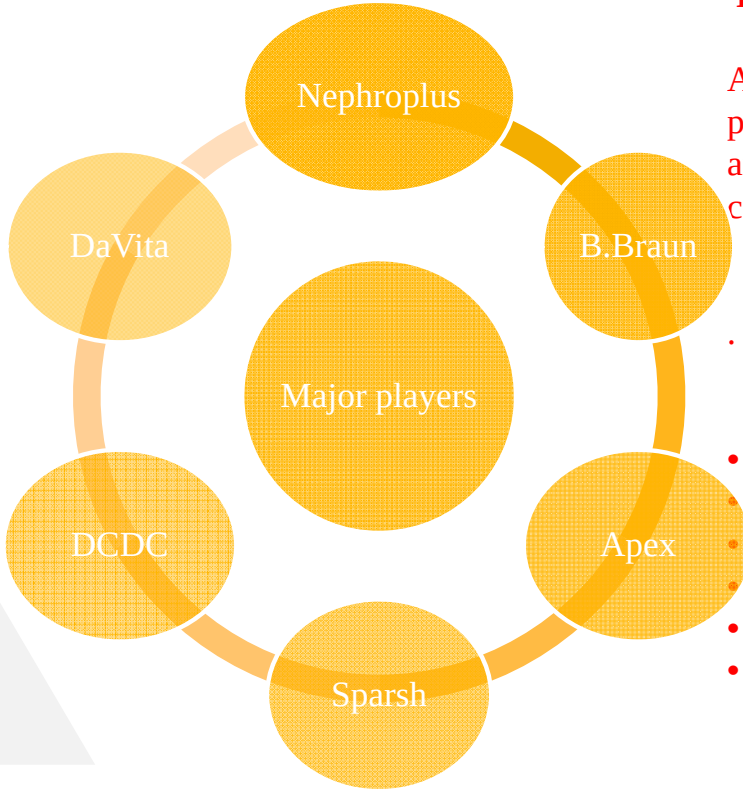
- To understand the concept of PPP model in dialysis market of India.
- To determine the future expansion trend in PPP model in Indian dialysis market.
- To point out the challenges and barriers of PPP model in dialysis market of India

Review of literature

According to NCBI report, the prevalence of ESRD is 0.08% out of which only 125,000 patients are able to undergo hemodialysis.

According to PLOS journal diabetes is leading cause of ESRD. With increase in the prevalence of diabetes, the cases CKD and ESRD are expected to rise.

As per Indian Council of Medical Research data, the diabetes prevalence in Indian population has increased to about 7.1%(degree of variation, 5.8% in Jharkhand to 13.5% in Chandigarh) and in urban population the prevalence is higher (28%).



Public private partnership:

A long term contract between a public sector
and one or more private sector companies functioning as a legal entity

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- **TYPES OF PPP MODEL:**
- Service contracts
- Management contracts
- Lease contracts
- BOT contracts
- Concessions

Research Methodology

Study Design

Descriptive study with both qualitative as well quantitative data

Primary research: Semi-structured interviews with nephrologists and industry experts like equipment manufacturers

Secondary research: Internal data(PWC)& external data

Study setting

The data for the study has been collected PAN India

Telephonic interviews as well as face to face interviews with the nephrologists, equipment manufacturers, and dialysis center technicians

