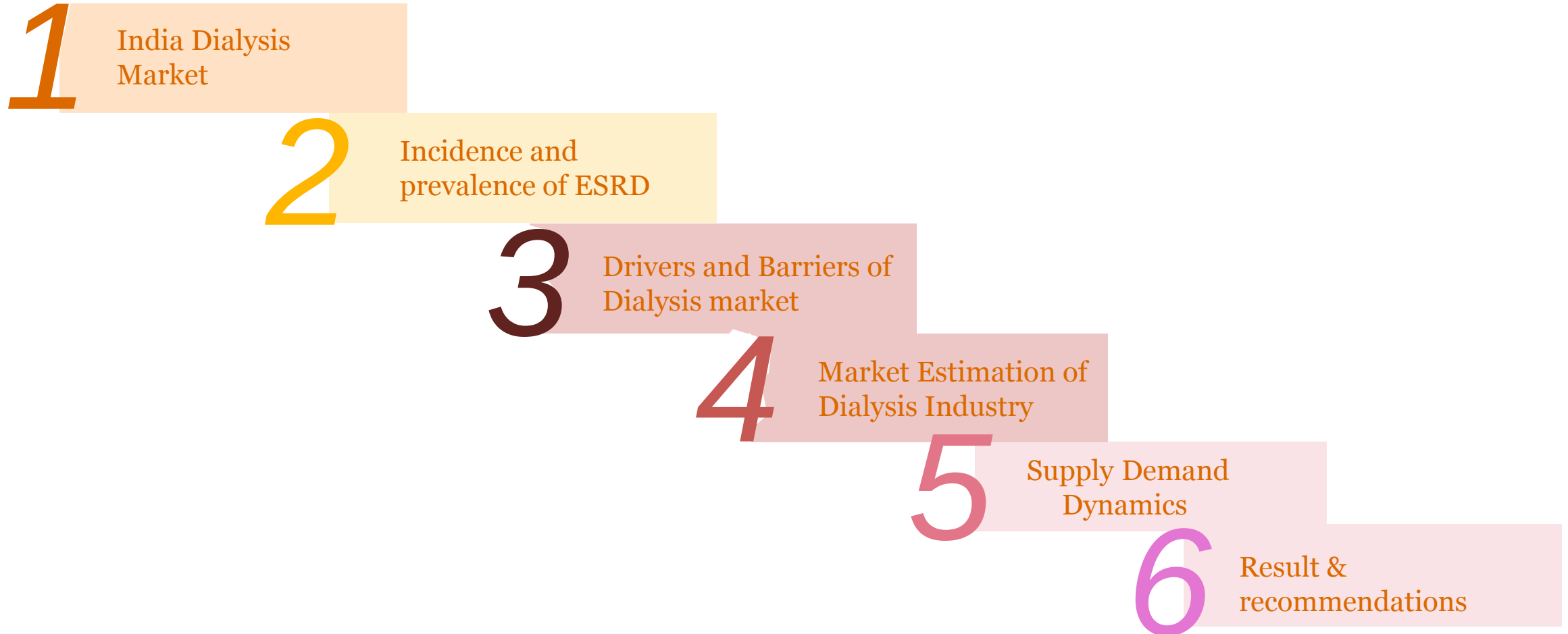


Indian dialysis market

(untapped potential)

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Batch - 20
0344

Project : Indian Dialysis Market



Glossary

ARPT	Average Revenue Per Treatment
BOT	Built Operate and Transfer
BPL	Below Poverty Line
CAGR	Compound Annual Growth Rate
CGHS	Central Government Health Scheme
CKD	Chronic Kidney Disease
COGS	Cost Of Goods Sold
CVD	Countervailing Duty
DM	Doctorate of Medicine
DNB	Diplomate of National Board
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
EPO	Erythropoietin
ESI	Employees Social Insurance
ESRD	End Stage Renal Disease
FY	Financial Year

HD	Hemodialysis
MoU	Memorandum of Understanding
NABH	National Accreditation Board for Hospitals & Healthcare Providers
NABL	National Accreditation Board for Testing and Calibration Laboratories
NDP	National Dialysis Program
NHM	National Health Mission
PD	Peritoneal Dialysis
PMP	Per Million Population
PPM	Patients Per Million
PPP	Public Private Partnership
RO	Reverse Osmosis
RSBY	Rashtriya Swasthya Bima Yojana
SAD	Special Additional Duty
SEEK	Screening and Early Evaluation
USD	United State Dollar

Introduction :

Dialysis: Dialysis is the process to removes the “waste” chemicals that accumulate in the blood because the failed kidneys are unable to excrete them.

