

### Supplimentary tables

**Table S1: Self-reported diseases and proportion of people reporting receiving treatment in prior calendar year.**

Variable	Self-reported	Received treatment	Proportion of people receiving treatment (%)
Hypertension (HT)	1435	1,006	70.2
Diabetes (DM)	1009	826	82
Heart disease (HD)	143	109	76.2
Chronic Kidney Disease (CKD)	64	35	54.7
Stroke (ST)	27	10	37
Hypertension & diabetes	629	562	89.3
HT/DM + HD/CKD/ST	400	335	83.8
Total	3,707	2,883	78

**Table S2: Annual mean costs per person (in International dollars) stratified by city, disease, and cost components.**

## # In-patient cost included hospitalisation expenses + medicines purchased during the stay

	Consultation Mean (SE)	Investigations Mean (SE)	Medications Mean (SE)	Travel cost Mean (SE)	In-patient cost Mean (SE)#	Total Direct cost Mean (SE)	Total Out of pocket expenditure Mean (SE)	Indirect costs Mean (SE)	Total economic burden (Direct +Indirect) Mean (SE)
<b>Hypertension (HT)</b>									
Chennai (N=380)	47 (8.)	21 (8.2)	90 (11.6)	10 (1.9)	1 (1.2)	175 (19.7)	173 (19.5)	97 (6.4)	272 (22.8)
Delhi (N=414)	52 (7.8)	11 (4.3)	137 (14.5)	12 (1.6)	19 (13.8)	249 (26.1)	229 (20.8)	222 (28.2)	471 (43.)
Karachi (N= 278)	22 (2.2)	3 (2.1)	136 (12.7)	10 (1.3)	0 (0.1)	180 (15.)	179 (15.)	108 (7.)	288 (16.6)
Overall (N=1072)	43 (4.7)	12 (3.4)	121 (8.2)	11 (1.)	8 (5.6)	207 (14.5)	198 (12.6)	151 (13.3)	358 (21.9)
<b>Diabetes (DM)</b>									
Chennai (N=469)	33 (4.4)	38 (5.4)	117 (14.)	11 (1.8)	10 (4.6)	211 (20.3)	200 (19.9)	111 (11.7)	321 (26.)
Delhi (N=291)	58 (5.)	56 (9.)	278 (34.7)	17 (3.9)	48 (28.9)	504 (46.8)	431 (38.5)	176 (10.1)	680 (50.)
Karachi (N=133)	26 (3.2)	28 (9.)	279 (43.6)	16 (3.9)	9 (9.6)	360 (46.1)	351 (48.2)	115 (16.6)	475 (52.2)
Overall (N=893)	41 (2.9)	43 (4.6)	197 (14.4)	14 (1.8)	23 (9.9)	335 (20.5)	303 (18.3)	134 (7.1)	469 (23.3)
<b>Heart disease (HD)</b>									
Chennai (N=35)	13 (6.)	9 (5.3)	191 (92.7)	25 (9.9)	33 (33.)	270 (106.4)	238 (99.)	206 (65.4)	476 (121.8)
Delhi (N=55)	62 (23.3)	71 (32.)	851 (497.2)	37 (14.1)	1358 (745.6)	3039 (1313.4)	1640 (1142.8)	306 (96.6)	3345 (1348.3)
Karachi (N=36)	26 (6.7)	58 (23.6)	430 (85.4)	15 (3.9)	360 (314.9)	901 (298.4)	541 (94.9)	134 (30.6)	1035 (306.7)
Overall (N=126)	37 (9.7)	49 (15.9)	535 (199.1)	27 (6.1)	679 (315.)	1605 (514.5)	909 (444.5)	227 (41.8)	1831 (528.4)
<b>Chronic Kidney Disease (CKD)*</b>									
Chennai (N=5)	5 (2.7)	15 (7.6)	23 (19.9)	4 (0.9)	1 (0.9)	550 (324.6)	377 (266.8)	154 (55.3)	704 (285.3)
Delhi (N=3)	3655 (2424.9)	1211 (814.2)	838 (87.6)	399 (219.3)	164 (243.6)	6274 (3249.2)	5862 (3584.2)	3080 (1923.8)	9354 (5172.1)
Karachi (N=15)	41 (13.3)	431 (408.4)	253 (108.1)	24 (9.4)	604 (441.8)	1354 (623.7)	703 (461.3)	174 (78.2)	1529 (667.2)
Overall (N=23)	519 (469.4)	459 (288.6)	289 (80.2)	70 (46.6)	434 (325.8)	1865 (778.4)	1334 (769.)	560 (380.)	2425 (1120.4)
<b>Stroke (ST)</b>									
Chennai (N=5)	23 (27.1)	314 (367.4)	74 (62.8)	16 (17.9)	0 ((omitted))	428 (462.9)	26 (41.2)	142 (74.2)	569 (421.9)
Delhi (N=5)	38 (38.1)	266 (301.2)	399 (252.5)	36 (24.2)	0 ((omitted))	738 (480.5)	737 (481.4)	229 (76.4)	967 (511.8)
Karachi (N=3)	49 (24.7)	118 (149.6)	296 (373.9)	83 (64.9)	332 (293.3)	876 (489.8)	544 (591.8)	232 (54.5)	1108 (488.2)
Overall (N=13)	36 (17.2)	241 (153.1)	259 (152.)	42 (20.2)	92 (88.7)	670 (270.2)	439 (259.1)	200 (37.4)	870 (266.)

