

## APPENDIX A

Appendix A tabulates the monthly cost (US \$) of available anti-hypertensive and lipid lowering drugs individually in each SAARC country. For each drug within a class the minimum effective and the ceiling recommended dosage has been listed. For both, the minimum and the maximum monthly cost packages have been calculated. These cost packages are based on the available minimum and maximal dosages of each drug in the market, in the absence of which cost for the minimum and the maximum recommended doses have been calculated from the cost of available dosage in the market. These costs have been viewed as a percentage of the monthly rural and urban household incomes and as a percentage of the monthly household health expenditure by the private and the public sector. Local currencies have been converted into US \$ based on the exchange rates as of July 18, 2001 displayed on <http://theFinancial.com>

PAKISTAN		Monthly cost of therapy		Cost of therapy as a percentage of the average rural household income		Cost of therapy as a percentage of the average urban household income		Cost of therapy as a percentage of the monthly household health expenditure by the public sector		Cost of therapy as a percentage of the monthly household health expenditure by the private sector	
Drug by Class	Dose	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available
<b>Ace Inhibitors</b>											
Captopril	25 mg	1.173	3.650	1.43	4.46	1.06	3.31	51.89	161.49	15.06	46.85
	100 mg	4.691	14.599	5.74	17.86	4.26	13.26	207.57	645.97	60.22	187.41
Enalapril	5 mg	1.013	2.102	1.24	2.57	0.92	1.91	44.84	92.99	13.01	26.98
	20 mg	4.053	8.407	4.96	10.28	3.68	7.63	179.34	371.97	52.03	107.91
Lisinopril	5 mg	2.041	2.491	2.50	3.05	1.85	2.26	90.29	110.22	26.20	31.98
	20 mg	8.163	9.964	9.98	12.19	7.41	9.05	361.18	440.89	104.78	127.91
Ramipril	1.25 mg		3.467		4.24		3.15		153.40		44.50
	5 mg		13.867		16.96		12.59		613.59		178.01
<b>A2 Receptor Blockers</b>											
Losartan	50 mg		23.306		28.51		21.16		1031.23		299.17
	100 mg		46.611		57.02		42.32		2062.45		598.35
Valsartan	80 mg		17.507		21.42		15.90		774.66		224.74
	160 mg		35.015		42.83		31.79		1549.33		449.48

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Drug by Class	Dose	Monthly cost of therapy		Cost of therapy as a percentage of the average rural household income		Cost of therapy as a percentage of the average urban household income		Cost of therapy as a percentage of the monthly household health expenditure by the public sector		Cost of therapy as a percentage of the monthly household health expenditure by the private sector	
		Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available
<b>Beta Blockers</b>											
Propranolol	40 mg	0.572	1.084	0.70	1.33	0.52	0.98	25.32	47.95	7.35	13.91
	160 mg	2.289	4.335	2.80	5.30	2.08	3.94	101.30	191.80	29.39	55.64
Metoprolol	100 mg	2.346	2.843	2.87	3.48	2.13	2.58	103.79	125.79	30.11	36.49
	200 mg	4.691	5.686	5.74	6.95	4.26	5.16	207.57	251.58	60.22	72.99
Atenolol	50 mg	0.727	2.866	0.89	3.51	0.66	2.60	32.17	126.83	9.33	36.79
	100 mg	1.454	5.733	1.78	7.01	1.32	5.21	64.35	253.66	18.67	73.59
<b>Ca Channel Blockers</b>											
Nifedipine	20 mg	0.938	3.706	1.15	4.53	0.85	3.37	41.51	163.98	12.04	47.57
	80 mg	3.753	14.824	4.59	18.13	3.41	13.46	166.06	655.93	48.18	190.30
Amlodipine	5 mg	0.422	5.582	0.52	6.83	0.38	5.07	18.68	247.01	5.42	71.66
	10 mg	0.844	11.165	1.03	13.66	0.77	10.14	37.36	494.03	10.84	143.32
Felodipine	5 mg		4.752		5.81		4.32		210.27		61.00
	20 mg		19.009		23.25		17.26		841.09		244.01
Diltiazem	60 mg	1.876	4.841	2.30	5.92	1.70	4.40	83.03	214.22	24.09	62.15
	360 mg	11.259	29.048	13.77	35.53	10.22	26.38	498.18	1285.30	144.53	372.88
Verapamil	240 mg	2.050	3.181	2.51	3.89	1.86	2.89	90.71	140.73	26.32	40.83
	480 mg	4.100	6.361	5.02	7.78	3.72	5.78	181.42	281.47	52.63	81.66
<b>Diuretics</b>											
Indapamide	2.5 mg	1.642	2.857	2.01	3.49	1.49	2.59	72.65	126.41	21.08	36.67
Furosemide	20 mg	0.106	0.387	0.13	0.47	0.10	0.35	4.67	17.12	1.35	4.97
	40 mg	0.211	0.774	0.26	0.95	0.19	0.70	9.34	34.25	2.71	9.94

