

## Appendix I      Reference Tables

**Table3.1 Hospital-Based HD Centers in Lebanon / Registry Participation & Analysis Eligibility**

Region	Hospital	# HD Pats*	# Pats in Registry*	# Pats Analyzed This Report*	Status of Data Completion As of June 2 <sup>nd</sup> , 2012
<b>BEIRUT</b>	Rafik Hariiri University Hospital	148	151	76	Complete Entry
	American University of Beirut MC	83	0	0	Not in Registry
	Geitaoui	48	63	0	Partial
	Beirut General	13	10	0	Partial
	University Medical Center /Rizk	58	69	66	Complete Entry
	Saint George (Roum)	66	73	0	Partial
	Makassed	79	64	1	Partial
	Hotel Dieu	78	84	1	Partial
<b>MOUNT LEBANON</b>	Abou-Jaoude	17	17	0	Partial
	Ain Wzain	61	100	68	Complete Entry
	Bahman	59	51	45	Complete Entry
	Beit Shabab	42	7	2	Partial
	Central	22	24	18	Complete Entry
	El-Hayat	29	26	16	Partial
	El-Shahar Algharbi	14	14	5	Partial
	Haroun	48	21	1	Partial
	Hayek	35	16	15	Partial
	Jabal Lubnan	78	0	0	Not in Registry
	Lebanese Canadian	55	42	0	Partial
	Levant (Al-Mashrik)	82	1	0	Trained – No Entries
	Middle East Institute of Health	31	32	32	Complete Entry
	Notre Dame De Liban	69	3	1	Trained – No Entries
	Notre Dame De Maritime	37	51	44	Complete Entry
	Notre Dame De Secours	66	68	9	Partial
	Rassoul Al-Aazam	54	62	54	Complete Entry
	Sacre Couer	64	62	2	Partial
	Sahel	43	49	1	Partial
	Samir Serhal	29	37	37	Complete Entry
	Saint George - Ajaltoun	62	63	55	Complete Entry
	Saint Joseph	81	81	79	Complete Entry
	Saint Louis - Jounieh	37	3	0	Trained – No Entries
Saint Therese	50	29	4	Partial	
Siblin	12	13	11	Complete Entry	
Zahraa	59	82	70	Complete Entry	
<b>NORTH</b>	Akkar Rahhal	41	57	51	Complete Entry
	Batroun	25	31	28	Complete Entry
	Center Hopitalier du Nord (CHN)	95	112	18	Partial
	Dar Al-Shifaa	35	39	11	Partial
	Islami	178	212	192	Complete Entry
	Koura	40	39	35	Complete Entry
	El-Nini	79	88	85	Complete Entry
	Al-Salam	19	24	24	Complete Entry
	Savdet Zgharta	40	45	43	Complete Entry
	Al-Youssef	76	96	89	Complete Entry
	Seer Government Hospital	8	0	0	Entry in Progress

	Tannourine	5	1	0	Partial
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**Table3.1 (Continued)**

<b>Region</b>	<b>Hospital</b>	<b># HD Pats</b>	<b># Pats in Registry*</b>	<b># Pats Analyzed This Report*</b>	<b>Status of Data Completion As of June 2<sup>nd</sup>, 2012</b>
<b>SOUTH</b>	Bent Jbeil Governmental	0	0	0	No Patients Yet
	Dallaa'	17	17	17	Complete Entry
	Hammoud	159	224	184	Complete Entry
	Jabal Amel	70	100	87	Complete Entry
	Janoub (Chae'ib)	45	55	46	Complete Entry
	Labib Abou Dahr	64	61	1	Partial
	Lebanese Italian	18	21	12	Complete Entry
	Marjeyoun	31	33	21	Complete Entry
	Nabatiyeh Governmental	35	63	54	Complete Entry
	Najdeh Al-Cha'biyeh	18	26	2	Partial
	Saida Governmental	0	0	0	No Patients Yet
<b>BEKAA</b>	Bekaa	29	28	11	Complete Entry
	Dar Al-Amal	86	75	69	Partial
	Hamed Farhat	37	41	23	Partial
	Hermel Governmental	13	12	11	Complete Entry
	Elias Hrawi (Zahle Gov)	20	33	3	Partial
	Khoury General	39	54	49	Complete Entry
	Al-Rayan	20	27	22	Complete Entry
	Riyak	35	45	41	Complete Entry
	Tel Shiha	5	0	0	No Patients Yet
<b>OTHER</b>	Military Hospital – Beirut	38	0	0	Lebanese Army Only Registry In Progress
	Hamshari Hospital - Saida	56	0	0	Palestinian Red Crescent Registry In Progress

- ❖ Numbers in HD unit & registry are as of November 30, 2012 / #s analyzed are through June 2, 2012.
- Number in the registry is since inception, includes living, diseased, stopped dialysis or transplanted.
- Numbers in the HD unit are active living patients only.

**Summary Table**

	<b>Lebanon</b>	<b>Beirut</b>	<b>Beqaa</b>	<b>Mt Lebanon</b>	<b>North</b>	<b>South</b>	<b>Other</b>
<b># HD Units</b>	<b>66</b>	<b>8</b>	<b>9</b>	<b>26</b>	<b>12</b>	<b>11</b>	<b>2</b>
<b># Active Patients</b>	<b>3191</b>	<b>573</b>	<b>284</b>	<b>1236</b>	<b>641</b>	<b>457</b>	<b>94</b>
<b># Patients in Registry</b>	<b>3128</b>	<b>515</b>	<b>315</b>	<b>954</b>	<b>744</b>	<b>600</b>	<b>0</b>
<b># Analyzed this Report</b>	<b>1938</b>	<b>143</b>	<b>228</b>	<b>568</b>	<b>576</b>	<b>423</b>	<b>0</b>

**Table 4.1 Age Patterns of HD Patients in Lebanon by Patient Category and Region (%)**

Parameter	Statistic	Overall	Patient Category		Region of Lebanon				
			Incident	Prevalent	Beirut	Bekaa	MtLeb	North	South
Age at Start of Dialysis	Mean	55.0	60.9	52.6	57.8	52.0	59.4	49.9	56.4
	SD	17.7	15.7	17.9	15.9	16.8	16.4	18.9	16.8
	Minimum	6	13	6	11	14	12	6	7
	5 <sup>th</sup> Percentile	21	29	19	26	20	29	15	24
	25 <sup>th</sup> Percentile	44	52	40	48	42	48	37	45
	50 <sup>th</sup> Percentile (Median)	57	63	54	62	54	62	53	59
	75 <sup>th</sup> Percentile	68	73	67	71	66	72	65	69
	95 <sup>th</sup> Percentile	80	82	79	79	75	82	77	81
	Maximum	93	91	93	82	91	93	88	88
Age of Patients on June 2, 2012 (Report cut-off date)	Mean	59.4	61.2	58.7	62.2	55.5	63.3	55.9	59.7
	SD	16.2	15.8	16.2	15.3	16.0	15.3	16.7	15.7
	Minimum	7	14	7	13	16	14	10	7
	5 <sup>th</sup> Percentile	29	28	29	33	23	35	24	29
	25 <sup>th</sup> Percentile	49	53	48	52	47	54	45	49
	50 <sup>th</sup> Percentile (Median)	62	64	60	64	57	65	57	62
	75 <sup>th</sup> Percentile	72	73	72	75	68	75	69	72
	95 <sup>th</sup> Percentile	83	83	82	83	78	85	80	82
	Maximum	93	93	93	87	93	93	88	89
Age at mortality (Years)	Mean	66.7	67.4	66.6	68.2	63.5	69.4	66.6	65.4
	SD	13.8	14.4	13.5	11.0	11.8	13.4	13.3	15.1
	Minimum	24	24	32	41	35	37	35	24
	5 <sup>th</sup> Percentile	41	35	41	41	35	42	41	35
	25 <sup>th</sup> Percentile	59	61	57	62	58	62	57	57
	50 <sup>th</sup> Percentile (Median)	70	69	70	70	67	74	70	68
	75 <sup>th</sup> Percentile	77	78	77	75	73	79	78	77
	95 <sup>th</sup> Percentile	85	88	84	-	-	87	84	87
	Maximum	95	88	95	80	76	95	89	90
Survival after start of HD (Months)  (In patients who died)	Mean	56.5	5.8	72.1					
	SD	58.5	4	59					
	Minimum	0.5	0.5	11.2					
	5 <sup>th</sup> Percentile	1.6	0.8	16.2					
	10 <sup>th</sup> Percentile	3.5	1.3	20.6					
	25 <sup>th</sup> Percentile	14	2	28.3					
	50 <sup>th</sup> Percentile (Median)	37	5	48					
	75 <sup>th</sup> Percentile	80	9	96					
	90 <sup>th</sup> Percentile	151	12	167					
	95 <sup>th</sup> Percentile	197	15	203					
	Maximum	267	16	314					