Instrument used for collection of information was semi structured

Duration of study

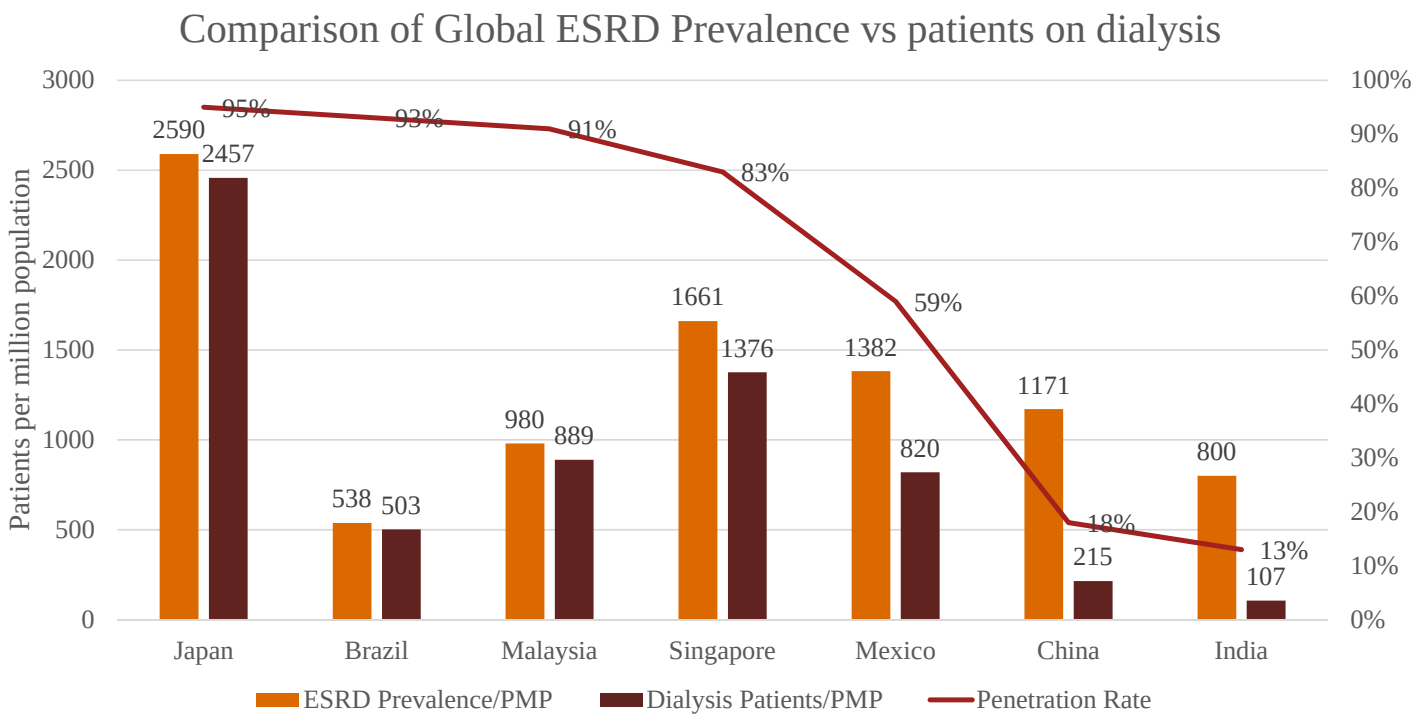
20th February, 2017 to 12th May, 2017

Steps in calculation :

Steps in calculations	sources
Estimated the total machines in market	Industry sources
Identification of market segments government and private hospital, organized dialysis service providers and PPP(public private partnership)	Secondary and primary
Estimated the number of machines in different market segment (total supply)	Primary and secondary
Estimated the number of machines in different cities	Industry sources
Estimated total patients in different segments	Secondary (assuming 70% utilization, 3 sessions per day and 300 working days)
Estimated ARPT	Secondary and primary
Estimated total hemodialysis market	Total patients x estimated ARPT
Estimated total peritoneal dialysis market	10 % of total patients , 1.6 times ARPT
Total dialysis market	Total HD market + total PD market

Key findings

India with 13 % ESRD patients on dialysis has one of the lowest penetration rate; on the other hand countries like Japan have a penetration rate of up to 95 %



- **Prevalence of ESRD:** 0.08 %(800 PMP).
- **Population getting dialysis:** Only 125,000 out of the total ESRD patients are able to get dialysis.
- **Price per session:** On an average, the cost to patient for a dialysis session ranges from about ₹500 in subsidized charitable outlets to about ₹2,000 in private institution.

Due to poor compliance issues, dialysis patients in India undertake ~2 sessions per week against the recommended 3 sessions

	High prevalence	Low Diagnosis and Treatment Rate	Low Dialysis Penetration	Poor Compliance
Current trend	More than 13 million existing ESRD patients with ~200,000 added annually	Approx. 12-14% patients diagnosed and receive some form of treatment^	Only 10-12% patients undergo Dialysis. (16 dialysis machines ppm) ^	Only affluent and insured patients take 3 sessions per week
Future trend	Patient load expected to increase with increasing burden of ESRD risk factors (Diabetes Mellitus & Hypertension)	Treatment rate expected to rise with increasing healthcare affordability and accessibility	Penetration rate expected to improve further with expected growth in dialysis centers	Compliance is likely to improve with increasing affordability and inclusion of dialysis in some of the insurance plans

Average monthly per capita household out of pocket medical expenditure was ~146 INR in urban areas and ~95 INR in rural areas (2011-12 estimates, National Health Profile 2016).

Major Organized Dialysis Service Providers

	APEX KIDNEY CARE	nephroplus dialysis made easy	DCDC KIDNEY CARE	B BRAUN SHARING EXPERTISE	DaVita.	sparsh NEPHROCARE
Year Of Inception	2008	2009	2009	2009	2009	2010*
Overview	**Founded by 5 nephrologists**	**Founded by Vikram Vuppala, S. GudiBanda and K. Shah**	**Founded by Aseem Garg**	**Equipment Manufacturer Company in PPP Model**	**Partnership between DaVita Inc. and NephroLife Care (India) Pvt. Ltd.**	**Founded by Gaurav Porwal and Saurav Panda**
Number Of Centres	**46**	**96**	**67**	**35**	**19**	**55**
Sessions per month	**27,000**	**52,000**	**14,000**	**24,000**	**12,500**	**18,000**
Price per session (USD)	**20-21**	**24**	**19**	**16**	**31**	**19-21**
Dialysis machines	**450**	**973**	**397**	**400**	**250**	**369**