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Drug by Class	Dose	Monthly cost of therapy		Cost of therapy as a percentage of the average rural household income		Cost of therapy as a percentage of the average urban household income		Cost of therapy as a percentage of the monthly household health expenditure by the public sector		Cost of therapy as a percentage of the monthly household health expenditure by the private sector	
		Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available
Spironolactone	100 mg		3.237		3.96		2.94		143.23		41.55
	200 mg		6.474		7.92		5.88		286.45		83.10
Methyldopa	250 mg		0.783		0.96		0.71		34.66		10.06
	3 g		9.401		11.50		8.54		415.98		120.68
<b>Statins</b>											
Lovastatin	20 mg	5.629	15.481	6.89	18.94	5.11	14.06	249.09	684.99	72.26	198.73
	80 mg	22.518	61.923	27.54	75.75	20.45	56.23	996.35	2739.97	289.06	794.91
Fluvastatin	20 mg		8.913		10.90		8.09		394.39		114.42
	80 mg		35.653		43.61		32.37		1577.56		457.67
Simvastatin	10 mg	6.450	15.129	7.89	18.51	5.86	13.74	285.41	669.43	82.80	194.21
	40 mg	25.801	60.516	31.56	74.03	23.43	54.95	1141.66	2677.70	331.21	776.84
Atorvastatin	10 mg		26.271		32.14		23.85		1162.41		337.23
	40 mg		105.082		128.54		95.42		4649.65		1348.94
Cerivastatin	0.4 mg		30.023		36.73		27.26		1328.47		385.41
	0.8 mg		60.047		73.45		54.52		2656.94		770.82
<b>Fibric acid derivatives</b>											
Gemfibrozil	900 mg	3.870	4.785		5.85	3.51	4.34	171.25	211.73	49.68	61.42
	1.5 g	6.450	7.975		9.76	5.86	7.24	285.41	352.88	82.80	102.37
Bezafibrate	200 mg	1.027	0.035	1.26	0.04	0.93	0.03	45.46	1.56	13.19	0.45
	600 mg	3.082	0.106	3.77	0.13	2.80	0.10	136.38	4.69	39.56	1.36

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INDIA		Monthly cost of therapy		Cost of therapy as a percentage of the average rural household income		Cost of therapy as a percentage of the average urban household income		Cost of therapy as a percentage of the monthly household health expenditure by the public sector		Cost of therapy as a percentage of the monthly household health expenditure by the private sector	
Drug by Class	Dose	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available
<b>Ace Inhibitors</b>											
Captopril	25 mg	0.573	0.605	1.27	1.34	1.07	1.13	38.46	40.60	7.37	7.78
	100 mg	2.293	2.420	5.09	5.37	4.30	4.54	153.86	162.41	29.47	31.10
Enalapril	5 mg	0.955	1.146	2.12	2.54	1.79	2.15	64.11	76.93	12.28	14.73
	20 mg	3.821	4.585	8.48	10.18	7.17	8.60	256.43	307.72	49.11	58.93
Lisinopril	5 mg	1.910	3.114	4.24	6.91	3.58	5.84	128.22	208.99	24.56	40.03
	20 mg	7.642	12.456	16.96	27.64	14.33	23.36	512.87	835.97	98.22	160.10
Ramipril	1.25 mg		1.353		3.00		2.54		90.82		17.39
	5 mg		5.413		12.01		10.15		363.28		69.57
<b>A2 Receptor Blockers</b>											
Losartan	50 mg	2.675	4.967	5.94	11.02	5.02	9.32	179.50	333.36	34.38	63.84
	100 mg	5.349	9.934	11.87	22.05	10.03	18.63	359.01	666.72	68.76	127.69
<b>Beta Blockers</b>											
Propranolol	40 mg	0.611	0.892	1.36	1.98	1.15	1.67	41.03	59.83	7.86	11.46
	160 mg	2.445	3.566	5.43	7.91	4.59	6.69	164.12	239.34	31.43	45.84
Metoprolol	100 mg	0.955	1.656	2.12	3.67	1.79	3.11	64.11	111.12	12.28	21.28
	200 mg	1.910	3.311	4.24	7.35	3.58	6.21	128.22	222.24	24.56	42.56
Atenolol	50 mg	0.700	1.325	1.55	2.94	1.31	2.48	47.01	88.90	9.00	17.03
	100 mg	1.274	2.375	2.83	5.27	2.39	4.45	85.48	159.42	16.37	30.53
<b>Ca Channel Blockers</b>											
Nifedipine	20 mg	0.070	0.120	0.16	0.27	0.13	0.23	4.70	8.05	0.90	1.54
	80 mg	0.280	0.500	0.62	1.11	0.53	0.94	18.79	33.56	3.60	6.43