**Table 4.2 Demographic Profile of HD Patients in Lebanon by Patient Category and Region (%)**

Parameter	Detail	Overall	Patient Category		Region of Lebanon (Overall)				
			Incident	Prevalent	Beirut	Bekaa	MtLeb	North	South
Patient Category	Incident (Start >1/11/2010)	28.7	-	-	26.5	31.1	32.8	21.6	32.3
	Preval (Start <1/11/2010)	71.3	-	-	73.5	68.9	67.2	78.4	67.7
Gender	Female	43.0	46.2	42.0	41.9	33.0	42.9	44.5	46.5
Education	Illiterate	23.4	22.0	24.0	14.7	14.1	19.8	30.5	25.4
	Read & Write / Elementary	42.0	44.3	41.0	42.0	29.6	34.8	47.9	49.1
	Intermediate / Vocational	10.2	10.6	9.9	9.6	16.0	10.5	6.3	9.6
	Secondary	12.6	11.6	13.0	11.8	9.3	20.8	9.2	10.5
	University / Post-graduate	8.2	6.8	8.8	20.6	6.3	11.8	5.0	5.2
	Missing	3.7	4.7	3.3	1.5	24.8	2.5	1.2	0.2
Living Situation	With Others	94.6	93.4	95.1	97.8	94.7	93.9	96.0	92.3
	Alone	4.2	4.7	4.0	1.5	3.9	4.0	3.0	7.5
	Missing	1.1	1.9	0.8	0.7	1.5	2.2	1.1	0.2
Marital Status	Married	73.5	82.0	70.0	71.3	73.8	75.1	70.6	74.6
	Single	17.9	13.1	19.9	11.8	22.8	14.8	23.1	16.2
	Widowed	6.1	3.2	7.2	14.0	0.5	7.6	3.3	7.5
	Divorced / Separated	2.0	0.8	2.5	2.9	1.9	2.0	2.5	1.2
	Other	0.5	1.0	0.3	0	1.0	0.5	0.6	0.5
Working Status	Working	23.6	20.6	24.8	27.2	22.8	24.1	22.9	23.2
	Not Working	58.5	58.9	58.3	49.3	51.5	58.9	60.4	61.0
	Housewife	14.7	17.0	13.7	17.6	17.0	14.1	14.6	12.9
	Student	1.4	1.7	1.3	1.5	1.5	1.3	1.6	1.6
	Other	1.9	1.7	1.9	4.4	7.2	1.6	0.6	1.1
Insurance Coverage	MOPH	55.9	-	-	52.2	54.4	48.3	61.4	60.3
	NSSF	24.9	-	-	32.4	18.4	35.5	16.4	23.0
	Army	8.6	-	-	0	15.0	6.8	12.3	5.6
	Employees Mutuality	4.0	-	-	10.3	3.4	4.9	1.4	4.7
	Internal Security Force	3.1	-	-	0.7	3.4	2.2	3.9	4.0
	Private / Self	0.8	-	-	1.5	1.0	0.7	0.2	1.4
	Other	2.0	-	-	2.9	1.0	0.7	4.2	0.9
	Missing	0.7	-	-	0	3.4	0.9	0.2	0.0

**Table 4.3 Risk Profile of HD Patients in Lebanon by Patient Category and Region (%)**

Parameter	Statistic	Overall	Patient Category		Region of Lebanon					
			Incident	Prevalent	Beirut	Bekaa	MtLeb	North	South	
<b>Smoking Status (% of Pats)</b>	NO	63.6	66.4	62.5	56.7	64.0	60.8	65.9	66.7	
	Yes, Current	24.1	19.8	25.8	26.1	18.8	22.3	26.2	25.1	
	Yes, Past Only	13.8	11.7	12.3	17.2	17.3	16.9	7.9	8.1	
<b># Years Smoking</b>	Mean		23.6	23.3	26.6	22.1	24.3	21.7	23.6	
	SD		13.3	12.7	11.1	14.2	12.5	11.7	14.3	
	25 <sup>th</sup> Percentile		15	15	20	10	15	15	12	
	50 <sup>th</sup> Percentile (Median)		20	20	25	20	20	20	20	
	75 <sup>th</sup> Percentile		30	30	35	30	30	30	32	
<b># Cigarettes per Day</b>	Mean		19.7	18.7	18.7	21.5	18.2	16.9	20.6	
	SD		17.1	15.9	17.0	21.6	14.7	13.9	16.7	
	25 <sup>th</sup> Percentile		10	8	4.5	6	8.5	5	10	
	50 <sup>th</sup> Percentile (Median)		20	20	20	20	20	15	20	
	75 <sup>th</sup> Percentile		24	20	21	30	20	20	25	
<b>Consanguinity</b>	Yes	#	350	92	258	20	29	89	109	102
		%	19.7	18.7	20.2	16.7	19.2	17.3	19.2	23.9
	# in family with CKD	Mean	1.64	1.70	1.61	1.59	1.62	1.95	1.47	1.61
		SD	0.97	1.15	0.90	0.87	1.06	1.23	0.88	0.80
		Maximum	6	6	6	3	6	6	6	5
	Degree of Relation (% of Pats)	Primary	68.4	59.6	72.0	84.2	58.6	79.8	66.7	60.8
		Secondary	22.1	27.0	19.5	10.8	34.5	15.5	18.1	30.4
Distant		9.4	13.5	8.5	5.3	6.9	4.8	15.2	8.8	