Source: Industry Reports and Discussions

* Fresenius Medical care has bought 85% stake in Sparsh in 2016

Major Dialysis Service Providers among Hospitals

	Apollo HOSPITALS	COLUMBIA ASIA	Fortis HOSPITAL	Manipal Hospitals LIFE'S ON	MAX HEALTHCARE
Year of inception	**1983**	**2005**	**2001**	**1991**	**1985**
Current Bed Strength	**~8,200**	**~1,000**	**~4,000**	**~2,000**	**~2,200**
Dialysis cost (single use) in USD	**44-66**	**36-49**	**32-49**	**23-38**	**32-52**
Dialysis cost (reuse) in USD	**24-39**	**25-39**	**25-40**	**19-28**	**24-27**
Sessions per month	**20,000**	**3,500**	**14,500**	**11,000**	**12,000**
Number of machines	**250**	**50**	**200**	**150**	**150**

Source: Industry Reports and Discussions, PwC Analysis

PPP centres in India

Player	State of Operation	Number of centres	Number of machines	Average machines per centre	Year of award of PPP	Rate Per Treatment(USD)
B.Braun	Telangana	5	69	13	2012	15
	Bihar	17	160	9	2014	16
	Andhra Pradesh	13	171	14	2010	15
Nephroplus	Andhra Pradesh	12	118	10	2012	14
	Tamil Nadu	1	15	15	2014	19
	Karnataka	1	25	25	2016	11
	Telangana	2	37	18	2012	19
DCDC	Delhi	3	40	13	2013	16
	Madhya Pradesh	1	2	2	2016	7
Apollo	Tamil Nadu	1	9	9	2010	19
Rahicare	Uttarakhand	1	17	17	2010	15
Heritage Hospital	Uttar Pradesh	2	14	7	2015	DNA
Soni Hospital	Rajasthan	1	DNA	DNA	DNA	DNA

Source: healthmarketinnovations.org ,hehealthsite.com ,financialexpress.com, drugtodayonline.com

PPP scenario in India

Operating Model

- Service provider to provide, dialysis machine along with RO water plant infrastructure, dialyzer, medical human resource and consumables
- Payor government to provide space in district hospitals, drugs, power, water supply and pay for the cost of dialysis for the poor patients

Financial Model

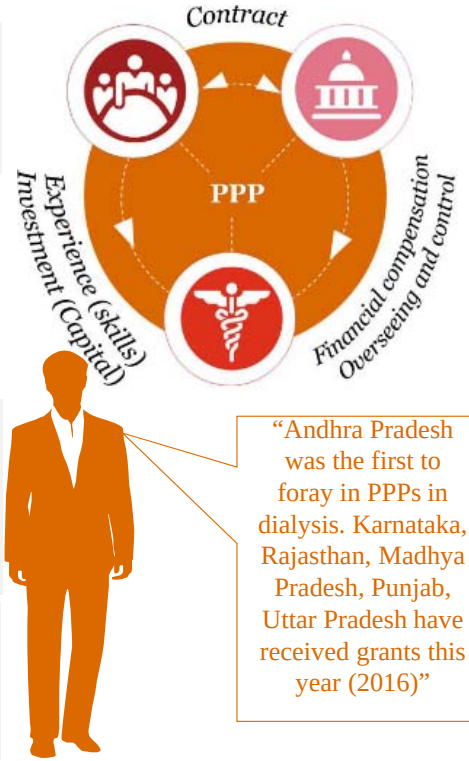
- 100% of the service procedure fees for patients from below poverty line (BPL) is covered by the government
- However, non BPL patients get the treatment at the same rates as paid by the Government for the BPL patient
- RSBY covers dialysis up to its maximum coverage. The additional resources required are provided under the National Health Mission

Benefits to the Government

- Increase in supply
- Reduced financial burden as there is less capital involved
- Improved operational efficiency
- Increased Quality of Care to patients by private players

Prevailing Players

- Nephroplus in Andhra Pradesh, Tamil Nadu, Telangana & Karnataka
- DCDC in Delhi and Madhya Pradesh
- B.Braun in Andhra Pradesh, Telangana and Bihar
- Heritage Hospital in Uttar Pradesh
- Soni Hospital in Rajasthan



"Andhra Pradesh was the first to foray in PPPs in dialysis. Karnataka, Rajasthan, Madhya Pradesh, Punjab, Uttar Pradesh have received grants this year (2016)"

