Supplemental Table 1. Characteristics of ALLHAT C, A, L participants (n=31,350) at baseline and during follow-up by baseline eGFR (CKD-EPI equation) and antihypertensive treatment group.*

	Normal or Increased GFR ($\geq$90 ml/min/1.73m^2)			Mild Reduction in GFR (60-89 ml/min/1.73m^2)			Moderate/Severe Reduction in GFR (<60 ml/min/1.73m^2)		
	Chlor	Amlod	Lisin	Chlor	Amlod	Lisin	Chlor	Amlod	Lisin
Baseline									
Sample Size	3062	1895	1860	8196	4831	4788	3112	1766	1840
Age; mean (SD) y	61.9	61.6	61.7	67.0	67.3	67.0	71.5	71.5	1.6
	(5.3)	(5.2)	(5.2)	(7.1)	(7.2)	(7.1)	(8.0)	(7.8)	(8.1)
Black; n (%)	1433	897	854	2566	1544	1524	1018	557	598
	(46.8)	(47.3)	(45.9)	(31.3)	(32.0)	(31.8)	(32.7)	(31.5)	(32.5)
Women; n (%)	1521	967	893	3642	2120	2088	1537	908	885
	(49.7)	(51.0)	(48.0)	(44.4)	(43.9)	(43.6)	(49.4)	(51.4)	(48.1)
SBP; mean (SD) mmHg	145.5	145.5	146.0	146.2	146.3	146.3	146.9	146.5	147.0
	(15.2)	(15.7)	(15.1)	(15.7)	(15.6)	(15.5)	(16.2)	(16.2)	(16.4)
DBP; mean (SD) mm Hg	85.3	85.1	85.5	84.0	83.9	84.2	82.6	82.5	82.7
	(9.6)	(10.0)	(9.3)	(10.0)	(10.1)	(9.9)	(10.4)	(10.5)	(10.8)
eGFR; mean (SD) ml/min/1.73m^2	98.2	98.5	98.4	74.8	74.7	74.7	49.0	49.3	49.1
	(7.0)	(7.0)	(7.2)	(8.3)	(8.3)	(8.3)	(9.1)	(8.9)	(9.0)
Diabetic; n (%)	1559	948	919	3003	1806	1751	1161	653	655
	(52.5)	(51.8)	(50.8)	(38.4)	(39.4)	(38.3)	(39.8)	(38.8)	(37.9)
Follow-up in-trial at 4 Years									
Sample size ¶	1913	1215	1086	5201	3123	2954	1811	1015	996
SBP; mean (SD) mm Hg	133.5	135.0	135.3	133.6	134.5	135.4	135.3	135.6	136.4
	(15.1)	(14.5)‡	(17.2)‡	(15.5)	(14.6)‡	(17.0)‡	(17.1)	(16.8)	(18.3)
DBP; mean (SD) mm Hg	77.2	76.9	78.0	76.5	75.8	76.4	75.6	74.3	75.5
	(9.4)	(8.9)	(9.9)†	(9.6)	(9.6)‡	(10.2)	(10.0)	(9.7)‡	(11.2)
On statins; n (%) ¶	704	399	426	2078	1292	1189	720	389	387
	(30.6)	(27.7)	(31.7)	(33.8)	(35.1)	(33.7)	(33.3)	(32.3)	(31.9)
eGFR; mean (SD) ml/min/1.73m^2 §	85.7	90.9	87.0	68.6	72.6	69.0	47.4	51.2	7.7
	(15.8)	(14.4)‡	(15.4)†	(14.4)	(14.4)‡	(14.5)	(14.5)	(15.4)‡	(14.3)