It can be done in two ways:

Hemodialysis: in which the blood is taken out of the body and passed through a machine, and done at dialysis facilities

Peritoneal dialysis: in which a natural internal membrane lining the abdomen is used to clear the blood. done at dialysis facilities, whereas the second one is done at home

Since the “waste” accumulation is continuous, dialysis must be repeated at regular intervals

Objectives :

General objective :

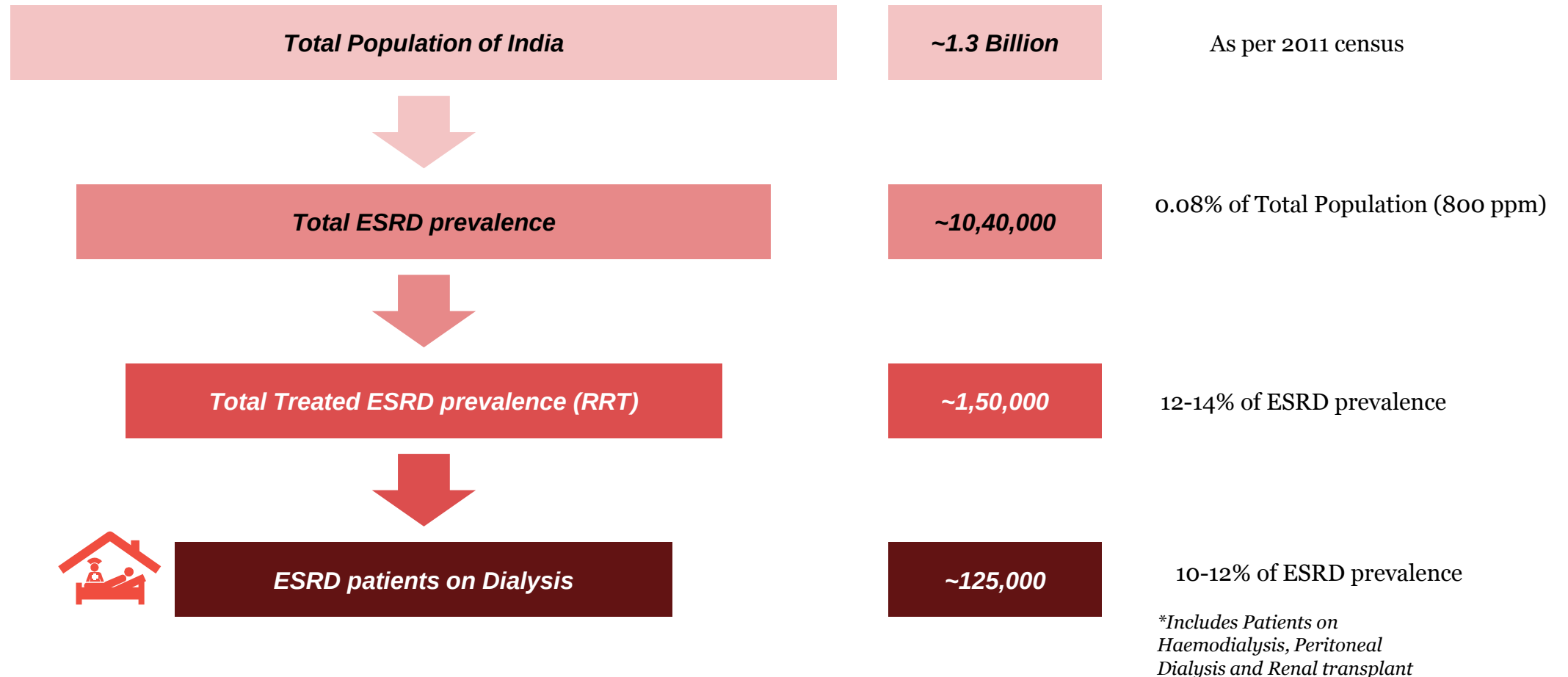
To study and analyze total Dialysis market, its components, growth drivers and barriers

Specific objective :

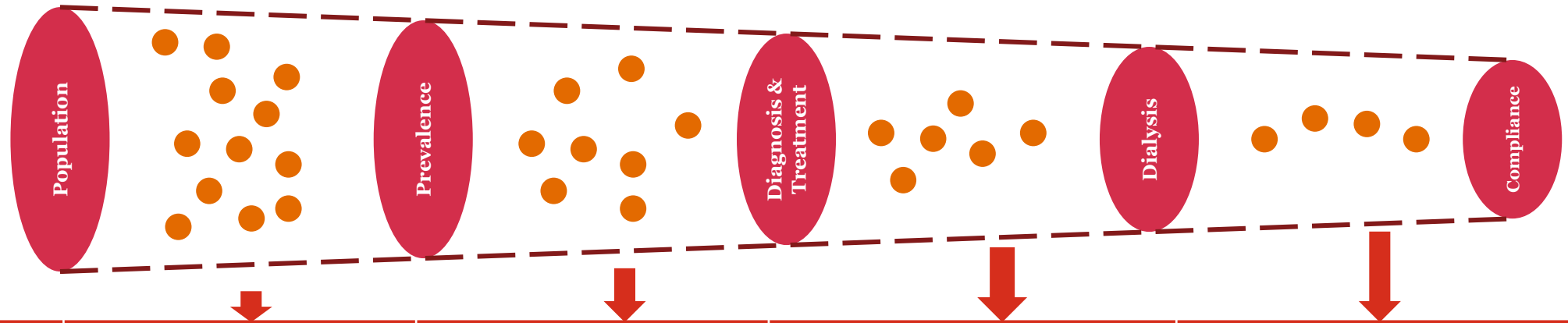
To calculate the unmet needs and unreached portion of dialysis industry . i.e. untapped potential market

“An untapped market is often the impetus for product innovation or customization”

Incidence and prevalence of kidney diseases in Indian population, percentage of people going for dialysis