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Drug by Class	Dose	Monthly cost of therapy		Cost of therapy as a percentage of the average rural household income		Cost of therapy as a percentage of the average urban household income		Cost of therapy as a percentage of the monthly household health expenditure by the public sector		Cost of therapy as a percentage of the monthly household health expenditure by the private sector	
		Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available
Amlodipine	5 mg	0.446	3.057	0.99	6.78	0.84	5.73	29.92	205.15	5.73	39.29
	10 mg	0.892	6.113	1.98	13.57	1.67	11.47	59.83	410.29	11.46	78.58
Felodipine	5 mg	1.465	2.197	3.25	4.88	2.75	4.12	98.30	147.45	18.83	28.24
	20 mg	5.859	8.788	13.00	19.50	10.99	16.48	393.20	589.79	75.30	112.96
Diltiazem	60 mg	1.700	2.400	3.77	5.33	3.19	4.50	114.09	161.07	21.85	30.85
	360 mg	10.200	14.700	22.64	32.62	19.13	27.57	684.56	986.58	131.11	188.95
Verapamil	240 mg		21.206		47.06		39.77		1423.20		272.57
	480 mg		42.411		94.12		79.54		2846.40		545.13
<b>Diuretics</b>											
Indapamide	2.5 mg	1.305	3.260	2.90	7.24	2.45	6.11	87.61	218.82	16.78	41.91
Furosemide	20 mg		0.135		0.30		0.25		9.06		1.74
	40 mg		0.270		0.60		0.51		18.12		3.47
Spironolactone	100 mg		3.240		7.19		6.08		217.45		41.65
	200 mg		6.480		14.38		12.15		434.90		83.29
Hydrochlorothiazide	50 mg		0.030		0.07		0.06		2.01		0.39
Methyldopa	250 mg	1.337	2.000	2.97	4.44	2.51	3.75	89.75	134.20	17.19	25.70
	3 g	16.048	23.995	35.61	53.25	30.10	45.00	1077.02	1610.40	206.27	308.42
<b>Statins</b>											
Lovastatin	20 mg	1.974	3.846	4.38	8.54	3.70	7.21	132.49	258.14	25.37	49.44
	80 mg	7.896	15.385	17.52	34.14	14.81	28.85	529.96	1032.57	101.50	197.75
Simvastatin	10 mg	3.197	7.005	7.09	15.55	6.00	13.14	214.55	470.13	41.09	90.04

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Drug by Class	Dose	Monthly cost of therapy		Cost of therapy as a percentage of the average rural household income		Cost of therapy as a percentage of the average urban household income		Cost of therapy as a percentage of the monthly household health expenditure by the public sector		Cost of therapy as a percentage of the monthly household health expenditure by the private sector	
		Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available
Simvastatin	40 mg	12.787	28.020	28.38	62.18	23.98	52.55	858.19	1880.51	164.36	360.15
Atorvastatin	10 mg	10.189	11.463	22.61	25.44	19.11	21.50	683.82	769.30	130.96	147.33
	40 mg	40.756	45.850	90.45	101.75	76.44	85.99	2735.28	3077.19	523.85	589.33
Cerivastatin	0.4 mg		5.731		12.72		10.75		384.65		73.67
	0.8 mg		11.463		25.44		21.50		769.30		147.33
<b>Fibric acid derivatives</b>											
Gemfibrozil	600 mg		13.373		29.68		25.08		897.51		171.89
	900 mg		20.059		44.52		37.62		1346.27		257.83
	1.5 g		33.432		74.20		62.70		2243.78		429.72
Fenofibrate	200 mg		6.750		14.98		12.66		453.03		86.76
Bezafibrate	200 mg		2.786		6.18		5.23		186.98		35.81
	600 mg		8.358		18.55		15.68		560.95		107.43
<b>Niacin</b>											
Niacin	500 mg		1.178		2.61		2.21		79.07		15.14
	1.5 g		3.534		7.84		6.63		237.20		45.43
	6 g		14.137		31.37		26.51		948.80		181.71
<b>BANGLADESH</b>											
<b>Ace Inhibitors</b>											
Captopril	25 mg	1.30	1.56	2.05	2.46	0.94	1.13	55.13	66.15	49.28	59.13
	100 mg	5.204	6.245	8.20	9.84	3.76	4.52	220.50	264.60	197.11	236.54
Enalapril	5 mg	0.520	0.781	0.82	1.23	0.38	0.56	22.05	33.08	19.71	29.57