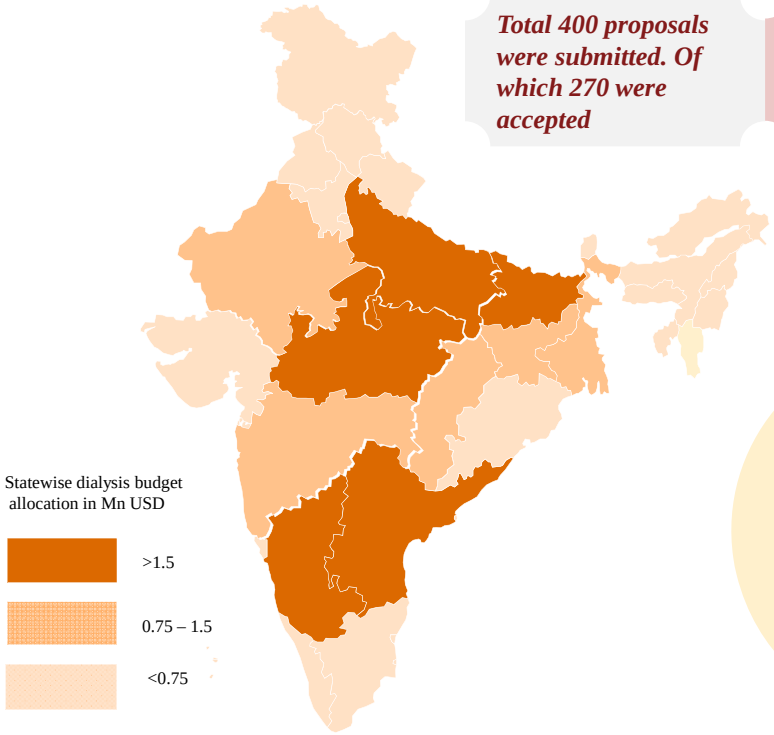
Source: Industry Experts and Discussions

More than 22.7 Mn USD has been allocated to 27 states/ union territories for setting up new PPP centres under the national dialysis program

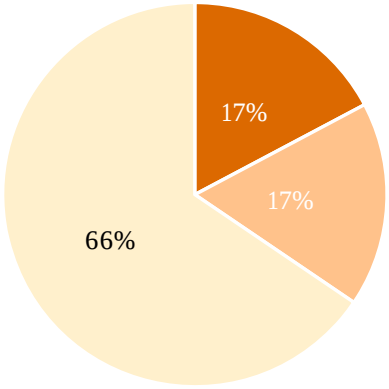
Total 400 proposals were submitted. Of which 270 were accepted

Total 22.7 Mn USD allocated for FY16-17 under the national dialysis program

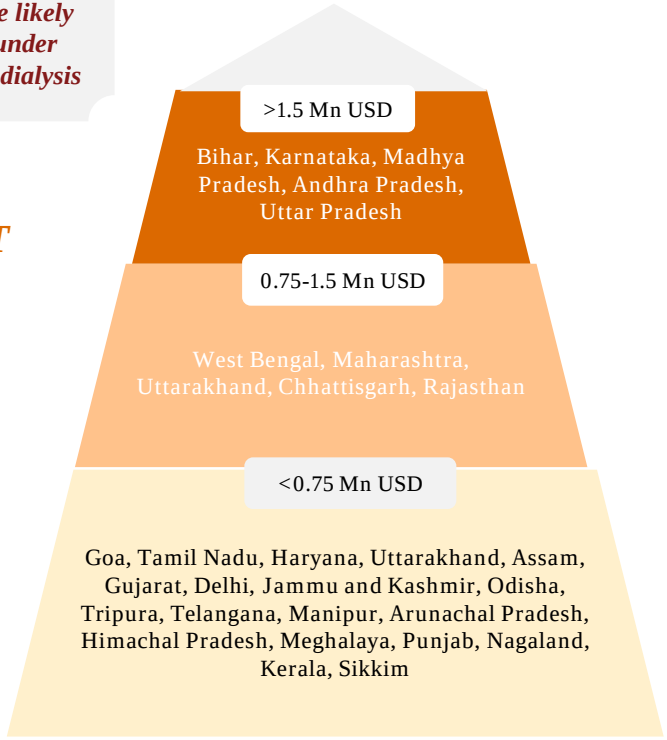
Around 1500-1800 machines are likely to be added under the national dialysis program