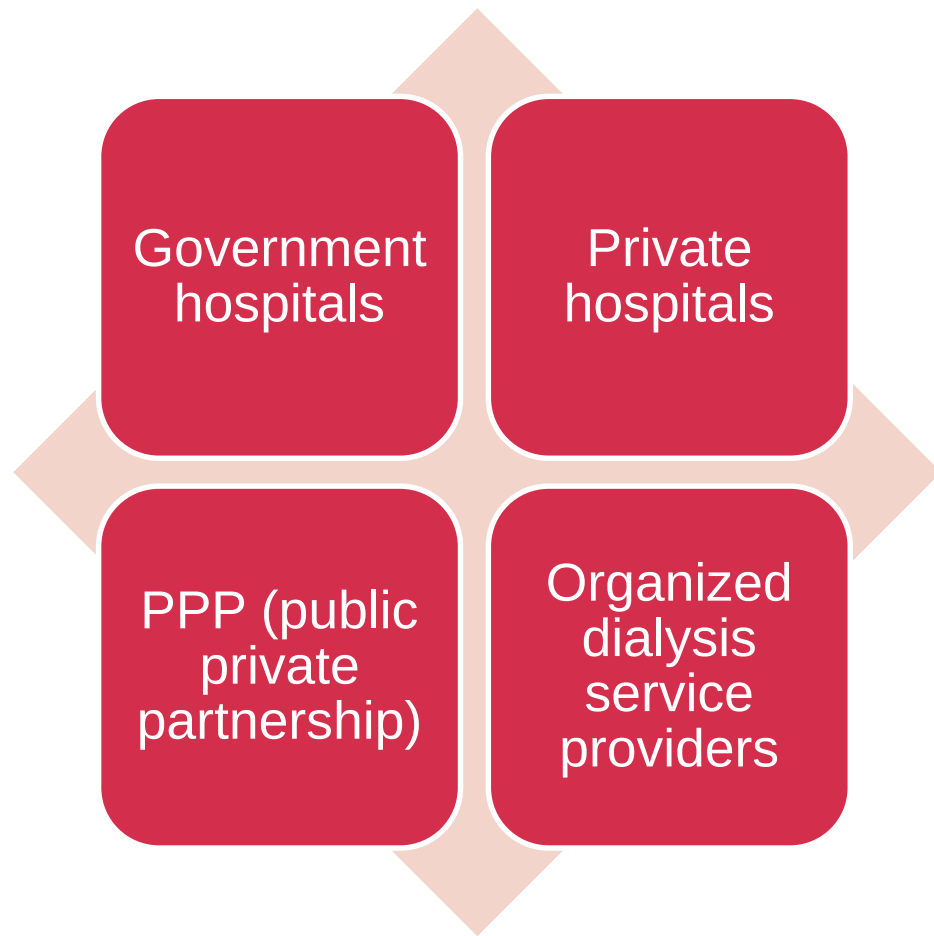
Due to poor compliance issues, dialysis patients in India undertake ~2 sessions per week against the recommended 3 sessions



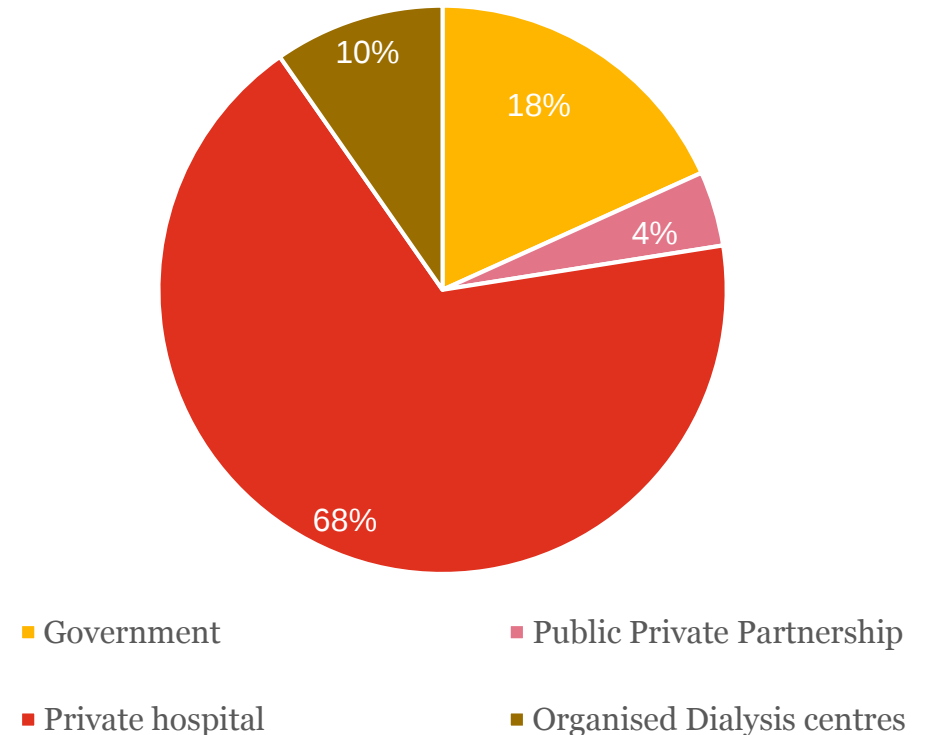
	High Prevalence	Low Diagnosis and Treatment Rate	Low Dialysis Penetration	Poor Compliance
Current Trends	More than 13 million existing ESRD patients with ~200,000 added annually	Approx. 12-14% patients diagnosed and receive some form of treatment[^]	Only 10-12% patients undergo Dialysis. (16 dialysis machines ppm)	Only affluent and insured patients take 3 sessions per week
Future Trends	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 centres	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)