* Comparisons are with the chlorthalidone group: † $p<0.05$, ‡ $p<0.01$.
Abbreviations: GFR, glomerular filtration rate; eGFR, estimated GFR; SD, standard deviation; SBP, systolic blood pressure; DBP, diastolic blood pressure; Chlor, chlorthalidone; Amlod, amlodipine; Lisin, lisinopril.
¶ The sample size is based on the number of participants with SBP/DBP measurements. The percent on statins is based on participants with a visit, and the denominators are larger than the indicated sample size. For the year 4 percent on statin, sample sizes are as follows: C, A, L for normal or increased eGFR, 2303, 1441, 1345; C,A,L for mild reduction in GFR, 6138, 3679, 3530; and C,A,L for moderate reduction in GFR, 2160, 1203, 1212.
§ Due to participants with missing GFR values, the year 4 sample sizes for mean eGFR are as follows: C, A, L for normal or increased eGFR, 1718, 1062, 947; C,A,L for mild reduction in GFR, 4672, 2779, 2617; and C,A,L for moderate reduction in GFR, 1546, 853, 821.

Supplemental Table 2. Mortality from all causes, cardiovascular disease, and non-cardiovascular disease (mortality cohort; n=31,350), and cardiovascular outcomes (morbidity and mortality cohort; *n*=20,584) by baseline estimated glomerular filtration rate (eGFR; CKD-EPI equation) for C, A, and L antihypertensive treatment groups.

| GFR | Total Number of Events / Participants | | | 10-Year Rate per 100 Participants | | | HR (95% CI) *p*-value Compared with Chlorthalidone | |
	Chlor	Amlod	Lisin	Chlor	Amlod	Lisin	Amlodipine	Lisinopril
All-cause mortality	5019/14370	2933/8492	2897/8488	33.4	32.9	32.6	0.98 (0.94-1.03) .40	0.97 (0.93-1.02) .23
≥90	795/3062	465/1895	469/1860	25.3	23.8	24.2	0.94 (0.84-1.05) .29	0.98 (0.87-1.09) .69
60-89	2585/8196	1532/4831	1499/4788	29.8	29.8	29.7	0.99 (0.93-1.06) .84	0.99 (0.93-1.05) .71
<60	1639/3112	936/1766	929/1840	50.5	51.3	48.2	1.01 (0.94-1.10) .73	0.94 (0.87-1.02) .15
CVD mortality	2198	1300	1263	16.3	16.0	15.7	0.99 (0.93-1.06) .83	0.97 (0.90-1.04) .36
≥90	287	182	180	10.0	10.1	9.8	1.02 (0.85-1.23) .84	1.04 (0.86-1.25) .69
60-89	1129	678	49	14.5	14.3	14.0	1.01 (0.92-1.11) .89	0.98 (0.89-1.08) .68
<60	782	440	434	28.1	27.8	26.9	1.00 (0.89-1.12) .99	0.92 (0.82-1.04) .18
Non-CVD mortality	2637	1511	1520	19.2	18.8	18.8	0.96 (0.90-1.02) .22	0.97 (0.91-1.03) .36
≥90	471	262	265	15.9	14.2	14.9	0.91 (0.79-1.04) .15	0.97 (0.85-1.11) .64
60-89	1361	803	790	16.8	17.1	17.1	0.98 (0.90-1.07) .64	0.98 (0.90-1.07) .63
<60	805	446	465	29.7	30.0	27.8	1.00 (0.88-1.13) .96	0.96 (0.85-1.09) .53
CHD, Total	1507/9464	884/5572	865/5548	18.8	18.6	18.2	0.98 (0.91-1.07) .70	0.98 (0.90-1.07) .66
≥90	220/1640	119/992	114/990	15.7	13.8	13.3	0.88 (0.71-1.10) .27	0.87 (0.69-1.09) .22
60-89	787/5429	496/3223	460/3156	16.7	17.7	16.5	1.05 (0.94-1.18) .38	1.01 (0.90-1.14) .84
<60	500/2395	269/1357	291/1402	26.7	24.8	26.2	0.94 (0.81-1.09) .39	0.98 (0.85-1.13) .80
CVD, Total	3203	1922	1832	38.5	37.9	37.2	1.02 (0.96-1.07) .59	0.98 (0.93-1.04) .53
≥90	458	278	255	33.0	33.3	31.4	1.00 (0.86-1.16) .98	0.94 (0.81-1.09) .42
60-89	1691	1040	970	36.3	35.8	35.0	1.04 (0.96-1.12) .35	0.99 (0.92-1.08) .89
<60	1054	604	607	50.7	49.5	49.8	1.00 (0.91-1.11) .95	0.98 (0.88-1.08) .64
Stroke, Total	992	582	612	12.9	12.9	13.8	0.98 (0.89-1.09) .74	1.06 (0.96-1.17) .27
≥90	138	84	89	9.7	9.6	10.2	0.99 (0.75-1.29) .92	1.10 (0.84-1.44) .48
60-89	548	317	337	12.3	12.0	13.4	0.96 (0.84-1.11) .60	1.06 (0.93-1.22) .37
<60	306	181	186	17.0	18.0	17.9	1.03 (0.86-1.24) .75	1.03 (0.86-1.23) .77
HF, Total	1143	749	651	15.3	15.9	14.7	1.12 (1.02-1.22) .02	0.98 (0.89-1.08) .64
≥90	163	101	83	12.2	11.1	10.4	1.02 (0.80-1.31) .86	0.86 (0.66-1.11) .25
60-89	580	403	335	13.2	14.7	13.1	1.18 (1.04-1.34)<.01	1.00 (0.88-1.15) .94
<60	400	245	233	23.2	23.2	21.9	1.08 (0.92-1.26) .37	0.98 (0.84-1.16) .85