**Table 5.1 Clinical Profile at Dialysis Initiation by Patient Category and Region**

Parameter	Category	Overall	Patient Category		Region of Lebanon					
			Incident	Prevalent	Beirut	Bekaa	MtLeb	North	South	
Primary Cause of ESRD	Diabetes	29.2%	32.0%	27.0%	22.2%	36.8%	31.7%	25.4%	26.0%	
	Glomerulonephritis	15.8%	11.0%	17.8%	5.9%	15.9%	10.1%	28.0%	10.4%	
	Hypertension	19.6%	25.6%	17.2%	9.6%	23.4%	15.9%	12.0%	35.5%	
	Other Kidney Disease	17.6%	13.4%	19.3%	17.0%	8.5%	18.3%	20.6%	16.5%	
	Other Non-Kidney Disease	2.8%	4.4%	2.1%	5.2%	0.0%	2.2%	3.8%	2.6%	
	Polycystic Kidney Disease	4.0%	4.0%	4.0%	3.7%	4.5%	5.2%	2.9%	4.3%	
	Lupus Nephritis	0.7%	0.4%	0.8%	0.7%	1.5%	0.4%	1.1%	0.0%	
Unknown / Missing	11.0%	9.3%	11.8%	35.5%	9.5%	16.3%	6.2%	4.7%		
Seen by Nephrologist Prior to Dialysis	Yes	69.1%	72.2%	67.9%	81.5%	77.1%	59.4%	67.0%	74.9%	
	# of times last yr.	1-2	27.2%	27.9%	26.8%	12.8%	45.9%	31.4%	30.6%	15.6%
		3-6	43.6%	47.1%	41.7%	57.4%	45.0%	48.4%	41.4%	38.7%
		>6	29.2%	25.0%	31.5%	29.8%	9.2%	20.2%	28.0%	45.7%
	Last time seen (mons)	≤1	22.3%	26.6%	20.2%	14.5%	39.0%	32.9%	16.1%	11.9%
		3-6	18.0%	17.9%	18.0%	10.9%	10.5%	18.1%	22.3%	18.8%
>6		59.8%	55.5%	61.9%	74.5%	50.5%	49.0%	61.6%	69.2%	
Viral Exposure	HepB Positive	2.2%	1.7%	2.4%	2.2%	3.5%	1.8%	1.8%	2.6%	
	HepC Positive	5.72%	1.89%	7.26%	5.19%	5.47%	4.43%	6.63%	6.15%	
	HIV Positive	0.2%	0.4%	0.2%	0.0%	0.0%	0.2%	0.2%	0.5%	
Comorbidity	Heart Disease	35.8%	36.7%	35.4%	48.9%	20.9%	38.9%	40.5%	27.9%	
	Cancer	1.9%	3.6%	1.2%	0.7%	2.5%	2.8%	1.4%	1.4%	
	Diabetes	29.2%	35.4%	25.3%	30.4%	21.9%	31.7%	22.4%	33.1%	
	Hypertension	57.8%	65.0%	54.9%	69.6%	41.3%	55.9%	53.9%	68.1%	
	Lung Disease	3.8%	4.2%	3.7%	2.2%	2.0%	5.5%	2.5%	4.7%	
First Vascular Access Inserted	AV Fistula	52.5%	47.7%	54.5%	43.0%	60.2%	68.8%	49.1%	34.3%	
	Synthetic Graft	1.2%	1.3%	1.1%	0.0%	2.5%	2.4%	0.2%	0.7%	
	Permanent Catheter	3.8%	6.3%	2.8%	10.4%	2.5%	5.5%	2.7%	1.7%	
	Temporary Catheter	40.2%	41.1%	39.8%	41.5%	28.4%	19.9%	45.5%	63.1%	
	Unknown (Old case)	2.3%	3.6%	1.8%	5.2%	6.5%	3.3%	2.5%	0.2%	
Site of First Vascular Access	Upper Arm	38.1%	37.1%	38.4%	20.7%	33.3%	43.4%	44.8%	28.1%	
	Lower Arm	23.2%	16.7%	25.8%	14.8%	7.5%	30.8%	34.8%	7.8%	
	Thigh	4.2%	5.1%	3.9%	3.7%	15.4%	4.2%	2.9%	0.7%	
	Other	18.3%	24.2%	15.9%	25.2%	1.0%	1.8%	9.9%	55.6%	
	Unknown / Missing	16.2%	16.9%	16.0%	35.6%	42.8%	19.7%	7.7%	7.8%	
VA Used in First Dialysis Session	AV Fistula	30.8%	29.5%	31.2%	34.8%	43.3%	31.4%	32.1%	20.8%	
	Synthetic Graft	0.3%	0.0%	0.5%	0.0%	0.0%	0.4%	0.5%	0.2%	
	Permanent Catheter	4.8%	6.8%	4.0%	9.6%	2.0%	9.0%	3.0%	1.4%	
	Temporary Catheter	56.2%	56.4%	56.1%	46.7%	38.8%	50.0%	54.5%	74.9%	
	Unknown / Missing	7.9%	7.2%	8.3%	8.9%	15.9%	9.2%	9.9%	2.6%	
Body Mass Index	<21	21.1%	18.5%	22.2%	17.2%	25.6%	16.8%	28.2%	17.4%	
	21-25	34.2%	32.8%	34.8%	21.9%	42.3%	33.8%	32.5%	35.1%	
	>25 – 28	20.1%	22.0%	19.3%	28.1%	10.7%	22.1%	19.3%	21.1%	
	>28 – 35	20.6%	21.4%	20.3%	25.0%	19.0%	22.8%	16.9%	21.9%	
	>35 – 40	3.3%	5.1%	2.6%	7.8%	1.8%	3.8%	2.6%	3.5%	
	> 40	0.7%	0.2%	0.8%	0.0%	0.6%	0.6%	0.5%	1.0%	

**Table 5.2 Vital Signs of HD Patients in Lebanon at Their First Dialysis Session (All Patients)**

Parameter	Category	Mean	SD	Percentiles					Min	Max	
				10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>			
Dry Weight (Kg)	-	67.6	15.3	49.0	56.5	67.0	77.5	87.0	33.0	129	
Height (cm)	-	164.0	10.1	150.0	158.0	165.0	170.0	176.0	120.0	195.0	
BMI (kg/m <sup>2</sup> )	-	25.0	4.9	18.9	21.6	24.4	27.8	31.5	13.7	47.4	
Blood Pressure (mmHg)	Pre-Dialysis	Systolic	144.7	25.1	120.0	130.0	140.0	160.0	180.0	70.0	240.0
		Diastolic	78.2	12.6	60.0	70.0	80.0	81.0	90.0	40.0	140.0
	Post Dialysis	Systolic	120.9	20.1	100.0	110.0	120.0	130.0	150.0	60.0	191.0
		Diastolic	67.8	11.3	50.0	60.0	70.0	72.0	80.0	40.0	120.0

**Table 5.3 Laboratory Readings at Time of Their First Dialysis Session by Patient Category**

Lab Parameter	Incident Patients / Statistics							Prevalent Patients / Statistics						
	Mean	SD	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	Min	Max	Mean	SD	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	Min	Max
Hemoglobin (g/dL)	9.6	1.6	8.5	9.7	10.7	5.0	13.8	9.9	1.9	8.6	10	11.3	5.0	15.5
s-Iron	61.3	57.1	33	50.5	72.9	6.2	636	63.8	38.9	38.0	55	75	5.3	280
TIBC	222.6	57.5	187	224.0	254.0	42.0	433.0	244.6	64.7	198.5	236	287	61	462
Ferritin	422	503	126	262	522	2.3	4328	459	487	132	301	631	11.3	3658
TSAT (%)	27.2	20.0	14.6	21.4	33.3	6.4	137.7	27.3	17.9	15.7	23	33.9	4.4	168.9
BUN	146.8	77.3	86.8	147.7	204.8	5.0	296.8	139.5	84.8	72.1	145	209	5.0	300
Creatinine	8.0	2.7	6.1	7.9	9.9	2.5	15.0	9.3	2.8	7.3	9.2	11.3	2.5	15.0
Albumin	3.5	0.6	3.1	3.6	3.9	2.2	5.0	3.7	0.6	3.3	3.7	4.0	2.1	5.5
eGFR (4) (N=1308)	7.1	3.3	4.9	6.3	8.4	2.7	25.7	6.1	3.2	4.2	5.2	6.8	2.5	28.3
eGFR (6) (N=216)	7.5	2.7	5.3	7	9.3	3.8	15.8	6.3	2.9	4.5	5.4	7.4	3.1	19.7
Calcium	8.3	1.3	7.6	8.4	9.0	4.7	15.0	8.5	1.2	7.9	8.6	9.3	4.7	15.6
Phosphorus	5.2	1.5	4	5.1	6.3	2.6	8.5	5.3	1.5	4.2	5.2	6.4	2.6	8.5
Alk. Phosph.	107.9	66.3	67.3	88.5	130.8	1.2	392	118.7	84.2	66.0	97	139	2.7	500
iPTH	418.2	400.2	130	303.5	576.3	3.0	2342	435.7	450.6	111.5	280	598	1.0	2750



**Table 5.4 Levels of Anemia Laboratory Readings in HD Patients in Lebanon at Time of Their First Dialysis Session by Patient Category and Region**

Patient Group	Hb Levels (% Pats)			Ferritin Level (% Pats)				TSAT Level (% Pats)			
	<10	10-12	>12	<100	100-500	501-800	>800	<10	10-20	>20-50	>50
All Patients	51.9	37.4	10.7	20.2	50.0	13.7	16.0	6.5	36.8	48.2	8.5
Incident	60.2	32.5	7.2	18.8	54.5	13.3	13.3	9.2	39.5	42.8	8.6
Prevalent	47.7	39.8	12.4	20.6	48.5	14.0	17.0	5.2	35.7	50.7	8.4
Beirut	60.5	32.5	7.0	34.5	41.4	12.1	12.1	9.1	34.5	45.5	10.9
Bekaa	40.0	44.3	15.7	13.1	47.5	17.2	22.2	Insufficient Readings			
Mt Lebanon	52.7	38.0	9.4	10.5	53.5	23.8	12.2	5.2	25.4	62.7	6.7
North	69.9	26.1	3.9	21.0	53.6	8.7	16.8	8.0	45.9	40.0	7.0
South	34.4	47.4	18.1	25.3	46.0	12.6	16.1	6.2	40.7	44.0	9.0