Segments of dialysis market: there are four major components of Indian dialysis market



percentage distribution of machines among them



Growth drivers for dialysis market in India



Increasing Affordability

- Average per capita healthcare expenditure grew almost four times between 2004 and 2014
- Percentage of households with income between Rs 871-4500/day expected to double from 25% in 2015 to 46 % in 2025; middle class constitutes 20% (267 million) people in 2016 and is expected to reach 32% (475 million) by 2030



Government Initiatives

- National Dialysis Program (Lowering of excise duties and Rs 152 Mn allocated for setting up dialysis centres in each district in PPP model)
- Wave off excise duty amount on import of dialysis machine and equipments



Sector Organization

- Increased participation from organized players (with economies of scale and lowered COGS, improved operation, lower infection rate, lower sero conversion rate)
- Centres established in Greenfield, Brown Field and PPP sector



Nephrologists Availability

- More than 160 nephrologists added every year
- Current Scenario (1 for every million population) is expected to improve to 3 (for every million population) in next 20 years *

Barriers of Dialysis Industry:

Only 10% of patients get into Dialysis treatment because of poor compliance and poor diagnostic facilities available.

Dialysis cost around 3 lac per year, most of the patients cannot afford

Low affordability

Only 10% of patients go for Dialysis

~1300 nephrologists in our country which currently demands for 20,000

Lack of nephrologists

Poor accessibility

Most of the dialysis centers and hospitals with dialysis facility are situated in metro cities and urban areas

Government initiatives :

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

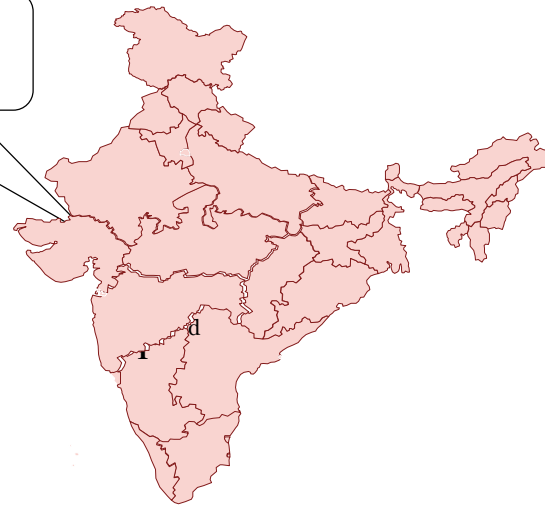
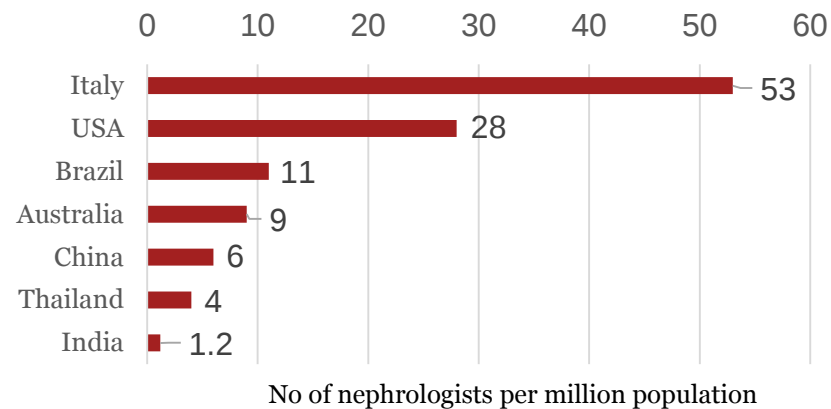


“Andhra Pradesh was the first to foray in PPPs in dialysis. Karnataka, Rajasthan, Madhya Pradesh, Punjab, Uttar Pradesh have received grants this year (2016)”

Around 162 nephrologists are added every year which is ~12% of the current number in the country