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Drug by Class	Dose	Monthly cost of therapy		Cost of therapy as a percentage of the average rural household income		Cost of therapy as a percentage of the average urban household income		Cost of therapy as a percentage of the monthly household health expenditure by the public sector		Cost of therapy as a percentage of the monthly household health expenditure by the private sector	
		Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available
Enalapril	20 mg	2.082	3.122	3.28	4.92	1.51	2.26	88.20	132.30	78.85	118.27
Lisinopril	5 mg	1.405	2.082	2.21	3.28	1.02	1.51	59.54	88.20	53.22	78.85
	20 mg	5.620	8.326	8.86	13.12	4.06	6.02	238.14	352.80	212.88	315.38
Ramipril	1.25 mg	1.041	1.561	1.64	2.46	0.75	1.13	44.10	66.15	39.42	59.13
	5 mg	4.163	6.245	6.56	9.84	3.01	4.52	176.10	264.60	157.69	236.54
<b>A2 Receptor Blockers</b>											
Losartan	50 mg	2.602	3.122	4.10	4.92	1.88	2.26	110.25	132.30	98.56	118.27
	100 mg	5.204	6.245	8.20	9.84	3.76	4.52	220.50	264.60	197.11	236.54
Valsartan	80 mg		16.132		25.42		11.66		683.55		611.05
	160 mg		32.264		50.85		23.33		1367.10		1222.11
<b>Beta Blockers</b>											
Propranolol	40 mg	0.520	0.208	0.82	0.33	0.38	0.15	22.05	8.82	19.71	7.88
	160 mg	2.082	24.978	3.28	39.37	1.51	18.06	88.20	1058.40	78.85	946.15
Metoprolol	100 mg		0.676		1.07		0.49		28.67		25.62
	200 mg		1.353		2.13		0.98		57.33		51.25
Atenolol	50 mg		0.390		0.62		0.28		16.54		14.78
	100 mg		0.703		1.11		0.51		29.77		26.61
<b>Ca Channel Blockers</b>											
Nifedipine	20 mg		5.250		8.27		3.80		222.46		198.86
	80 mg		21.000		33.10		15.18		889.83		795.45
Amlodipine	5 mg	1.561	2.602	2.46	4.10	1.13	1.88	66.15	110.25	59.13	98.56
	10 mg	3.122	5.204	4.92	8.20	2.26	3.76	132.30	220.50	118.27	197.11

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Drug by Class	Dose	Monthly cost of therapy		Cost of therapy as a percentage of the average rural household income		Cost of therapy as a percentage of the average urban household income		Cost of therapy as a percentage of the monthly household health expenditure by the public sector		Cost of therapy as a percentage of the monthly household health expenditure by the private sector	
		Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available
Diltiazem	60 mg		2.082		3.28		1.51		88.20		78.85
	360 mg		12.489		19.68		9.03		529.20		473.07
Verapamil	240 mg		4.423		6.97		3.20		187.43		167.55
	480 mg		8.846		13.94		6.40		374.85		335.09
<b>Diuretics</b>											
Indapamide	2.5 mg		4.007		6.32		2.90		169.79		151.78
Furosemide	20 mg		0.130		0.21		0.09		5.51		4.93
	40 mg		0.260		0.41		0.19		11.03		9.86
Spironolactone	100 mg		5.204		8.20		3.76		220.50		197.11
	200 mg		10.408		16.40		7.53		441.00		394.23
Hydrochlorothiazide	50 mg	0.312	0.338	0.49	0.53	0.23	0.24	13.23	14.33	11.83	12.81
Methyldopa	250 mg		0.885		1.39		0.64		37.49		33.51
	3 g		10.616		16.73		7.68		449.82		402.11
<b>Statins</b>											
Lovastatin	20 mg		5.204		8.20		3.76		220.50		197.11
	80 mg		20.815		32.81		15.05		882.00		788.46
Fluvastatin	20 mg		10.408		16.40		7.53		441.00		394.23
	80 mg		41.631		65.61		30.10		1764.01		1576.91
Simvastatin	10 mg	2.862	3.903	4.51	6.15	2.07	2.82	121.28	165.38	108.41	147.84
	40 mg	11.448	15.611	18.04	24.60	8.28	11.29	485.10	661.50	433.65	591.34
Atorvastatin	10 mg	11.709	14.831	18.45	23.37	8.47	10.72	496.13	628.43	443.51	561.78
	40 mg	46.834	59.324	73.81	93.50	33.86	42.89	1984.51	2513.71	1774.03	2247.10