Budget allocation State/U.T wise

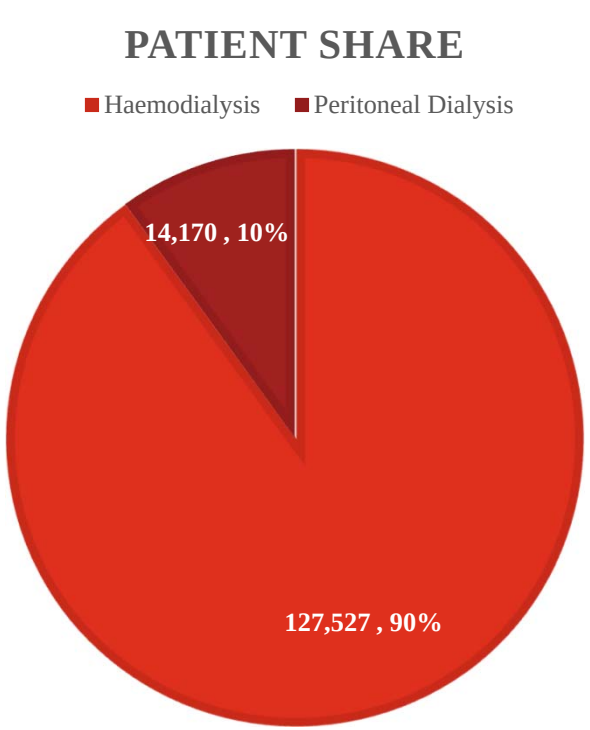


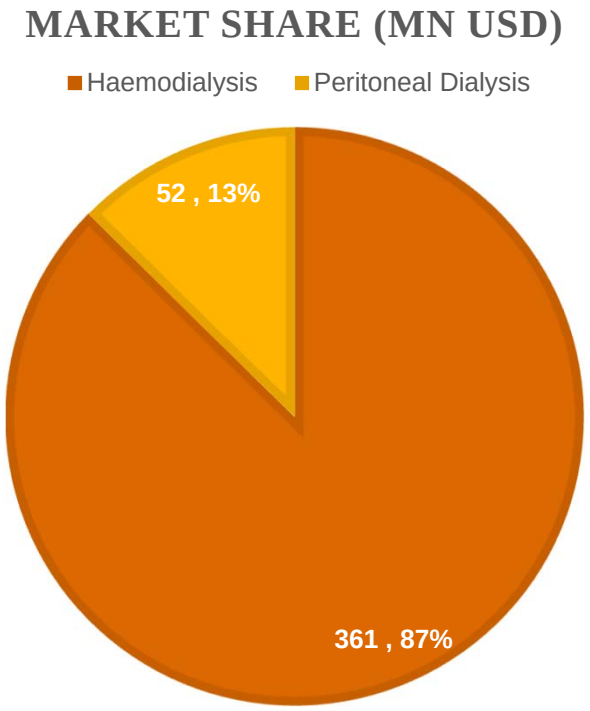
■ >1.5 Mn USD ■ 0.75-1.5 Mn USD ■ <0.75 Mn USD



Source : pib.nic.in

Current Indian Dialysis Market (2016) is valued at ~414 Mn USD with Haemodialysis having ~90% market share





Monthly cost of 3 PD session per day is ~1.5x the monthly cost of 2 HD sessions per week.

Source: Industry Reports

Valued at 361 million USD, the Indian Haemodialysis market has grown at a CAGR of ~20% over the last five years and is expected to continue growing at the same rate over next five years

Service Providers	Dialysis Machines^^^		Patients on Dialysis^^^	Revenue per Treatment (USD) ^^^	Revenue (in USD Million)^^ (2016-17)	
	Number	Percentage			Number^^^	Percentage
Government Sector*	3,800	18%	23,000	9-10	$ 26 m	7%
Public Private Partnership**	900	4%	5,400	14-17	$10.9 m	3%
Private Hospitals^!	14,300	69%	87,000	25-28	$289.9 m	80%
Organized Dialysis Service Providers***	2,000	9%	11,500	22-25	$ 34.6 m	10%
Total	21,100	100%	1,27,000	NA	$361 m	100%
Growth Rate (For last 5 years)	~15% CAGR		~15% CAGR	~4.5% CAGR	~19.5% CAGR	

Source: Industry Reports and Discussions

*Excluding PPP
^Does not include organized players
**Includes PPP of B Braun and Nephroplus
*** In Hospital or standalone

^^Conversion Rate : 1 USD = 67 INR; 20% mark up for pharma(including EPO), Consultations and investigations done at centre ^^^ Numbers rounded off

Current Market Size as per ARPT Segment

Player (machines)	ARPT Segment (Per Session)	% of machines in respective segment	Comments
Private Hospitals (14,272)	Low price	10%	Most Tier 3 hospitals
	Middle price	70%	Many Tier 1 and Most Tier 2 Hospitals
	High price	20%	Most Metro and Tier 1 Hospitals
Organized Dialysis Service Providers (2043)	Low price	23%	Sparsh, DCDC
	Middle price	65%	Nexus, Rahicare, Apex
	High price	12%	DaVita
PPP (896)	Low price	100%	B Braun, Nexus, DCDC, Heritage (896)
Government Sector (3841)	Low price	100%	Government Hospitals (3841)

National Dialysis Program : A total of 22.8 Mn USD has been allocated for 29 States & UT's

S.no.	States	Amount approved under NDP (in Mn USD)	Number of proposed/approved dialysis centres *
1	Bihar	3.0	24
2	Karnataka	3.0	27
3	Madhya Pradesh	2.8	48
4	Andhra Pradesh	1.8	Info not available*
5	Uttar Pradesh	1.6	57
6	West Bengal	1.1	Info not available*
7	Maharashtra	1.0	23
8	Jharkhand	0.9	8
9	Chhattisgarh	0.9	Info not available*
10	Rajasthan	0.8	Info not available*
11	Goa	0.7	-
12	Tamil Nadu	0.6	31
13	Haryana	0.6	14
14	Uttarakhand	0.6	6
15	Assam	0.5	Info not available*
16	Gujrat	0.5	Info not available*
17	Delhi	0.5	Info not available*
18	Jammu & Kashmir	0.3	Info not available*
19	Odisha	0.3	Info not available*