There are ~1300 nephrologists in the country

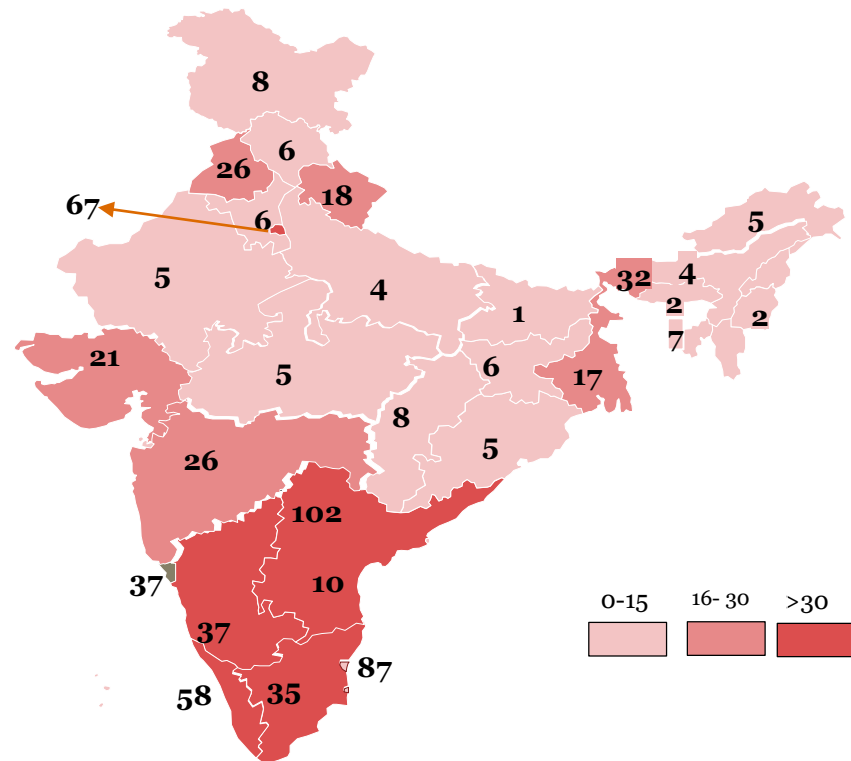
- Limited number of nephrologists in the country limits the availability of dialysis
- Their availability is concentrated mainly in the metro & Tier 1 cities



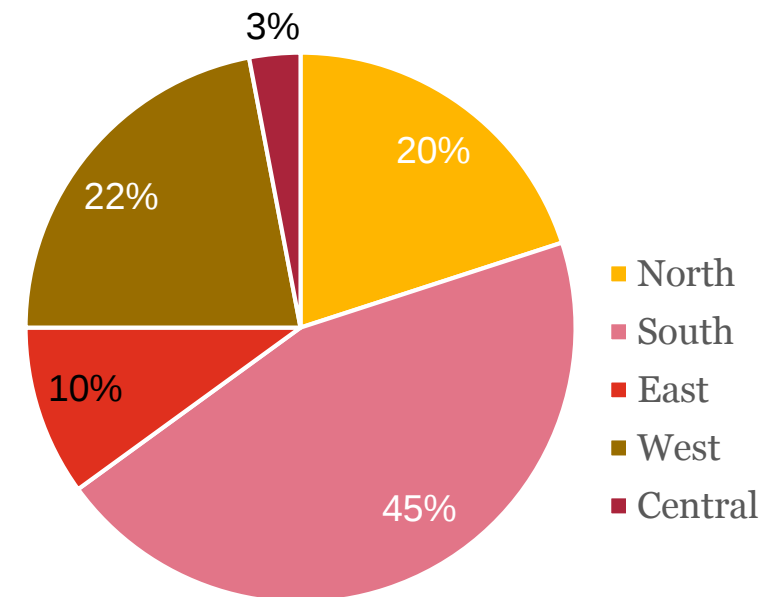
Supply Of Nephrologists		DM Nephrology		DNB Nephrology	
Zone	State	Institutes	Seats	Institutes	Seats
North	Punjab	3	11	-	-
	Delhi	2	15	4	9
	Rajasthan	2	5	-	-
	UP	2	8	-	-
	Haryana	-	-	2	4
South	Andhra Pradesh	3	7	-	-
	Karnataka	5	9	1	4
	Kerala	5	10	2	3
	Puducherry	1	2	-	-
	Tamil Nadu	7	19	3	5
	Telangana	3	10	-	-
East	Assam	1	2	-	-
	Odisha	1	3	-	-
	West Bengal	1	6	2	2
West	Gujarat	1	4	1	3
Central	MP	1	1	-	-
	Maharashtra	5	8	4	5
Total		43	120	24	42

Southern India has the maximum number of dialysis machines available per million population