**Table 5.5 Levels of Select Mineral & Molecular Laboratory Readings in HD Patients in Lebanon at Time of Their First Dialysis Session by Patient Category and Region**

Patient Group	Calcium Level (% Pats)			Phosphorus Level (% Pats)			Albumin (% Pats)			iPTH			
	<8	8-11	>11	<3	3-6	>6	<3.6	3.6-4	>4	<150	150-300	301-800	>800
All Patients	29.5	68.4	2.0	5.9	63.9	30.1	43.8	28.7	27.5	30.1	21.7	33.5	14.7
Incident	34.8	62.8	2.4	4.9	65.8	29.4	49.7	26.6	23.8	29.0	20.6	36.9	13.5
Prevalent	26.6	71.6	1.8	6.5	63.0	30.5	40.8	29.6	29.6	30.4	22.1	32.3	15.2
Beirut	38.0	58.3	3.7	6.5	55.8	37.7	36.2	37.9	25.9	26.6	32.8	23.4	17.2
Bekaa	20.5	76.8	2.7	4.2	68.6	27.1	34.1	26.4	39.6	51.0	17.3	23.5	8.1
Mount Lebanon	26.6	70.7	2.7	5.2	68.8	26	51.1	27.7	21.3	25.9	28.7	37.3	8.0
North	36.5	62.0	1.5	8.7	56.2	35.1	22.7	36.4	40.9	30.5	23.4	33.5	12.7
South	25.3	73.4	1.3	4.2	68.3	27.4	60.8	19.6	19.6	24.9	13.3	37.8	24.1

**Table 5.6 Patients' use of Erythropoietin Stimulating Agent (ESA) or Iron Pre-Dialysis (%)**

Pre-Dialysis Use	All Patients	Incident	Prevalent	Male	Female	Beirut	Bekaa	MtLeb	North	South
ESA	58.1	63.6	55.6	56.9	59.8	44.8	94.5	52.8	68	40.2
Iron Supplement	44.1	48	42	44.9	43.1	41.2	78.1	39.3	48.1	29.9

**Table 5.7 HD Patients with Prior Transplant: Graft Profile & Treatment**

Parameter	Category	Overall	Patient Category		Region of Lebanon						
			Incident	Prevalent	Beirut	Bekaa	MtLeb	North	South		
Pre-Dialysis Failed Transplant (%)	Yes	4.8%	3.2%	5.5%	9.6%	3.0%	4.1%	5.2%	4.7%		
	Donor Type	Living	3.39%	1.90%	3.97%	6.66%	0%	2.21%	3.77%	4.5%	
		Cadaveric	0.33%	0.19%	0.38%	2.22%	0%	0.37%	0.18%	0%	
		Unknown / Missing	1.09%	1.14%	1.07%	0.74%	2.99%	1.48%	1.25%	0.24%	
Pre-Dialysis Failed Transplant (#)	Yes	91	17	74	13	6	22	29	20		
	Donor Type	Living	62	10	52	9	-	12	21	20	
		Cadaveric	6	1	5	3	-	2	1	0	
		Unknown / Missing	23	6	15	1	6	8	7	0	
	Cause of Transplant Loss	Rejection	41	4	37	-	-	-	-	-	
		Infection	8	2	6	-	-	-	-	-	
		Other	21	7	28	-	-	-	-	-	
		Missing	10	4	14	-	-	-	-	-	
	Immuno-Suppression Therapy (#)	Induction Immunosupp	Yes	50	9	50	-	-	-	-	-
			No	32	8	22	-	-	-	-	-
Type		Anti-IL2	3	-	-	-	-	-	-	-	
		Anti-Thymus Globulin	20	-	-	-	-	-	-	-	
		Other	22	-	-	-	-	-	-	-	
		Missing	14	-	-	-	-	-	-	-	
Maintenance Immunosup		Cyclosporin-A	16	0	16	-	-	-	-	-	
		Prograft	12	3	9	-	-	-	-	-	
		MMF/Myfortic	16	4	12	-	-	-	-	-	
		Other	13	2	11	-	-	-	-	-	
Use of Prednisone		Yes	66	56	10	-	-	-	-	-	
		No	25	18	7	-	-	-	-	-	
Country of Graft Surgery (#)		Lebanon	46	-	-	-	-	-	-	-	
	Iraq	10	-	-	-	-	-	-	-		
	Kuwait	4	-	-	-	-	-	-	-		
	Egypt	4	-	-	-	-	-	-	-		
	Other	9	-	-	-	-	-	-	-		
	Missing	18	-	-	-	-	-	-	-		

**Table 6.1 Dialysis Session Practices in HD Patients in Lebanon**

Parameter	Detail	Overall	Patient Category		Region of Lebanon (Overall)				
			Incident	Prevalent	Beirut	Bekaa	MtLeb	North	South
Number of Sessions per Week (% of Pat-months)	1	0.1	-	-	0	0	0.1	0.1	0.1
	2	22	-	-	11.2	19.8	15.0	22.1	30.9
	3	77.2	-	-	86.8	80.2	84.8	77.5	67.5
	4-5	0.6	-	-	2.0	0	0	0	0.1
Duration of Dialysis Session (minutes)	Mean	230	227	230	227	239	224	224	240
	SD	25.3	24	26	23	9	24	32	16
	Median	240	240	240	210	240	240	210	240
	Minimum	96	120	96	120	120	120	96	120
	Maximum	360	300	360	300	240	360	300	320
# of Weekly Dialysis Hours	Mean	10.6	10	11	11	11	11	10	11
	SD	2	2	2	2	2	2	2	2
	Median	11	10	12	11	12	11	11	12
	Minimum	3	4	3	6	4	3	4	4
	Maximum	20	17	20	16	12	18	16	20
How Long on Dialysis  % of Pat-months	< 3 months	18.1%	-	-	21.2%	18.5%	22.3%	12.4%	20.6%
	3 – 12 months	13.2%	-	-	9.9%	17.0%	16.7%	8.8%	14.3%
	1 – 3 years	23.9%	-	-	16.4%	27.6%	22.8%	23.0%	25.6%
	>3 – 5 years	14.6%	-	-	19.4%	14.6%	14.6%	15.0%	13.4%
	>5 years	30.3%	-	-	33.1%	22.3%	23.6%	40.8%	26.1%
	Mean	58.6	3	66	62	45	46	76	53
	SD	61.3	2	62	54	47	45	73	57
	Median	38	3	45	47	30	32	50	32
	Minimum	1	1	7	1	1	1	1	1
	Maximum	372	6	372	258	237	364	372	366
Access Type Maintenance HD (% of Pat-months)	AV Fistula	78.6%	-	-	89.4%	68.9%	67.7%	86.9%	80.5%
	AV Graft	2.4%	-	-	0.8%	0.4%	3.7%	1.0%	3.8%
	<i>Permanent Catheter</i>	4.5%	-	-	2.8%	1.1%	5.3%	5.6%	4.1%
	<i>Temporary Catheter</i>	5.5%	-	-	6.2%	2.9%	4.6%	2.9%	10.3%
	<i>Missing</i>	9.1%	-	-	0.8%	26.7%	18.7%	3.6%	1.3%
Use of Anti-Coagulants (% pat-Months)	Yes	84.9%	-	-	97.5%	71.9%	78.8%	82.2%	96.8%
	No	15.1%	-	-	2.5%	28.1%	21.2%	17.8%	3.2%
	Type								
	Conventional Heparin	61.9%	-	-	94.0%	49.3%	36.5%	65.9%	80.3%
	Low Mol. Wt	17.1%	-	-	2.8%	14.1%	36.2%	15.7%	4.7%
	Anti-Vit K	0	-	-	0	0	0	0	0.1
Other / Not Defined	20.9%	-	-	3.3%	36.6%	27.2%	18.4%	14.9%	