S.no.	States	Amount approved under NDP(in Mn USD)	Number of proposed/approved dialysis centres
20	Tripura	0.3	5
21	Telangana	0.2	14
22	Manipur	0.2	3
23	Arunachal Pradesh	0.2	Info not available*
24	Himachal Pradesh	0.2	Info not available*
25	Meghalaya	0.2	Info not available*
26	Punjab	0.2	21
27	Nagaland	0.1	Info not available*
28	Kerala	0.1	Info not available*
29	Sikkim	0.0	Info not available*
	Total	22.8	281

* Information not available

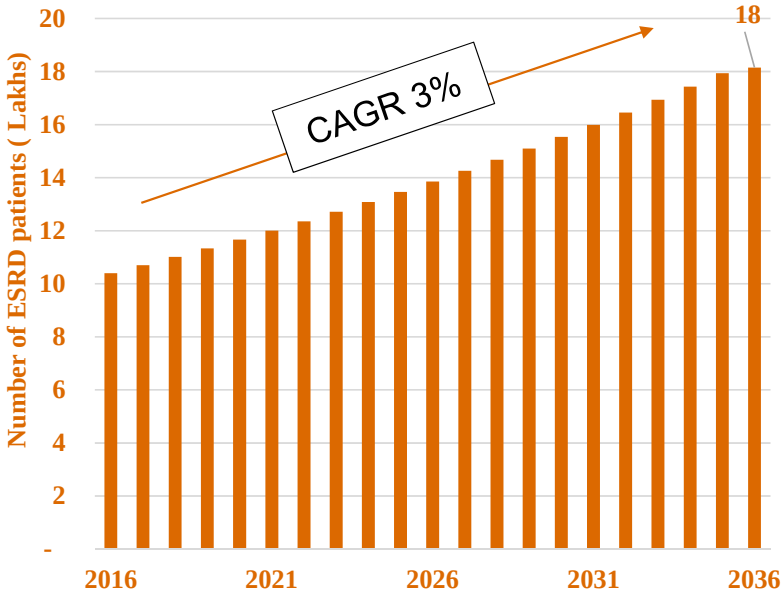
FUTURE PROJECTIONS

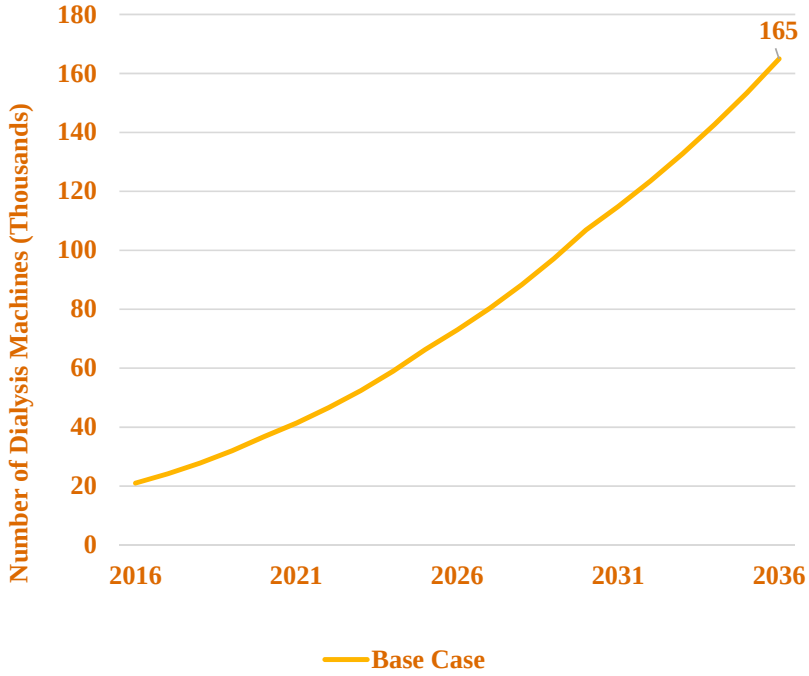
Input Assumptions for future projections

Parameter	Current	Base case
ESRD prevalence	0.08%	0.11%
Current Market Growth Rate	15%	
Growth Rate for Number of Machines	Till 2020	15.0%
	From 2020 to 2025	12.5%
	From 2025 to 2030	10%
	From 2030 to 2036	7.5%