State wise availability of dialysis machines
per million population



Zone wise availability of dialysis machines



Market estimation

Methodology

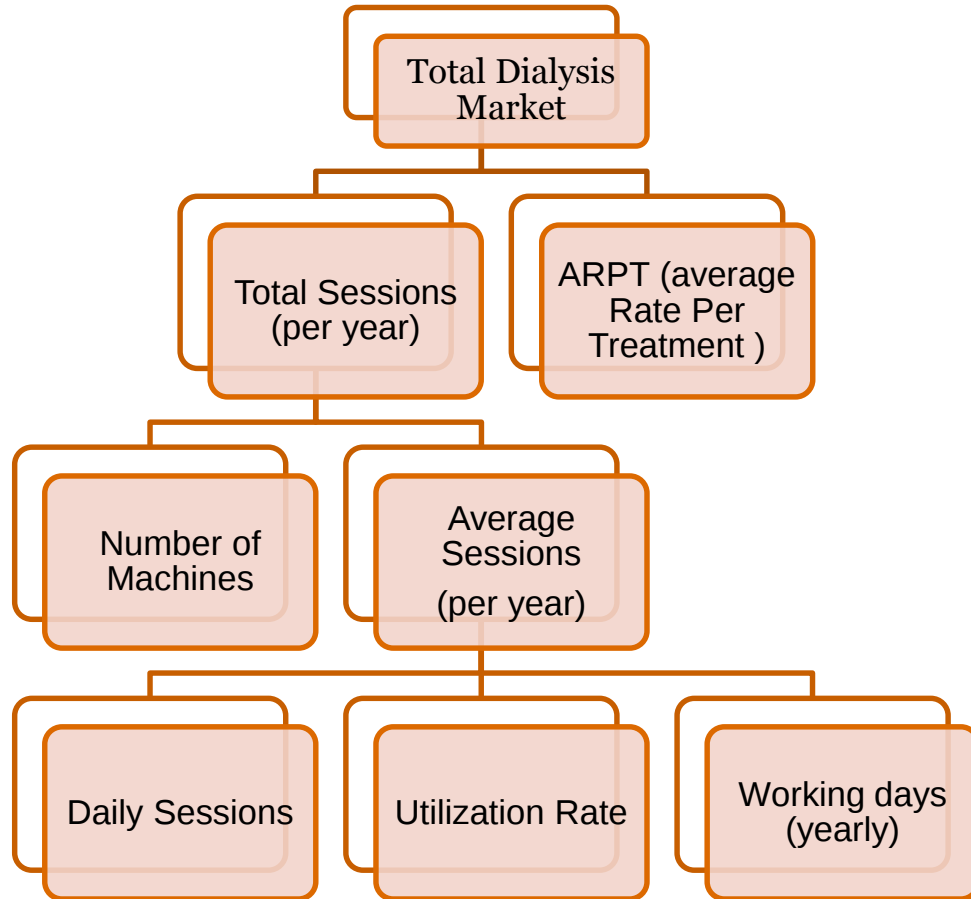
Both primary and secondary sources were used. Interview (personal and telephonic) were conducted . Many articles and journals were referred

Primary data		Secondary data
Name of the stakeholder	Number of interviews	Sources
Nephrologists	16	Journals
Equipment manufacturers	20	Articles
Hospital administration	35	Government websites
Patients	15	Company websites
Attendants of patients	10	Indian journal of nephrology
		International diabetic federation

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

Calculations of market size by number of machines :



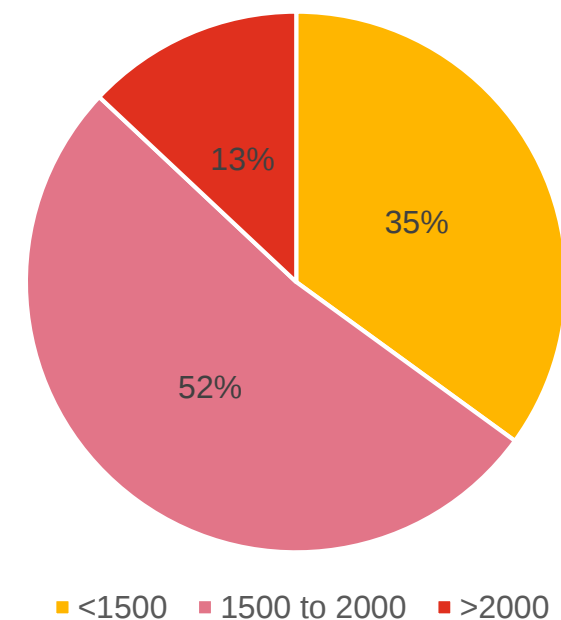
Assumptions and Values

- Daily average sessions = 3
- Average utilization rate = 70 %
- Working days (yearly) = 300
- Average price per session in
Private hospital – Rs 1800
Government hospital – Rs 600
Standalone Dialysis -Rs 1500
PPP – Rs 1080

Market Size as per ARPT :

Player (Beds)	ARPT Segment (Per Session)	Price (INR)	Comments
Private Hospitals (14,400)	Low price	<1500	10% Beds (1400) – Most Tier 3 hospitals
	Middle price	1500-2000	70% Beds (9800) – Many Tier 1 and Most Tier 2 Hospitals
	High price	>2000	20% Beds (2800) – Most Metro and Tier 1 Hospitals
Organized Dialysis Service Providers (2000)	Low price	1400-1500	Most of the players (650)
	Middle price	1630	Single organized player (850)
	High price	2000	Only premium players (400)
PPP (700)	Low price	1000-1100	Initial stage (550)
Government Sector (4,000)	Low price	700	Government Hospitals

Patient split as per APRT per session

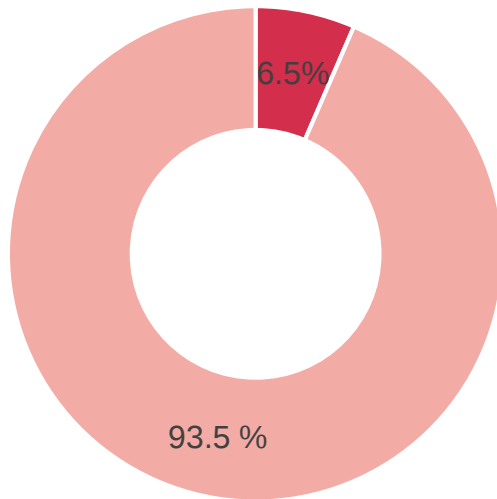


Result: Valued at 20 billion, the Indian Haemodialysis market has grown at a CAGR of ~20% over the last five years and is expected to continue growing at the same rate over next five years