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Drug by Class	Dose	Monthly cost of therapy		Cost of therapy as a percentage of the average rural household income		Cost of therapy as a percentage of the average urban household income		Cost of therapy as a percentage of the monthly household health expenditure by the public sector		Cost of therapy as a percentage of the monthly household health expenditure by the private sector	
		Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available
<b>Fibric acid derivatives</b>											
Gemfibrozil	900 mg		5.464		8.61		3.95		231.53		206.97
	1.5 mg		9.107		14.35		6.58		385.88		344.95
<b>NEPAL</b>											
<b>Ace Inhibitors</b>											
Captopril	25 mg	1.041	2.003	2.05	3.95	1.39	2.68	94.24	181.24	29.17	56.10
	100 mg	4.166	8.011	8.21	15.79	5.57	10.71	376.97	724.95	116.68	224.39
Enalapril	5 mg	0.681	1.242	1.34	2.45	0.91	1.66	61.62	112.37	19.07	34.78
	20 mg	2.724	4.967	5.37	9.79	3.64	6.64	246.48	449.47	76.29	139.12
Lisinopril	5 mg	2.283	2.323	4.50	4.58	3.05	3.11	206.61	210.24	63.95	65.07
	20 mg	9.132	9.292	18.00	18.32	12.21	12.43	826.44	840.94	255.80	260.29
Ramipril	1.25 mg		1.362		2.68		1.82		123.24		38.15
	5 mg		5.447		10.74		7.29		492.96		152.58
<b>A2 Receptor Blockers</b>											
Losartan	50 mg	1.402	2.603	2.76	5.13	1.87	3.48	126.87	235.61	39.27	72.93
	100 mg	2.804	5.207	5.53	10.26	3.75	6.96	253.73	471.22	78.54	145.85
<b>Beta Blockers</b>											
Propranolol	40 mg	0.761	1.065	1.50	2.10	1.02	1.42	68.87	96.42	21.32	29.84
	160 mg	3.044	4.262	6.00	8.40	4.07	5.70	275.48	385.67	85.27	119.37
Metoprolol	100 mg	1.442	1.602	2.84	3.16	1.93	2.14	130.49	144.99	40.39	44.88
	200 mg	2.884	3.204	5.68	6.32	3.86	4.29	260.98	289.98	80.78	89.76
Atenolol	50 mg	0.841	1.330	1.66	2.62	1.12	1.78	76.12	120.34	23.56	37.25
	100 mg	2.083	2.411	4.11	4.75	2.79	3.22	188.49	218.21	58.34	67.54

Continued.....

Drug by Class		Monthly cost of therapy		Cost of therapy as a percentage of the average rural household income		Cost of therapy as a percentage of the average urban household income		Cost of therapy as a percentage of the monthly household health expenditure by the public sector		Cost of therapy as a percentage of the monthly household health expenditure by the private sector	
		Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available
<b>Ca Channel Blockers</b>											
Nifedipine	20 mg	18.000	19.500	35.48	38.44	24.07	26.08	1628.96	1764.71	504.20	546.22
	80 mg	72.000	78.000	141.93	153.76	96.30	104.32	6515.84	7058.82	2016.81	2184.87
Amlodipine	5 mg	0.801	3.012	1.58	5.94	1.07	4.03	72.49	272.58	22.44	84.37
	10 mg	1.602	6.024	3.16	11.87	2.14	8.06	144.99	545.16	44.88	168.74
Diltiazem	60 mg	2.123	2.724	4.18	5.37	2.84	3.64	192.11	246.48	59.46	76.29
	360 mg	12.737	16.342	25.11	32.21	17.03	21.86	1152.67	1478.89	356.78	457.75
Verapamil	240 mg	2.163	3.485	4.26	6.87	2.89	4.66	195.74	315.35	60.58	97.61
	480 mg	4.326	6.969	8.53	13.74	5.79	9.32	391.47	630.71	121.17	195.22
<b>Diuretics</b>											
Furosemide	20 mg		0.100		0.20		0.13		9.06		2.80
	40 mg		0.200		0.39		0.27		18.12		5.61
Spironolactone	100 mg		3.381		6.66		4.52		305.93		94.69
	200 mg		6.761		13.33		9.04		611.86		189.38
Methyldopa	250 mg		1.602		3.16		2.14		144.99		44.88
	3 g		19.226		37.90		25.71		1739.88		538.53
<b>Statins</b>											
Lovastatin	20 mg	4.486	13.458	8.84	26.53	6.00	18.00	405.97	1217.91	125.66	376.97
	80 mg	17.944	53.832	35.37	106.11	24.00	72.00	1623.88	4871.65	502.63	1507.89
Simvastatin	10 mg		3.905		7.70		5.22		353.41		109.39

Continued.....