## Hypertension and diabetes

Chennai (N=237)	81 (11.3)	47 (13.3)	203 (40.1)	14 (2.5)	22 (13.9)	439 (81.2)	416 (82.1)	137 (24.6)	575 (84.)
Delhi (N=161)	107 (11.3)	121 (21.6)	446 (40.9)	33 (10.3)	0 ((omitted))	742 (54.8)	662 (57.8)	219 (21.2)	961 (60.3)
Karachi (N=104)	57 (8.8)	22 (5.2)	346 (38.2)	14 (2.4)	12 (9.3)	464 (41.8)	452 (43.7)	125 (14.9)	588 (41.4)
Overall (N=502)	85 (6.9)	68 (11.5)	319 (23.1)	20 (3.7)	12 (6.2)	550 (41.3)	510 (41.3)	163 (13.7)	713 (45.8)

## HT/DM+ HD/CKD/ ST

Chennai (N=97)	85 (15.9)	75 (26.6)	560 (102.4)	29 (8.)	551 (268.4)	1299 (307.7)	914 (184.3)	330 (57.9)	1630 (313.9)
Delhi (N=92)	132 (22.7)	566 (311.6)	968 (164.7)	55 (17.4)	768 (501.)	2548 (563.8)	1716 (362.8)	400 (108.5)	2948 (622.9)
Karachi (N=65)	64 (12.2)	172 (60.4)	536 (107.6)	37 (7.3)	1386 (659.7)	2262 (677.1)	877 (204.5)	286 (53.2)	2548 (682.1)
Overall (N=254)	96 (10.7)	275 (117.5)	698 (83.5)	40 (7.1)	850 (261.)	1999 (278.7)	1189 (163.)	343 (48.5)	2342 (296.9)

## All CMDs

Chennai (N=1,228)	50 (3.9)	37 (4.7)	163 (16.6)	13 (1.2)	54 (22.)	335 (30.4)	292 (24.4)	132 (9.4)	467 (32.9)
Delhi (N=1,021)	80 (10.7)	94 (27.)	332 (32.3)	23 (2.9)	151 (54.4)	744 (71.4)	564 (57.6)	236 (18.)	979 (75.2)
Karachi (N=634)	34 (3.3)	43 (15.)	261 (23.)	15 (1.3)	183 (66.8)	550 (84.9)	366 (38.8)	134 (7.8)	684 (85.2)
Overall (N=2,883)	58 (4.5)	60 (11.7)	248 (15.)	17 (1.2)	119 (28.7)	536 (40.2)	410 (27.3)	171 (9.)	708 (42.4)

**Table S3: Economic burden from CVD and diabetes in three cities using self-reported prevalence (diagnosed) of CARRS study (in Int \$)**

	Direct cost (Mean) 1	OOPE (Mean) 2	Indirect cost (Mean) 3	Age standardized prevalence 4	Age standardized prevalence in productive age group 5	Population at risk (>20 years) 6	Productive population at risk (20-64 years) 7	Affected population 8=(4*6)/100	Affected productive population 9=(5*7)/100	Total direct cost 10= (8*1)	Indirect cost 11= (9*3 )	Total economic cost (10+11)	Total OOPE (8*2)
<b>Hypertension (HT)</b>													
Chennai (N=380)	175	173	97	14.7	14.1	3276098	2985392	481586	420940	84,419,689	83,295,185	40,623,397	125,043,086
Delhi (N=414)	249	229	222	22.6	22.3	10291989	9632073	2325990	2147952	579,280,013	531,617,696	477,180,916	1,056,460,929
Karachi (N= 278)	180	179	108	20.7	19.6	7315219	6927600	1514250	1357810	272,011,904	271,536,278	146,579,756	418,591,660
<b>Diabetes (DM)</b>													
Chennai (N=469)	211	200	111	10	9.9	3276098	2985392	327610	295554	68,977,392	65,626,468	32,710,654	101,688,046
Delhi (N=291)	504	431	176	10.9	10.9	10291989	9632073	1121827	1049896	565,248,588	483,358,260	184,958,491	750,207,079
Karachi (N=133)	360	351	115	8.1	8	7315219	6927600	592533	554208	213,432,959	208,184,304	63,726,383	277,159,342
<b>Heart disease (HD)</b>													
Chennai (N=35)	270	238	206	0.5	0.4	3276098	2985392	16380	11942	4,429,440	3,894,825	2,456,338	6,885,778