Service Providers	Dialysis Machines		Patients on Dialysis	Revenue per Treatment	Revenue (in Million) (2016-17)	
	Number	Percentage			Number	Percentage
 Private Hospitals ^{^!}	14,300	68%	87,000	1700-2000	160 m	80%
 Government Sector [*]	3,800	18%	23,000	600-700	14 m	7%
 Organized Dialysis Service Providers ^{***}	2,000	10%	11,500	1400-1700	20 m	10%
 Public Private Partnership ^{**}	900	4%	5,400	900-1100	6 m	3%
Total	21,100	100%	1,27,000	NA	200 m	100%
 Growth Rate (For last 5 years)	~15% CAGR		~15% CAGR	~4.5% CAGR	~19.5% CAGR	

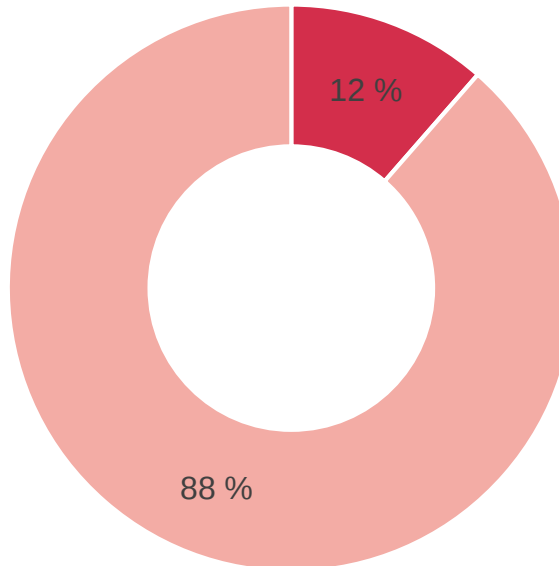
Result : huge unmet needs in form of nephrologists availability , revenue generation and dialysis machines required (untapped potential)