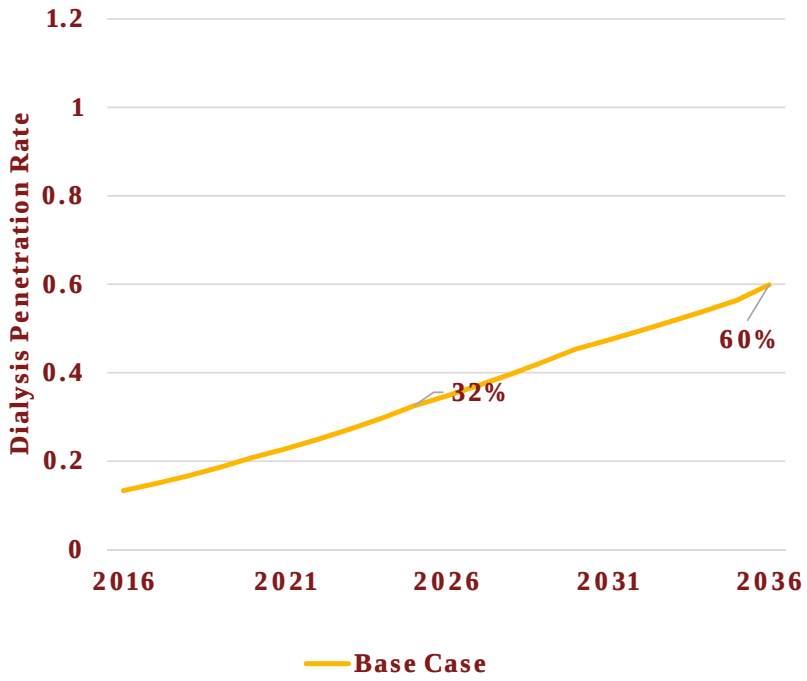
Parameter		Current (2017)	Base Case
Share of machines 2025	PPP sector	4%	15%
	Private sector	69%	55%
	Government sector	18%	8%
	Organized player sector	9%	22%
Annual price increase	PPP sector	1080	3%
	Private sector	1800	5%
	Government sector	600	3%
	Organized player sector	1500	5%

India is likely to have more than 1.8 Million ESRD patients on dialysis by 2036; the number of machines are expected to reach ~165,000 by then (CAGR ~11%)

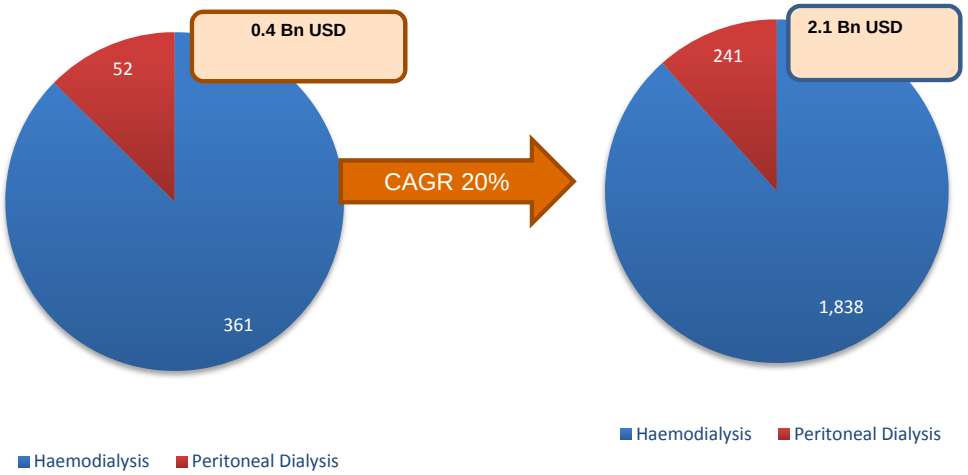




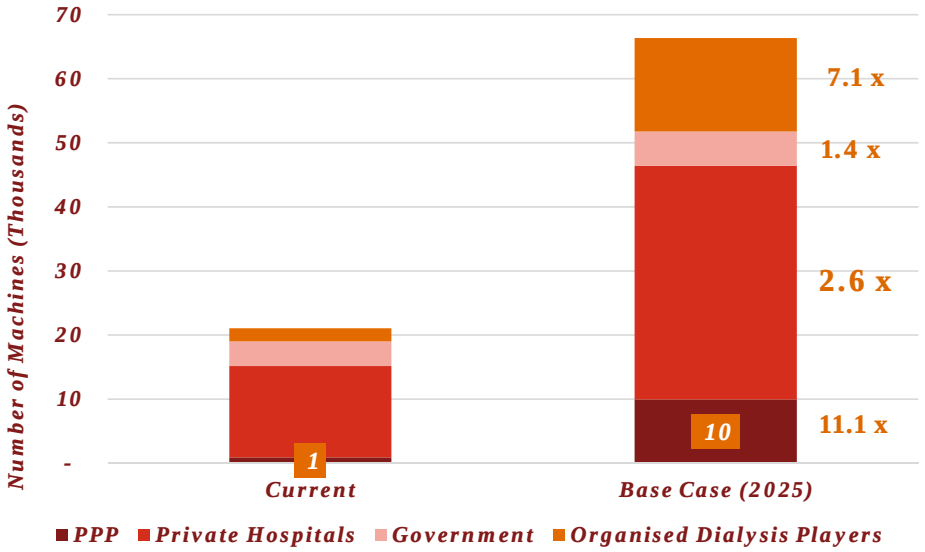
Given the current market expansion and the expected government push in PPP sector, dialysis penetration rate in overall market to increase to 60% in next twenty years



Future Indian Dialysis Market is expected to be ~2.1 Bn USD in 2025 (Base Case) with a CAGR of 20%.