Drug by Class		Monthly cost of therapy		Cost of therapy as a percentage of the average rural household income		Cost of therapy as a percentage of the average urban household income		Cost of therapy as a percentage of the monthly household health expenditure by the public sector		Cost of therapy as a percentage of the monthly household health expenditure by the private sector	
		Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available
Simvastatin	40 mg		15.621		30.79		20.89		1413.65		437.56
<b>Fibric acid derivatives</b>											
Gemfibrozil	900 mg		18.601		36.67		24.88		1683.33		521.03
	1.5 g		31.001		61.11		41.46		2805.55		868.38
Bezafibrate	200 mg		4.746		9.36		6.35		429.53		132.95
	600 mg		14.239		28.07		19.04		1288.60		398.85
<b>SRI LANKA</b>											
<b>Ace Inhibitors</b>											
Captopril	25 mg	2.00	2.99	3.00	4.50	1.50	2.25	37.09	55.64	30.56	45.84
	100 mg	7.98	11.97	12.00	18.00	6.00	9.00	148.37	222.55	122.24	183.36
Enalapril	5 mg	1.33	8.31	2.00	12.50	1.00	6.25	24.73	154.55	20.37	127.33
	20 mg	5.32	33.26	8.00	50.00	4.00	25.00	98.91	618.20	81.49	509.33
Lisinopril	5 mg	1.33	14.97	2.00	22.50	1.00	11.25	24.73	278.19	20.37	229.20
	20 mg	5.32	59.87	8.00	90.00	4.00	45.00	98.91	1112.77	81.49	916.80
Ramipril	1.25 mg		0.83		1.25		0.62		15.46		12.73
	5 mg		3.33		5.00		2.50		61.82		50.93
<b>A2 Receptor Blockers</b>											
Losartan	50 mg	3.99	4.99	6.00	7.50	3.00	3.75	74.18	92.73	61.12	76.40
	100 mg	7.98	9.98	12.00	15.00	6.00	7.50	148.37	185.46	122.24	152.80
Valsartan	80 mg		26.61		40.00		20.00		494.56		407.47
	160 mg		53.22		80.00		40.00		989.13		814.93

Continued.....

Drug by Class	Dose	Monthly cost of therapy		Cost of therapy as a percentage of the average rural household income		Cost of therapy as a percentage of the average urban household income		Cost of therapy as a percentage of the monthly household health expenditure by the public sector		Cost of therapy as a percentage of the monthly household health expenditure by the private sector	
		Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available
<b>Beta Blockers</b>											
Propranolol	40 mg		0.13		0.20		0.10		2.47		2.04
	160 mg		0.53		0.80		0.40		9.89		8.15
Metoprolol	100 mg	2.33	4.99	3.50	7.50	1.75	3.75	43.27	92.73	35.65	76.40
	200 mg	4.66	9.98	7.00	15.00	3.50	7.50	86.55	185.46	71.31	152.80
Atenolol	50 mg	0.67	9.31	1.00	14.00	0.50	7.00	12.36	173.10	10.19	142.61
	100 mg	1.33	14.97	2.00	22.50	1.00	11.25	24.73	278.19	20.37	229.20
<b>Ca Channel Blockers</b>											
Nifedipine	20 mg		15.00		22.55		11.27		278.81		229.71
	80 mg		60.00		90.20		45.10		1115.24		918.84
Amlodipine	5 mg	2.00	14.97	3.00	22.50	1.50	11.25	37.09	278.19	30.56	229.20
	10 mg	3.99	29.93	6.00	45.00	3.00	22.50	74.18	556.38	61.12	458.40
Felodipine	5 mg	2.49	3.16	3.75	4.75	1.87	2.37	46.37	58.73	38.20	48.39
	10 mg	4.99	6.32	7.50	9.50	3.75	4.75	92.73	117.46	76.40	96.77
	20 mg	9.98	12.64	15.00	19.00	7.50	9.50	185.46	234.92	152.80	193.55
Diltiazem	60 mg	1.00	2.00	1.50	3.00	0.75	1.50	18.55	37.09	15.28	30.56
	360 mg	5.99	11.97	9.00	18.00	4.50	9.00	111.28	222.55	91.68	183.36
Verapamil	240 mg		0.80		1.20		0.60		14.84		12.22
	480 mg		1.60		2.40		1.20		29.67		24.45
<b>Diuretics</b>											
Indapamide	2.5 mg		6.32		9.50		4.75		117.46		96.77
Furosemide	20 mg	0.07	0.33	0.10	0.50	0.05	0.25	1.24	6.18	1.02	5.09

Continued.....