**Table 6.2 Vascular Access Complications in HD Patients in Lebanon**

Parameter	Detail	Overall	Patient Category		Region of Lebanon (Overall)				
			Incident	Prevalent	Beirut	Bekaa	MtLeb	North	South
Vascular Access Complication (% of Pat-months)	Yes	3.4%	-	-	-	-	-	-	-
	<b>TYPE</b>								
	Stenosis	24.6%	-	-	25.7%	0.0%	18.5%	41.5%	16.2%
	Embolism/Thrombosis	36.4%	-	-	48.6%	83.3%	40.5%	33.8%	24.3%
	Infection	13.8%	-	-	17.1%	8.3%	7.1%	7.7%	30.6%
	Cannulation Problem	11.6%	-	-	8.6%	8.3%	17.9%	8.5%	7.2%
	Hemorrhage	2.4%	-	-	0.0%	0.0%	4.2%	1.5%	1.8%
	Recirculation	1.8%	-	-	0.0%	0.0%	4.2%	0.0%	0.9%
	Other	9.4%	-	-	0.0%	0.0%	7.7%	6.9%	18.9%
Type of VA Repair Done (% of Pat-months)	Surgical Repair	33.1%	-	-	-	-	-	-	-
	Replace	20.6%	-	-	-	-	-	-	-
	Thrombolysis	3.3%	-	-	-	-	-	-	-
	Stent	2.2%	-	-	-	-	-	-	-
	Other / Not Defined	35.7%	-	-	-	-	-	-	-
Back to Original Access (%)	Yes	33.8	-	-	20	41.7	36.9	41.5	23.4
	No	66.2	-	-	80	58.3	63.1	58.5	76.6

**Table 6.3 Dialysis Adequacy Parameters in HD Patients in Lebanon by Case Type & Region**

Parameter	Category	Overall	Patient Category		Region of Lebanon					
			Incident	Prevalent	Beirut	Beka a	MtLeb	North	South	
Pre-BUN (mg/dL)	Mean	89.5	94	87.8	82.3	111.9	72.3	113.1	75	
	SD	58.5	58	58.4	53.1	48.8	48.6	74.3	35.1	
	(Median) 50 <sup>th</sup>	77	79.7	76	62	101	67	128	70	
Post-BUN (mg/dL)	Mean	29.4	31.5	28.7	27.6	39.7	22.3	37.5	24.2	
	SD	20.3	20.3	20.2	18.8	16.3	16.6	24.8	12.5	
	(Median) 50 <sup>th</sup>	25	27	25	21	37	20	38	22	
URR	Levels (% of Pats)	<65	38.7	44.6	37.0	30.5	57.6	33.6	38.6	39.2
		65-70	21.6	21.3	21.6	18.6	17.9	25.0	21.3	19.3
		>70	39.7	36.0	41.3	50.9	24.4	41.5	40.1	41.5
		Mean	66.9	65.4	67.4	68.8	62.5	68.2	66.9	66.7
		SD	9.8	10.4	9.6	8.0	10.1	8.6	10.1	10.4
	Percentiles	10 <sup>th</sup>	54.6	53	55	58.7	49.5	57.7	54.0	54.1
		25 <sup>th</sup>	61.1	59	62	64.1	56.1	63.1	60.9	60.6
		(Median) 50 <sup>th</sup>	67.7	66	68	70.2	63.0	68.2	67.6	68.0
		75 <sup>th</sup>	73.7	72	74	74.8	69.7	74.0	74.1	73.8
		Minimum	2.3	2	4	23.7	15.3	14.5	3.6	2.3
		Maximum	98	97	98	84.1	92.8	98.0	96.5	96.8
Kt/V	Reported (% of Pats)	Yes	71.2	70.5	71.7	23.9	87.0	73.6	74.7	72.6
		No	28.8	29.5	28.3	76.1	13.0	26.4	27.47	27.4
	% of pat-mons	<1.2	29	33	27.8	-	-	-	-	-
		1.2-1.6	60.1	57.8	60.8	-	-	-	-	-
		>1.6	10.9	9.2	11.4	-	-	-	-	-
		Mean	1.3	1.3	1.3	1.4	1.2	1.3	1.3	1.3
		SD	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2
	Percentiles	10 <sup>th</sup>	1.0	1.0	1.0	1.1	.8	1.0	1.1	1.0
		25 <sup>th</sup>	1.2	1.1	1.2	1.3	1.0	1.1	1.2	1.2
		(Median) 50 <sup>th</sup>	1.3	1.3	1.3	1.5	1.2	1.3	1.3	1.3
		75 <sup>th</sup>	1.5	1.4	1.5	1.6	1.3	1.4	1.5	1.5
	Minimum	0.5	0.5	0.5	0.7	0.5	0.5	0.6	0.5	
	Maximum	2	2.0	2.0	2	2	2	2	2	
Inter-Dialytic Weight Gain (Kg)	Levels (% of Pats)	<1	3.8	4.9	3.5	3.8	3.6	5.6	3.8	2.5
		1-2	21.2	25.7	20.0	33.6	23.5	25.5	18.1	18.2
		>2 - 4	65.7	59.5	67.5	58.4	60.5	61.3	68.5	69.2
		>4	9.3	10.0	9.1	4.3	12.4	7.6	9.5	10.1
		Mean	2.6	2.5	2.6	2.2	2.6	2.4	2.7	2.6
		SD	1.3	1.4	1.4	1.0	1.3	1.2	1.2	1.4
	Percentiles	10 <sup>th</sup>	1.0	1.0	1.0	1.0	1.0	1.0	1.3	1.0
		25 <sup>th</sup>	1.9	1.5	2.0	1.5	1.7	1.5	2.0	2.0
		(Median) 50 <sup>th</sup>	2.4	2.1	2.5	2.0	2.5	2.0	2.6	2.1
		75 <sup>th</sup>	3.0	3.0	3.0	2.5	3.5	3.0	3.5	3.0
		Minimum	0.5	0.5	0.5	.5	.5	.5	.5	.5
	Maximum	8.0	7.9	8.0	7.4	8.0	8.0	8.0	7.9	

**Table 7.1 Anemia Management Parameters in HD Patients in Lebanon by Case Type & Region**

Parameter	Category	Overall	Patient Category		Region of Lebanon						
			Incident	Prevalent	Beirut	Bekaa	MtLeb	North	South		
Hemoglobin (g/dL)	% Pat-mon	<10	34.8%	40.2%	33.2%	19.6	36.2%	30.9%	44.5%	29.9%	
		10-12	48.3%	45.4%	49.3%	49.5%	43.7%	51.4%	43.2%	52.3%	
		>12 – 14	14.9%	12.8%	15.5%	24.8%	18.0%	15.9%	10.3%	16.6%	
		>14	1.3%	0.4%	1.6%	4.1%	1.1%	1.2%	1.4%	0.9%	
		Missing	0.6%	1.1%	0.5%	2.0%	1.0%	0.6%	0.5%	0.3%	
		Mean	10.5	10.2	10.6	11.2	10.5	10.7	10.1	10.6	
		SD	1.6	1.6	1.6	1.6	1.6	1.5	1.7	1.6	
		Percentiles	5 <sup>th</sup>	7.7	7.4	7.9	8.5	8.0	8.2	7.2	8.0
			25 <sup>th</sup>	9.4	9.2	9.6	10.2	9.5	9.7	9.0	9.7
			(Median) 50 <sup>th</sup>	10.5	10.3	10.6	11.2	10.4	10.7	10.1	10.7
			75 <sup>th</sup>	11.6	11.4	11.6	12.2	11.7	11.7	11.2	11.7
			95 <sup>th</sup>	13.1	12.8	13.2	14.0	13.1	13.1	12.9	13.0
			Maximum	17.3	15.3	17.3	15.3	17.3	16.7	16.7	16.3
Serum Iron (mg/dL)		Mean	49.0	47.7	48.9	41.0	43.5	52.7	48.2	47.6	
		SD	25.2	24.1	25.5	19.2	18.7	28.0	24.3	24.9	
		Percentiles	25 <sup>th</sup>	30.1	30.1	30.1	26.3	29.7	34.5	28.1	29.0
			(Median) 50 <sup>th</sup>	46.0	45.1	46.0	34.2	42.3	48.4	46.1	44.1
			75 <sup>th</sup>	63.2	62.2	64.0	56.1	58.1	66.1	63.2	61.0
			Minimum	6.0	6.0	6.0	15.2	6.0	6.0	7.0	6.0
			Maximum	198.0	154.5	198.0	83.2	83.7	198.0	181.2	174.0
TIBC (mg/dL)		Mean	212	216	211	215	197	216	217	207	
		SD	59	53	60	52	85	51	59	64	
		Percentiles	25 <sup>th</sup>	182	192	178	191	146	187	178	170
			(Median) 50 <sup>th</sup>	215	224	214	213	192	215	221	214
			75 <sup>th</sup>	251	250	251	240	262	247	258	254
			Minimum	35	60	35	62	37	35	39	60
		Maximum	389	389	360	336	334	350	360	389	
Ferritin (ng/mL)		Mean	1288	993	1366	2201	1486	1440	1184	1021	
		SD	1134	926	1170	1630	1184	1046	1046	1158	
		Percentiles	25 <sup>th</sup>	386	319	418	451	452	554	369	166
			(Median) 50 <sup>th</sup>	922	662	1013	2375	1119	1179	904	542
			75 <sup>th</sup>	2010	1484	2165	3371	2650	2247	1713	1647
			Minimum	2	2	5	27	29	36	5	2
		Maximum	6886	4712	6886	6886	4418	4675	5244	5845	
Transferrin Saturation (%)		Mean	24.7	23	25	20.4	28.4	25.9	22.2	26.0	
		SD	16.4	14	17	12.1	26.2	16.5	13.8	17.7	
		Percentiles	25 <sup>th</sup>	14	13	14	11.8	13.0	15.3	13.2	14.2
			(Median) 50 <sup>th</sup>	20.7	19	21	16.6	18.5	23.5	20.0	20.6
			75 <sup>th</sup>	30.8	30	31	28.0	29.1	31.5	27.9	33.9
			Maximum	117	106	117	5.8	2.1	5.3	0.1	4.6