Indian haemodialysis market is expected to be ~1.8 Bn USD market by 2025 (Base Case), at a CAGR of 20% with maximum growth expected in the PPP segment



In a Base Case Scenario, the number of machines is expected to increase at ~14% till 2025 due to expansion in PPP and Organised players sector

Demand Side Factors

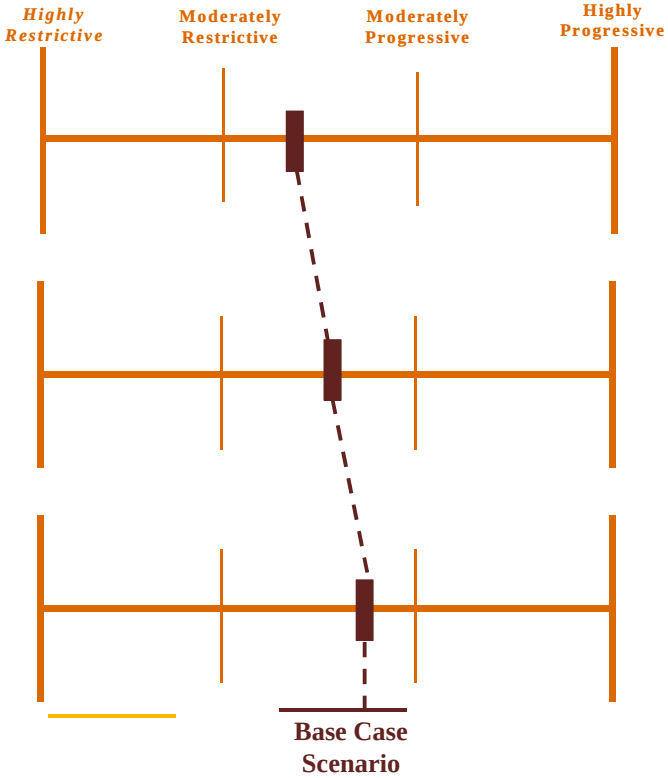
- *Prevalence of ESRD increases from its current level of 800 ppm to 1100 ppm, due to increased incidence of risk factors like hypertension. diabetes, obesity, etc.*
- *Increased affordability and increased health insurance penetration further increases the demand for dialysis services*

Supply Side Factors

- *The number of machines grow at 15% annually till 2020 and then tapers down*
- *Government initiatives in PPP sector expand due to increased funding*
- *Nephrologist supply continues to increase at current rate and they are available in tier 2 and 3 cities*

Organised Players

- *Organised Player's growth further continues and it adopts advanced management practices.*
- *The share of organised players increases to 22% of overall market*



Source: Industry Discussions, PwC Analysis

Drivers and Barriers for PPP model in India

Drivers → **Government Initiatives**

- Government to gradually move from a provider to payor for dialysis
- National Dialysis Services Programme (Announced in the Union Budget 2016-2017)
  - ➢ Funds will be made available under the National Health Mission, to provide dialysis services in all district hospitals
  - ➢ Certain parts of dialysis equipment have been exempted from basic customs duty (CVD and SAD)

Barriers → **Payment Risks**

- Payment risk. Inordinate delays up to 12 months
- Service provider can only raise invoice only after a minimum of 12 cycles
- Certain equipment manufacturers vary of current PPP model

Source: Industry Experts and Discussions

Industry Insights

"40% of current demand is coming from PPP sector"

"Saturation of PPP in Andhra Pradesh. No further growth expected"

"Orissa is contemplating PPP but is unsure on how exactly to pursue"

"Bihar copied PPP model from some other state. Doesn't know how to operate. Other players scared to be takeover"

Limitations of study

- Limited time for interviews with doctors
- Variation in information related to cost per session
- Future projections are based on assumptions

Conclusion

- Dialysis market analysis with special focus on PPP in dialysis was done.
- Over 50+ centers operate under PPP model in dialysis all over India.
- Although PPP business has lesser Revenue Per Treatment, its EBITDA margins have been consistently higher than other centre types.
- With the announcement of national dialysis program this number is going to increase as 400 proposals for starting the centers under PPP model have been submitted.A total of 22.8 Mn USD has been allocated for 29 States & UT's.
- In a Base Case Scenario, the number of machines is expected to increase at ~14% till 2025 due to expansion in PPP and Organised players sector.
- . Prevalence of ESRD increases from its current level of 800 ppm to 1100 ppm, due to increased incidence of risk factors like hypertension.
- . The number of machines grow at 15% annually till 2020 and then tapers down. Government initiatives in PPP sector expand due to increased funding.
- Organised Player's growth further continues and it adopts advanced management practices. This will make a positive impact on the coverage of patient under dialysis.
- The availability and affordability might improve if accompanied by proper awareness and treatment regimen which will increase the compliance for dialysis thereby.

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