Drug by Class	Dose	Monthly cost of therapy		Cost of therapy as a percentage of the average rural household income		Cost of therapy as a percentage of the average urban household income		Cost of therapy as a percentage of the monthly household health expenditure by the public sector		Cost of therapy as a percentage of the monthly household health expenditure by the private sector	
		Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available	Minimum available	Maximum available
Furosemide	40 mg	0.13	0.67	0.20	1.00	0.10	0.50	2.47	12.36	2.04	10.19
Spironolactone	100 mg	1.00	3.33	1.50	5.00	0.75	2.50	18.55	61.82	15.28	50.93
	200 mg	2.00	6.65	3.00	10.00	1.50	5.00	37.09	123.64	30.56	101.87
Hydrochlorothiazide	50 mg		0.07		0.10		0.05		1.24		1.02
Methyldopa	250 mg	2.00	3.99	3.00	6.00	1.50	3.00	37.09	74.18	30.56	61.12
	3 g	23.95	47.89	36.00	72.00	18.00	36.00	445.11	890.22	366.72	733.44
<b>Statins</b>											
Lovastatin	20 mg	3.33	13.30	5.00	20.00	2.50	10.00	61.82	247.28	50.93	203.73
	80 mg	13.30	53.22	20.00	80.00	10.00	40.00	247.28	989.13	203.73	814.93
Simvastatin	10 mg	6.65	19.96	10.00	30.00	5.00	15.00	123.64	370.92	101.87	305.60
	40 mg	26.61	79.82	40.00	120.00	20.00	60.00	494.56	1483.69	407.47	1222.40
Atorvastatin	10 mg	8.31	16.63	12.50	25.00	6.25	12.50	154.55	309.10	127.33	254.67
	40 mg	33.26	66.52	50.00	100.00	25.00	50.00	618.20	1236.41	509.33	1018.67
<b>Fibric acid derivatives</b>											
Gemfibrozil	900 mg	4.49	7.48	6.75	11.25	3.37	5.62	83.46	139.10	68.76	114.60
	1.5 g	7.48	12.47	11.25	18.75	5.62	9.37	139.10	231.83	114.60	191.00



## **APPENDIX B**

### **A Heart Healthy Eating Plan for South Asians**

We recommend that health professionals use this guide while recommending a healthy eating plan.

#### **Lean meat, poultry and fish**

Daily allowance: a serving a day from this group; where applicable and possible at least 2 of these daily servings a week should be of fish. It is preferable to avoid beef. Fat should always be trimmed off meat (except fish meat) before cooking.

- ? One serving of beef or mutton is equal to 3 full size botis.<sup>1</sup>
- ? One serving of chicken is ½ a chicken breast or chicken leg with thigh (without skin).
- ? One serving of fish is the size of a deck of playing cards.
- ? A one-cup serving of cooked beans, peas or lentils (masur, maash, channay, lobia), chick peas (cholay), can replace a serving of meat.

#### **Eggs**

Daily allowance: due to the high cholesterol content of egg yolks, as a general rule, if one egg is eaten then cholesterol in any other form through oils, meat or dairy products, should be reduced. However, egg white is a very good source of protein, has no cholesterol and can be taken daily.

#### **Fruits and vegetables**

Daily allowance: 5 or more servings a day.

- ? One serving is equal to 1 medium-size piece of fruit (e.g. small apple, small banana) or ½-1 cup cooked or raw vegetables.
- ? Coconuts are very high in saturated fat and should be eaten only very occasionally. Jaggery (palm sugar – made from the sap of the coconut palm) is a high calorie item and should be eaten only as a treat.

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<sup>1</sup> A standard size for pieces of meat used in a curry.



### **Low fat milk products**

Daily allowance: servings per day depend on age; for adults aged 19 and above, 2 servings a day are recommended.

One serving is 1 cup of fat-free (packaged) or fresh milk with the cream removed **or** 1 cup yogurt made with such milk **or** 1 oz. Low-fat cheese or ½ cup low fat cottage cheese.

### **Breads, cereals, pasta and starchy vegetables**

Daily allowance: 6 servings a day.

- ? One serving is equal to one slice of bread, one chapatti or dosa (size of a small plate), half a naan (saada not roghni), idli, makki ki roti, etc. **or** 1 cup of cooked rice or pasta **or** ¼ - ½ cup of starchy vegetables (potatoes, corn, green peas, sweet potatoes).

### **Fats and Oils**

Daily allowance: No more than a total of 2-4 servings per day.

- ? One serving is 1 tbsp. of vegetable oil like canola, corn, olive, safflower, sesame, soybean and sunflower.
- ? **or** 1 ½ tsp. of seeds or nuts like almonds, walnuts, pine nuts, pistas, cashew nuts, peanuts.
- ? Note: Remember that all home made or commercially prepared baked and processed foods like cakes, buns, doughnuts, mithai, sweet dishes, and biscuits contain fat in the form of butter, ghee, or oil. This must be taken into account in the servings per day.
- ? Avoid ghee, coconut, palm kernel and palm oil (all solid at room temperature) as they are very high in saturated fats and should be avoided.
- ? In Sri Lanka coconut oil is very widely used; its use should be discouraged.