**Table 7.2 Dosing Patterns of Erythropoetin and Iron by HD Patients in Lebanon Overall and by Region**

Supplement for	Statistic	Overall	Patient Category		Region of Lebanon				
			Incident	Prevalent	Beirut	Bekaa	MtLeb	North	South
Erythropoetin Stimulating Agent (IU/Week)	Mean	6802	7061	6722	4547	6586	6225	6506	7979
	SD	3483	3334	3525	3199	3185	3297	3660	3119
	Percentiles 25 <sup>th</sup>	4000	4000	4000	2000	4000	4000	4000	6000
	(Median) 50 <sup>th</sup>	8000	8000	4000	4000	6000	4000	6000	8000
	75 <sup>th</sup>	8000	8000	4000	4000	8000	8000	8000	8000
	Minimum	400	8000	6000	400	400	400	400	400
	Maximum	60000	8000	8000	24000	16000	30000	60000	40000
Intravenous Iron (mg/month)	Mean	259	253	262	252	687	220	216	234
	SD	200	147	216	138	395	127	120	105
	Percentiles 25 <sup>th</sup>	100	175	100	100	400	100	100	200
	(Median) 50 <sup>th</sup>	200	200	200	200	400	200	200	200
	75 <sup>th</sup>	400	400	400	400	1200	400	300	300
	Minimum	1	4	1	1	100	1	1	1
	Maximum	1200	1200	1200	1000	1200	1200	800	800

**Table 7.3 Use of Erythropoetin and Iron by HD Patients in Lebanon Overall and by Region**

Category	Detail	Proportion of Patient (%)						Proportion of Patient-Months (%)					
		ALL	Beirut	Bekaa	MLeb	North	South	ALL	Beirut	Bekaa	MLeb	North	South
<b>Erythropoetin Stimulating Agent (ESA)</b>	Yes	92.9	92.6	92.1	84.8	98.3	97	88.4	77.1	62.5	89.3	93.7	92.1
	<b>Type:</b> Eprex	14.5	20.7	50.8	31.3	6.7	2.5						
	Epotin	70	65.2	44.9	57.4	63.3	93.1						
	Hemax	11.8	9.9	2.4	8.6	22.7	3.7						
	Mircera	0.2	0	0.8	0	0	0.4						
	Darbepoetin	0	0	0	0.2	0	0						
	Other	3.5	4.2	1	2.6	7.2	0.4						
<b>Oral Iron</b>	Yes	26.5	5.9	53.6	15.9	24.6	40.5	19.1	3.4	20.7	8.9	17.5	30.6
	<b>Type:</b> Orofer	8.6	0	10.6	0.4	5.4	21.6	-	-	-	-	-	-
	FeGluconate	2.3	0	2.3	3.3	3.4	0.4	-	-	-	-	-	-
	Not Defined	4.5	1.6	5.1	2.5	5.3	6.0	-	-	-	-	-	-
<b>IV Iron</b>	Yes	76.5	75.4	76.4	69.1	84.1	76.3	58.7	55	44.9	68.4	60.5	54.6

**Table 8.1 Mineral Balance Parameters in HD Patients in Lebanon by Case Type & Region (%)**

Parameter	Category	Overall	Patient Category		Region of Lebanon				
			Incident	Prevalent	Beirut	Bekaa	MtLeb	North	South
Calcium (mg/dL)	<8	19.1	23.9	17.8	8.3	17.3	11.5	27.8	20.0
	8-11	79.7	63.2	74.7	81.8	81.0	88.0	70.4	78.9
	>11	1.2	2.0	1.4	1.2	1.7	0.5	1.8	1.1
	Mean	8.7	8.5	8.7	9.3	8.8	8.9	8.4	8.6
	SD	1.2	1.2	1.2	1.0	1.0	0.9	1.6	0.9
	Percentiles 10 <sup>th</sup>	7.4	7.2	7.4	8.0	7.6	7.8	5.9	7.5
	25 <sup>th</sup>	8.2	.0	8.2	8.8	8.2	8.4	7.8	8.1
	(Median) 50 <sup>th</sup>	8.8	8.6	8.8	9.4	8.8	8.9	8.7	8.6
	75 <sup>th</sup>	9.3	9.1	9.4	9.9	9.3	9.5	9.3	9.1
	Minimum	4.5	4.6	4.5	5.5	4.8	4.6	4.5	5.0
	Maximum	17.8	17.8	17.8	13.0	12.9	17.6	17.8	14.4
Phosphorus (mg/dL)	<3	10	8.2	10.6	9.7	10.3	8.3	13.3	8.3
	3-6	65.1	66.6	64.7	73.2	65.4	66.9	59.8	67.5
	>6	24.8	25.2	24.7	17	24.3	24.7	26.9	24.2
	Mean	4.9	5	4.9	4.6	4.9	5	4.9	4.9
	SD	1.4	1.4	1.4	1.3	1.4	1.4	1.5	1.4
	Percentiles 10 <sup>th</sup>	3	3.1	2.9	3	3	3.1	2.8	3
	25 <sup>th</sup>	3.8	3.9	3.8	3.5	3.9	3.9	3.7	3.9
	(Median) 50 <sup>th</sup>	4.9	5	4.8	4.4	4.8	4.9	5	4.9
	75 <sup>th</sup>	6	6	6	5.5	5.9	6	6	6
	90 <sup>th</sup>	6.9	6.9	6.9	6.5	6.9	6.9	6.9	6.9
	Minimum	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Maximum	8.5	8.4	8.5	7.8	7.7	8.5	8.4	8.5	
Potassium (mg/dL)	Mean	5.4	5.2	5.4	5.3	5.2	5.3	5.5	5.5
	SD	0.9	0.9	0.9	0.8	1.0	0.8	1.0	1.0
	Percentiles 10 <sup>th</sup>	4.2	4.0	4.3	4.3	4.0	4.2	4.2	4.2
	25 <sup>th</sup>	4.8	4.5	4.8	4.8	4.5	4.7	4.9	4.8
	(Median) 50 <sup>th</sup>	5.4	5.1	5.4	5.3	5.1	5.2	5.5	5.5
	75 <sup>th</sup>	6.0	5.8	6.0	5.9	5.8	5.8	6.1	6.1
	90 <sup>th</sup>	6.5	6.4	6.6	6.3	6.4	6.4	6.7	6.7
	Minimum	2.5	2.6	2.5	2.6	2.6	2.5	2.7	2.6
Maximum	9.9	9.1	9.9	8.1	9.3	9.5	9.9	9.7	