Delhi (N=55)	3039	1640	306	0.5	0.4	10291989	9632073	51460	38528	156,377,819	84,382,937	11,800,376	168,178,195
Karachi (N=36)	901	541	134	0.5	0.5	7315219	6927600	36576	34638	32,965,087	19,786,237	4,649,060	37,614,148
Chronic Kidney Disease (CKD)*													
Chennai (N=5)	550	377	154	0.0002	0.0002	3276098	2985392	7	6	3,601	2,469	919	4,521
Delhi (N=3)	6274	5862	3080	0.0002	0.0002	10291989	9632073	21	19	129,149	120,672	59,331	188,480
Karachi (N=15)	1354	703	174	1	1	7315219	6927600	73152	69276	99,083,837	51,457,877	12,080,917	111,164,754
Stroke (ST)*													
Chennai (N=5)	428	26	142	0.1	0.1	3276098	2985392	3276	2985	1,400,834	84,100	423,040	1,823,874
Delhi (N=5)	738	737	229	0.1	0.1	10291989	9632073	10292	9632	7,596,650	7,580,910	2,201,169	9,797,819
Karachi (N=3)	876	544	232	0.0001	0.0001	7315219	6927600	7	7	6,408	3,982	1,607	8,015
Hypertension and diabetes													
Chennai (N=237)	439	416	137	9.8	9.1	3276098	2985392	321058	271671	140,851,984	133,714,906	37,113,094	177,965,078
Delhi (N=161)	742	662	219	12.7	11.9	10291989	9632073	1307083	1146217	969,786,800	865,625,388	251,533,813	1,221,320,614
Karachi (N=104)	464	452	125	10	9.3	7315219	6927600	731522	644267	339,112,997	330,303,937	80,277,190	419,390,187
HT/DM+ HD/CKD/ ST													
Chennai (N=97)	1299	914	330	0.2	0.2	3276098	2985392	6552	5971	8,514,500	5,987,815	1,972,524	10,487,024
Delhi (N=92)	2548	1716	400	0.7	0.6	10291989	9632073	72044	57792	183,551,994	123,624,922	23,129,863	206,681,857
Karachi (N=65)	2262	877	286	0.8	0.7	7315219	6927600	58522	48493	132,356,364	51,309,028	13,861,330	146,217,694
For all CMDs										Sum of all CMDs			
Chennai	-	-	-	-	-	-	-	-	-	308,597,440	292,605,768	115,299,965	423,897,405
Delhi	-	-	-	-	-	-	-	-	-	2,461,971,013	2,096,310,787	950,863,959	3,412,834,972
Karachi	-	-	-	-	-	-	-	-	-	1,088,969,556	932,581,643	321,176,243	1,410,145,799

- 4 & 5source: CARRS surveillance epidemiology data, 6& 7 Source: Census data
- numbers in the last 4 columns will not match, as for the ease of presentation we have rounded off mean cost value in the table, though while calculating total direct , indirect, economic and OOPE at population level we have used mean cost value with more than one decimal place  
Eg: In table S4 row 1:  $97 * 447809 = 43437473$ .  
During calculation, we have used:  $96.506 * 447809 = 43,216,379$

**Table S4: Economic burden from CVD and diabetes in three cities using prevalence (diagnosed and undiagnosed) of CARRS study (in Int \$)**