Nephrologist available



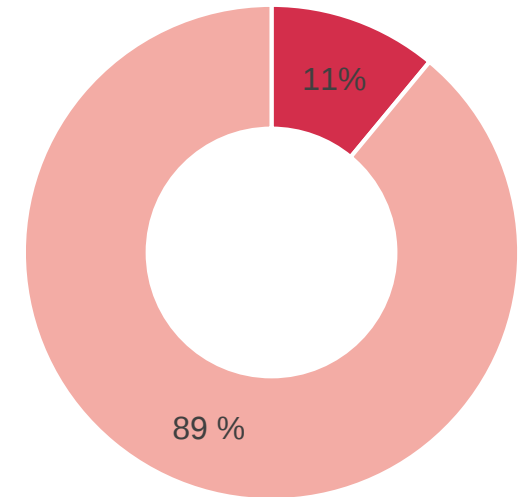
■ supply ■ demand

Dialysis Machines



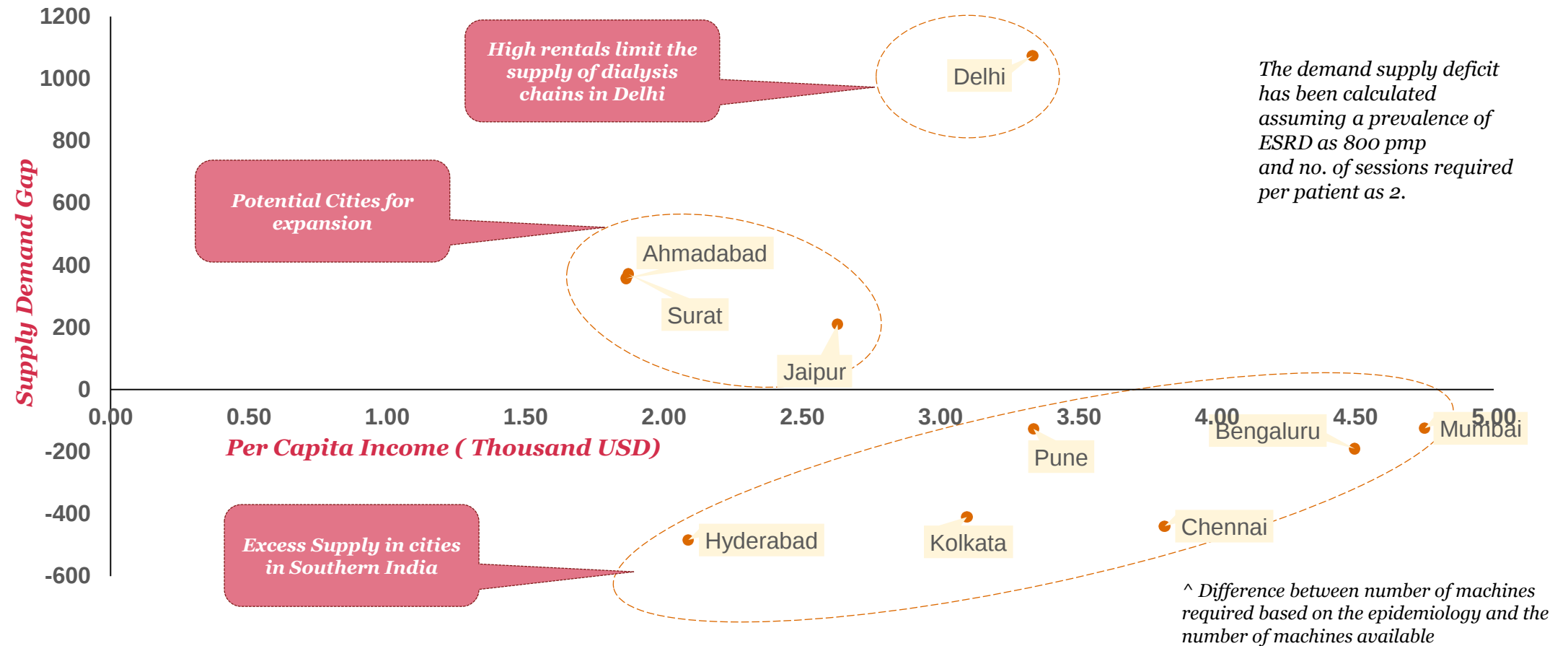
■ supply ■ demand

Revenue Generation

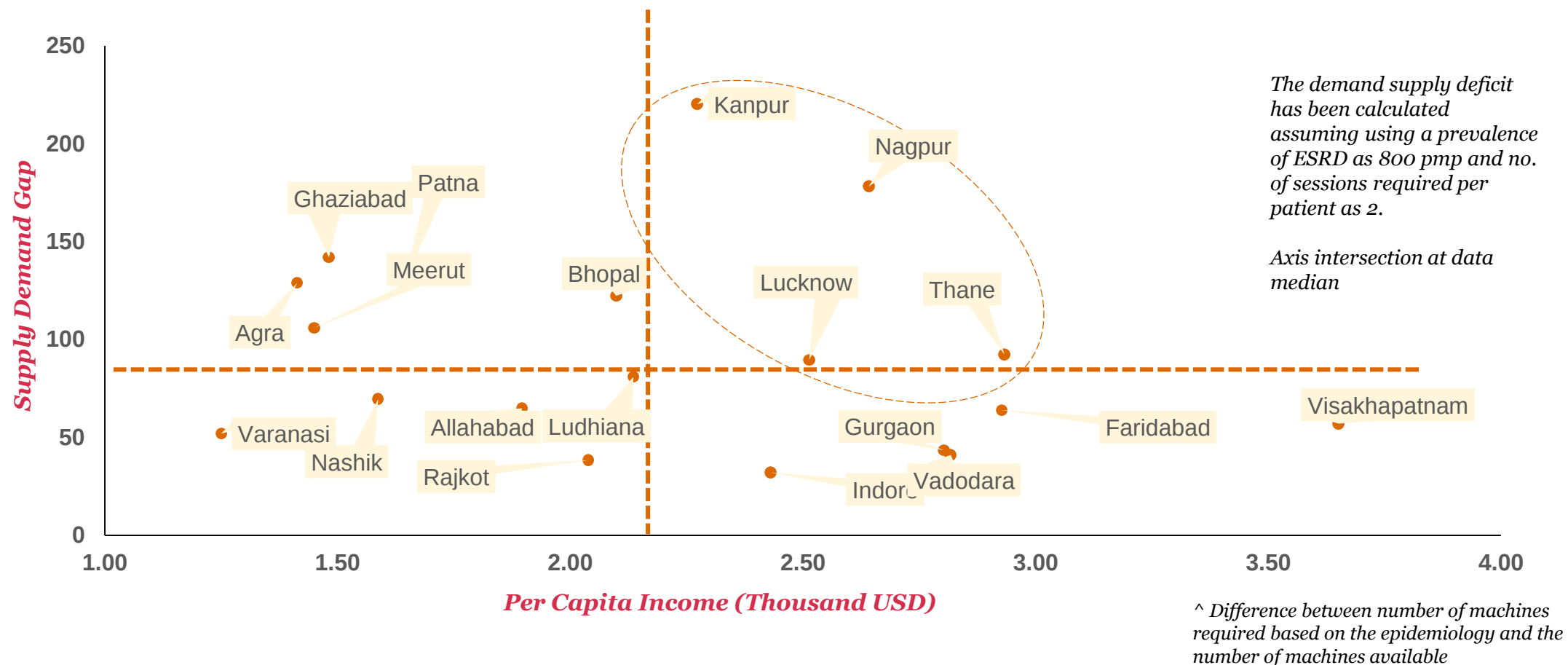


■ actual ■ forecast

Recommendation: Amongst the top 10 cities in India by population, cities in Southern India have an excess supply



Kanpur, Nagpur, Lucknow and Thane are best suited for expansion in next top 20 cities of India



Conclusion: the total investment can be recovered within 2 years of successfully running of a dialysis center, which makes it a win win situation

Requirements	Cost
Consumables	Rs 350
Electricity	Rs 50
Water, telephone, Insurance	Rs10
Annual Maintenance - dialysis machine RO plant, premises	Rs 20
Repairs & wear & tear	Rs 20
Depreciation	Rs 100
Honorarium to nephrologist	Rs 100-200
Staff Salary	Rs 100-200
Total	Rs 750-950

Essentials	Cost
Hemodialysis machine	Rs 6,00,000 (depends on the brand)
Reverse Osmosis Water Treatment Plant	Rs 1,00,000 (depends on the brand)
Electrical wiring, plumbing and miscellaneous	Rs 1,00,000
Other expenses	Rs 50,000
Total	Rs 8,50,000

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Thank you