**Table 8.2 Molecular Balance Parameters in HD Patients in Lebanon by Case Type & Region (%)**

Parameter	Category	Overall	Patient Category		Region of Lebanon					
			Incident	Prevalent	Beirut	Bekaa	MtLeb	North	South	
Albumin (mg/dL)	<3.6	27.5	36.0	25.4	8.7	32.9	20.9	26.0	65.3	
	3.6-3.9	32.3	32.8	32.1	32.7	31.5	35.8	38.5	7.0	
	≥ 4	40.2	31.2	42.4	58.6	35.6	43.3	35.5	27.6	
	Mean	3.8	3.7	3.8	4.1	3.7	3.8	3.8	3.5	
	SD	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.5	
	Percentiles	10 <sup>th</sup>	3.2	3.1	3.2	3.6	3.0	3.3	3.3	3.0
		25 <sup>th</sup>	3.5	3.4	3.6	3.8	3.4	3.6	3.6	3.0
	(Median)	50 <sup>th</sup>	3.9	3.7	3.9	4.1	3.7	3.9	3.8	3.3
		75 <sup>th</sup>	4.1	4.0	4.1	4.2	4.1	4.1	4.1	4.0
		Minimum	2.1	2.2	2.1	2.6	2.1	2.3	2.6	2.4
		Maximum	5.9	5.8	5.9	5.9	5.0	5.2	5.1	5.0
	Intact PTH (mg/dL)	<150	35.6	36.2	35.1	50.0	45.7	32.1	40.6	26.2
150-300		22.7	22.5	22.8	23.1	24.3	24.1	24.4	18.0	
301-500		17.4	20.7	16.5	12.0	15.2	20.1	11.3	22.2	
501-800		11.8	13.4	11.2	7.4	8.1	10.0	12.1	17.0	
>800		12.6	7.3	14.4	7.4	6.7	13.6	11.5	16.7	
Mean		375.9	324.5	428	269.7	277.5	382.7	354.6	467.8	
SD		417	313.5	590	369	323.5	396.5	452.3	444.3	
Percentiles		10 <sup>th</sup>	38.8	39.9	40	29.0	41.1	43.3	10.9	80.2
		25 <sup>th</sup>	98	103	98	56.0	77.3	110	68.6	146
(Median)		50 <sup>th</sup>	235	219	242	150	167.5	256	200	349
		75 <sup>th</sup>	490	456	511	317	359	470	476	613
		90 <sup>th</sup>	911	719	1000	691	623	961	851	1000
	Minimum	0	3.0	0	3.0	6.2	0.5	0	3.0	
	Maximum	2770	1876	2770	2501	2096	2225	2770	2500	
Alkaline Phosphatase (mg/dL)	Mean	114.7	102.5	118.9	104.7	96.1	107.6	127.8	117.9	
	SD	74.9	63.5	77.8	63.1	58.0	67.7	86.0	75.8	
	Percentiles	10 <sup>th</sup>	52.0	47.0	53.0	52.0	47.0	52.0	51.0	54.0
		25 <sup>th</sup>	68.6	63.0	70.9	67.1	61.0	67.0	70.0	72.0
	(Median)	50 <sup>th</sup>	93.0	85.6	95.2	90.0	84.0	89.0	101.0	95.0
		75 <sup>th</sup>	135.0	121.0	139.0	120.70	112.0	124.6	162.5	137.0
		90 <sup>th</sup>	210.0	177.0	218.0	162.0	162.0	185.0	241.0	217.2
		Minimum	0.4	0.4	0.4	4.9	1.3	0.4	1.4	0.4
		Maximum	500	480	500	497	492	493.7	500	500

**Table 9.1 Vital Signs in HD Patients in Lebanon by Case Type & Region**

Parameter	Category	Overall	Patient Category		Region of Lebanon				
			Incident	Prevalent	Beirut	Bekaa	MtLeb	North	South
Pulse Rate (bpm)	Mean	78.6	77.7	78.9	76.7	84	75.5	80.9	77.6
	SD	9.4	9.0	9.4	12.7	9.5	9.5	10.1	5.9
	Percentiles 25 <sup>th</sup>	72	72	73	68	80	68	76	74
	(Median) 50 <sup>th</sup>	78	78	78	77	84	76	80	78
	75 <sup>th</sup>	84	82	84	84	88	80	88	80
	95 <sup>th</sup>	94			98	100	90	99	88
	Minimum	40	44	40	40	49	46	51	54
	Maximum	143	120	143	143	127	121	140	92
Respiratory Rate (bpm)	Mean	18.8	19.1	18.6	20.5	19.6	17.7	18.4	19.5
	SD	2.8	2.8	2.8	2.9	1.4	3.0	2.6	2.7
	Percentiles 25 <sup>th</sup>	17	17	17	20	18	16	17	18
	(Median) 50 <sup>th</sup>	18	20	18	20	20	18	18	20
	75 <sup>th</sup>	20	20	20	22	20	20	20	22
	Minimum	12	12	12	12	17	12	12	12
	Maximum	37	37	34	37	22	26	26	34
Blood Pressure / Pre-Dialysis (mmHg)	<b>Systolic</b> Mean	134.8	136.5	134.3	134.3	141.3	136.4	134.4	131.9
	SD	21	19.1	21.5	26.6	20.1	22.3	21.9	17
	(Median) 50 <sup>th</sup>	130	140	130	135	140	140	130	130
	Minimum	61	70	61	70	90	61	70	70
	Maximum	229	220	229	213	220	225	220	229
	<b>Diastolic</b> Mean	74.6	75.4	74.3	72.6	78.5	76.1	74.8	72
	SD	11.9	11.4	12.0	14.1	10.7	12.7	12.8	9.2
	(Median) 50 <sup>th</sup>	70	75	70	70	80	80	80	70
	Minimum	35	37	35	36	50	35	40	40
	Maximum	150	150	150	146	130	141	150	120
Blood Pressure / Post-Dialysis (mmHg)	<b>Systolic</b> Mean	115.7	118.7	114.8	115.5	122.4	116.6	112.9	116.1
	SD	18.7	18.1	18.7	22.9	17.9	20.3	18.8	15.6
	(Median) 50 <sup>th</sup>	120	120	110	116	120	113	110	120
	Minimum	60	60	60	60	70	60	60	60
	Maximum	200	200	200	190	190	200	200	190
	<b>Diastolic</b> Mean	65.8	67.5	65.2	65.7	70.2	68.3	62.9	65.5
	SD	11.2	11.0	11.2	11.9	8.7	10.9	11.9	10.4
	(Median) 50 <sup>th</sup>	62	70	60	70	70	70	60	60
	Minimum	40	40	40	40	50	40	40	40
	Maximum	140	140	140	110	100	130	140	140