### **Recommendations for Diabetics:**

*In addition to the above, foods that have a high content of sugar like sugar itself or foods containing high concentrations of sugar are to be avoided. Also to be avoided are very sweet fruits like mangoes, dates, melons and grapes.*



## APPENDIX C

### Methodology

At the executive council meeting of the SAARC Cardiac Society held in Kathmandu, Nepal on July 22, 2000, it was unanimously decided to develop a set of "Guidelines for the Prevention of Coronary Heart Diseases in the SAARC Region". The executive council selected the chief coordinator to steer the development of the guidelines at a central level and regional coordinators to steer input at regional levels in addition to liaising with the chief coordinator. It was also decided that all the members of the SAARC executive council would serve as the SAARC consensus panel, and that the regional coordinators should set up regional consensus panels in their own countries. It was also agreed upon that an international advisory board should be constituted which would give its input to the final draft of the manuscript.

The preparation phase consisted of pre-evaluation surveys, literature review, writing up the report, and input at different levels.

#### Pre-evaluation Survey

*Focus group discussions held independently in India, Pakistan and Bangladesh were employed as part of the pre-evaluation survey that guided the development of these guidelines with respect to its justification, format and content. A field guide was developed which sought responses relating to the relevance of these guidelines to practice in the region and the level of knowledge and beliefs of the health care providers.*

**Bangladesh:** *in Bangladesh a focus group discussion was held with the participation of eight cardiologists and cardiovascular epidemiologists on September 28, 2000. The focus group summarized a review of literature on the prevalence of coronary heart disease within the country, in addition to furnishing details regarding the currently recommended national guidelines for primary and secondary prevention.*

**India:** *the group in India felt that the recommendations should flow from a broad based group both in terms of professional involvement as well as representation from various regions of the country and therefore the views*





*of eminent experts all over the country were solicited. This was thought to be a good surrogate to focus group discussion, which was logistically impractical due to geographic constraints.*

There was near unanimity in the need for the guidelines and also for region specificity. Most respondents felt that the western guidelines were not ideally suited to or were either inadequate or inappropriate in the Indian context. Almost all the respondents were aware of the global CVD trends to a varying extent and believed that the trend had serious implications for the SAARC countries and therefore emphasized upon the need to develop and disseminate guidelines focusing on prevention. Input with regard to diet, physical activity and stress as part of the feedback, has been useful while drawing up the recommendations. It was identified that policy change was essential for bringing CVD on the health care agendas of the SAARC countries. The importance of coordinating efforts within the SAARC countries was also emphasized.

***Pakistan:*** *in Pakistan feedback was sought through questionnaires from cardiologists, general physicians, epidemiologists, dietitians and health policy makers. Majority of the participants of the focus group discussion found this exercise relevant within the framework of the regional health economics. It was agreed unanimously that investment in prevention for the region is imperative. There was a general agreement on the need to customize guidelines with a focus on economic issues while still working within the domain of scientific recommendations. A case was made for economically tiering these guidelines. Input relating to dietary recommendations was also received from the participants, as a result of which the Heart Healthy Eating plan for South Asians has been developed and is appended. With regard to the antismoking strategies, there were differing opinions. Some participants were inclined toward an aggressive policy-based approach whereas others favored a program-based strategy. Integration of physical activity as part of the heart health package was generally visualized as a problem for women; it was emphasized that this issue be addressed appropriately, in keeping with religious and cultural sensitivities.*

*All participants saw pharmaceutical multinational distribution networks as a support structure and a possible conduit for the dissemination of these guidelines but expressed a concern over potential conflict of interest*



*particularly as these guidelines were seen as intending to decrease rather than encourage prescription expense. In this context all participants suggested using alternate means of disseminating these guidelines and highlighted the potential role of training trainers with support from the private and the public sector.*

After the focus group discussions and literature review, the chief coordinator prepared the initial draft, which was approved by the SAARC consensus panel members at the executive council meeting of the SAARC cardiac society in Chennai, India on December 9, 2000. Over the following months feedback received from the members of the International Advisory Board was also incorporated into the document.





## GLOSSARY

ATP:	Adult Treatment Panel
ACE:	Angiotensin Converting Enzyme
BMI:	Body Mass Index
CAD:	Coronary Artery Disease
CHD:	Coronary Heart Disease
COT:	Cigarette and Other Forms of Tobacco Use
CVD:	Cardiovascular Disease
CRP:	C-Reactive Protein
DALY:	Daily Adjusted Life Years
GNP:	Gross National Product
GDP:	Gross Domestic Product
HDL:	High Density Lipoprotein
ICT:	Information Communication Technology
JNC:	Joint National Committee criteria
LDL:	Low Density Lipoprotein
Lp(a):	Lipoprotein A
NCD:	Non Communicable Diseases
NRT:	Nicotine Replacement Therapy
PAI:	Platelet Activation Inhibitor
SES:	Socio-Economic Strata
TC:	Total Cholesterol
TG:	Triglycerides