	Direct cost (Mean) 1	OOPE (Mean) 2	Indirect cost (Mean) 3	Age standardized prevalence 4	Age standardized prevalence in productive age group 5	Population at risk (>20 years) 6	Productive population at risk (20-64 years) 7	Affected population 8=(4*6)/100	Affected productive population 9=(5*7)/100	Total direct cost 10= (8*1)	Indirect cost 11= (9*3)	Total economic cost (10+11)	Total OOPE (8*2)
Hypertension (HT)													
Chennai (N=380)	175	173	97	16.1	15	3276098	2985392	527452	447809	92,459,659	43,216,379	135,676,039	91,228,060
Delhi (N=414)	249	229	222	21.7	20.9	10291989	9632073	2233362	2013103	556,211,340	447,223,370	1,003,434,709	510,447,080
Karachi (N= 278)	180	179	108	17.9	17.7	7315219	6927600	1309424	1226185	235,218,024	132,370,494	367,588,517	234,806,733
Diabetes (DM)	207	198	151						0		0		
Chennai (N=469)	0	0	0						0		0		
Chennai (N=469)	211	200	111	10.7	10.4	3276098	2985392	350542	310481	73,805,809	34,362,707	108,168,516	70,220,320
Delhi (N=291)	504	431	176	11	10.8	10291989	9632073	1132119	1040264	570,434,355	183,261,624	753,695,979	487,792,740
Karachi (N=133)	360	351	115	7.8	7.6	7315219	6927600	570587	526498	205,528,035	60,540,064	266,068,098	200,473,774
Heart disease (HD)	335	303	134						0		0		
Chennai (N=35)	0	0	0						0		0		
Chennai (N=35)	270	238	206	0.4	0.4	3276098	2985392	13104	11942	3,543,552	2,456,338	5,999,890	3,115,860
Delhi (N=55)	3039	1640	306	0.6	0.5	10291989	9632073	61752	48160	187,653,383	14,750,470	202,403,852	101,259,525
Karachi (N=36)	901	541	134	0.5	0.4	7315219	6927600	36576	27710	32,965,087	3,719,248	36,684,335	19,786,237
Chronic Kidney Disease (CKD)*	1605	909	227						0		0		
Chennai (N=5)	0	0	0						0		0		
Chennai (N=5)	550	377	154	0.05	0.06	3276098	2985392	1638	1791	900,374	275,765	1,176,139	617,289
Delhi (N=3)	6274	5862	3080	0.04	0.02	10291989	9632073	4117	1926	25,829,817	5,933,072	31,762,889	24,134,488
Karachi (N=15)	1354	703	174	1	0.9	7315219	6927600	73152	62348	99,083,837	10,872,825	109,956,662	51,457,877
Stroke (ST)*	1865	1334	560						0		0		
Chennai (N=5)	0	0	0						0		0		
Chennai (N=5)	428	26	142	0.05	0.06	3276098	2985392	1638	1791	700,417	253,824	954,241	42,050
Delhi (N=5)	738	737	229	0.1	0.1	10291989	9632073	10292	9632	7,596,650	2,201,169	9,797,819	7,580,910
Karachi (N=3)	876	544	232	0.02	0.02	7315219	6927600	1463	1386	1,281,579	321,470	1,603,049	796,353
	670	439	200						0		0		

Hypertension and diabetes	0	0	0						0	0			
Chennai (N=237)	439	416	137	10.8	8.8	3276098	2985392	353819	262714	155,224,636	35,889,585	191,114,220	147,359,284
Delhi (N=161)	742	662	219	12.5	10.7	10291989	9632073	1286499	1030632	954,514,567	226,169,059	1,180,683,626	851,993,492
Karachi (N=104)	464	452	125	9	7.5	7315219	6927600	658370	519570	305,201,697	64,739,669	369,941,366	297,273,543
	550	510	163						0		0		
HT/DM+ HD/CKD/ ST	0	0	0						0		0		
Chennai (N=97)	1299	914	330	2.4	1.7	3276098	2985392	78626	50752	102,174,001	16,766,457	118,940,458	71,853,785
Delhi (N=92)	2548	1716	400	3.3	2.1	10291989	9632073	339636	202274	865,316,544	80,954,520	946,271,064	582,803,205
Karachi (N=65)	2262	877	286	4.7	3.8	7315219	6927600	343815	263249	777,593,639	75,247,221	852,840,861	301,440,539
For all CMDs										Sum of all CMDs			
Chennai	-	-	-	-	-	-	-	-	-	428,808,448	133,221,054	562,029,503	384,436,648
Delhi	-	-	-	-	-	-	-	-	-	3,167,556,655	960,493,284	4,128,049,939	2,566,011,440
Karachi	-	-	-	-	-	-	-	-	-	1,656,871,897	347,810,991	2,004,682,889	1,106,035,057

- 4 & 5source: CARRS surveillance epidemiology data, 6& 7 Source: Census data
- numbers in the last 4 columns will not match, as for the ease of presentation we have rounded off mean cost value in the table, though while calculating total direct , indirect, economic and OOPE at population level we have used mean cost value with more than one decimal place  
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