**Table 9.2 Anthropometric Parameters in HD Patients in Lebanon by Case Type & Region (%)**

Parameter	Category	Overall	Patient Category		Region of Lebanon				
			Incident	Prevalent	Beirut	Bekaa	MtLeb	North	South
Body Mass Index (Kg/m <sup>2</sup> )	Mean	25.3	25.5	25.3	25.4	23.9	25.7	25.3	25.4
	SD	9.5	6.4	10.4	4.9	6.4	6.0	14.5	5.9
	Percentiles 10 <sup>th</sup>	19	19.2	18.9	18.4	18.0	19.7	18.4	19.5
	25 <sup>th</sup>	21.6	22.0	21.4	22.4	20.8	22.3	20.8	21.9
	(Median) 50 <sup>th</sup>	24.4	25.0	24.2	25.3	22.9	25.0	24.0	24.6
	75 <sup>th</sup>	27.7	27.9	27.7	28.9	26.1	28.5	26.9	28.3
	90 <sup>th</sup>	31.2	31.3	31.2	32.1	31.2	31.6	30.5	31.3
	Minimum	10.9	13.7	10.8	14.7	14.6	12.6	10.8	13.2
Waist Circumference (cm)	Mean	99.5	98.1	99.8	103.3	99.7	101.4	101.0	98.7
	SD	15.1	14.7	15.2	10.7	13.5	13.9	14.4	15.6
	Percentiles 10 <sup>th</sup>	82	80	82	89.4	86	85	84	80
	25 <sup>th</sup>	90	88	90	97	92	94	93	88
	(Median) 50 <sup>th</sup>	99	98	100	104	98	100	100	99
	75 <sup>th</sup>	108	107	108	110	103	110	110	108
	90 <sup>th</sup>	118	115	119	118	115.7	118	119	118
	Minimum	50	50	50	78	67	50	50	50
	Maximum	170	164	170	128	146	155	170	170
% Body Fat	Mean	24.8	23.1	25.3	29.8	25.2	24.7	26.1	24.3
	SD	10.8	9.5	11.1	9.0	8.9	10.6	9.9	11.3
	Percentiles 10 <sup>th</sup>	11.8	11.8	11.8	20.2	12.9	12.1	12.6	11.3
	25 <sup>th</sup>	15.4	13.6	16.1	24	17.2	15.9	18.8	14.6
	(Median) 50 <sup>th</sup>	23.5	21.9	23.9	28	25	22.6	24.8	21.7
	75 <sup>th</sup>	31.8	31.3	32.3	35.8	31.8	32.3	31.9	31.7
	90 <sup>th</sup>	40	36.5	41.6	47	36.3	39.1	38.4	40.6
	Minimum	10	10.9	10.0	11.7	10	10	10	10
	Maximum	56.7	54.6	56.7	49.1	48.2	52.7	54.6	56.7
Total Body Water	Mean	35.2	35.5	35.1	35.5	37.3	35.5	34.2	35.2
	SD	6.8	7.0	6.7	6.0	7.0	6.9	6.5	6.7
	Percentiles 10 <sup>th</sup>	27	27.5	26.8	26.8	27.9	27.2	26.6	27.2
	25 <sup>th</sup>	30.3	30.8	30.1	31.4	32.4	30.5	29.6	30.2
	(Median) 50 <sup>th</sup>	34.8	34.7	34.8	35.4	37.2	34.9	34.1	34.7
	75 <sup>th</sup>	39.8	40.3	39.7	40.6	41.8	40.3	38.5	40.0
	90 <sup>th</sup>	43.8	44.5	43.7	43.1	44.9	44.4	42.5	44.0
	Minimum	15.1	15.7	15.1	21.3	22.4	15.8	15.1	16.9
Maximum	70	70.0	69.8	49.6	70	69.6	63.2	64.1	

**Table 10.1 Uses of Medications by HD Patients in Lebanon Overall and by Region**

Category	Detail	Proportion of Patient (%)						Proportion of Patient-Months (%)					
		ALL	Beirut	Bekaa	MLeb	North	South	ALL	Beirut	Bekaa	MLeb	North	South
<b>Oral Phosphate Binders</b>	Yes	88.1	91.0	85.7	86.3	83.5	96.3	83.2	96.4	79.7	88.6	76.3	86.3
	Type: Caltrate	64.0	85.9	16.6	69.5	70.7	65.7	64.0	85.9	16.6	69.5	70.7	65.7
	PhosLo	20.8	9.5	36.6	15.9	16.9	24.8	20.8	9.5	36.6	15.9	16.9	24.8
	Rena Gel	4.9	1.5	3.9	8.1	3.7	4.8	4.9	1.5	3.9	8.1	3.7	4.8
	Not Defined	10.2	3.2	42.9	6.4	8.6	4.7	10.2	3.2	42.9	6.4	8.6	4.7
<b>Vit-D 1α</b>	Yes (Any)	67.3	51.5	60.7	67.6	69.2	71.4	51.8	41	26.5	65.1	55.8	47.2
	Oral	64.3	51.5	52.9	63	66.9	70.3	47.8	40.8	19.2	59.4	50.4	46.8
	IV	13.9	1.5	17.1	15.2	16.6	11.7	6.1	0.3	8.2	9	8	1.9
<b>Other Vitamin-D</b>	Yes	33.9	11.7	36.7	19.3	50.1	39						
<b>Multi-Vitamin</b>	Yes	75.5	67.9	60	82	77.6	72.8						
<b>Anti-Hypertensive</b>	Yes	71.6	64.2	83.6	67.2	67.8	80.3	59.7	56.6	52.8	67.8	57	59.4
	# Types 1	24.2	25.7	19.3	24	23.6	26.4	-	-	-	-	-	-
	2	20.4	19.5	15.3	25.5	20.9	17.6	-	-	-	-	-	-
	≥3	12.3	5.1	18.3	17.1	6.5	13.4	-	-	-	-	-	-
	Not Defined	43.7	55.9	44.9	34.7	49.0	42.8	-	-	-	-	-	-
	Type: ACE-I	19.7	10.5	35	18	20.4	19	89.6	94.5	87.8	83.2	90.4	93
	B-Blocker	46	44.4	42.1	45.6	43.4	51.5	31.1	43.6	19.6	38.6	29.5	29
	Diuretic	23.7	6	63.6	19.6	16.8	30.2	13.7	4.1	34.2	15.3	8.6	13.2
	A-Blocker	10.7	1.5	11.4	8.9	5.7	22	4.2	0.3	5.2	4.8	1.3	7.5
	CaChan-BI	39.8	12.6	48.6	28.6	38.2	62.3	26.3	11.7	27.3	16.8	25.6	36.4
Ang-RB	15.1	3.7	20	17.4	9.3	21.8	9.2	1.8	7.6	15.4	5	11.1	
<b>Diabetes Medications</b>	% diabetics using Insulin	56.5	61.4	57.1	52.7	56.7	59.3	44.9	59.2	27.3	43.8	45.4	48.5
<b>Other Medications (% patients)</b>	Anti-Depress't	11.7	6.2	6.6	15.2	9.4	13.2						
	Anxiolytic	14.5	8.1	21.4	15.4	7.5	21.8						
	Heart Medic (Y)	46.4	43.1	30.9	47.1	38.4	62						
	All Patients Have Heart Dis.	66.7	65.2	55.9	64.3	59.5	88.9						

**Table11.1 Outcomes of HD Patients in Lebanon by Patient Category and Region (%)**

Parameter	Statistic	Overall	Patient Category		Region of Lebanon					
			Incident	Prevalent	Beirut	Bekaa	MtLeb	North	South	
Hospitalization	Yes (≥ Once) - % of Pats.	29.7	34.6	27.8	44.7	14.6	28.3	27.5	33.9	
	# Admissions/Year (% of Pats)	1	13.0	15.1	12.4	18.4	8.8	12.6	10.9	16.0
		2	7.6	11.3	6.2	17.5	4.4	7.1	6.6	7.7
		≥ 3	8.8	8.2	9.2	8.8	1.5	8.6	9.9	10.1
	LOS per Admission (% of Events)	1	13.7	13.7	13.7	25.4	4.4	16.5	23.7	4.9
		2-3	45.4	49.1	43.6	17.9	71.1	30.5	44.4	56
		4-7	27.2	25.3	28.1	23.9	22.2	30	26.7	27.2
		> 7	13.7	11.9	14.6	32.8	2.2	23	5.2	11.9
	<u>Length of Stay (Days)</u>									
	Mean	5.4	5.3	5.4	9.7	3.9	7.3	4	4.7	
	SD	5.9	7.2	5.2	10	4.3	8.2	2.9	4.5	
	Percentiles	25 <sup>th</sup>	2	2	2	3.8	2	3	2	2
		(Median) 50 <sup>th</sup>	3	3	3	7	3	4	3	3
75 <sup>th</sup>		5	5	6	13	4	8	4	5	
Emergency Room (ER) Admissions	Yes (≥ Once) - % of Pats.	7.3	7.1	7.4						
	# Admissions/Year (% of Pats)	1	4.6	4.0	4.6					
		2	1.5	2.1	1.3					
		≥ 3	1.2	0.9	1.3					
	<u>Length of Stay Hours)</u>									
	Mean	4.3	3.4	4.7						
	SD	5.3	0.9	6.3						
	Percentiles	25 <sup>th</sup>	3	3	2					
		(Median) 50 <sup>th</sup>	3	3	3.5					
		75 <sup>th</sup>	4	4	4					
	<u>ER Action (% of all)</u>									
	Admit to Hospital	55								
	Treat / Discharge	30								
Other	15									
Cardiovascular Events	Yes (≥ Once) % of Pats.	7.0	6.1	7.3						
	<u>Type of CV Event</u>									
	(% of All) Angina	35								
	Coronary Artery Block	28								
	Cardiac Arrest	22								
	Heart Failure	12								
Other	23									