HF=hospitalized or fatal; cardiovascular disease (CVD) = CVD mortality or first hospitalized nonfatal CVD event: MI, stroke, HF; ESRD = start of dialysis or renal transplant. CVD mortality includes death due to CHD, stroke, HF, or other CVD. (10,849 deaths: 4761 CVD; 5668 non-CVD; 420 unknown causes).

Supplemental Table 3. Mortality from all causes, cardiovascular disease, and non-cardiovascular disease (mortality cohort; n=12,455), and cardiovascular outcomes (morbidity and mortality cohort; *n*=8,229) **in diabetics** by baseline estimated glomerular filtration rate (eGFR; CKD-EPI equation) for C, A, and L antihypertensive treatment groups.

| GFR | Total Number of Events / Participants | | | 10-Year Rate per 100 Participants | | | HR (95% CI) *p*-value Compared with Chlorthalidone | |
	Chlor	Amlod	Lisin	Chlor	Amlod	Lisin	Amlodipine	Lisinopril
All-cause mortality	2292/5723	1329/3407	1270/3325	38.5	37.2	36.4	0.96 (0.90-1.03) .23	0.94 (0.88-1.01) .10
≥90	438/1559	253/948	247/919	27.3	26.1	26.5	0.94 (0.80-1.09) .41	0.96 (0.82-1.12) .60
60-89	1150/3003	684/1806	657/1751	36.5	35.3	35.2	0.97 (0.88-1.07) .54	0.98 (0.893-1.07) .62
<60	704/1161	392/653	366/655	58.4	58.4	53.6	0.99 (0.88-1.13) .94	0.88 (0.78-1.00) .05
CVD mortality	1023	597	552	19.4	18.3	17.9	0.97 (0.87-1.07) .51	0.92 (0.83-1.02) .11
≥90	177	99	93	12.3	10.9	10.8	0.91 (0.71-1.16) .44	0.89 (0.69-1.15) .38
60-89	505	318	284	18.1	17.7	17.2	1.03 (0.89-1.18) .69	0.96 (0.83-1.11) .59
<60	341	180	175	33.6	32.3	30.4	0.94 (0.79-1.13) .51	0.87 (0.73-1.05) .14
Non-CVD mortality	1180	684	660	22.2	21.8	21.1	0.96 (0.87-1.05) .38	0.95 (0.87-1.05) .31
≥90	244	145	138	16.2	16.2	16.1	0.96 (0.78-1.18) .72	0.96 (0.78-1.19) .72
60-89	594	350	347	20.8	20.6	20.4	0.96 (0.84-1.10) .55	1.00 (0.87-1.14) .96
<60	342	189	175	35.8	35.6	31.4	0.99 (0.83-1.18) .91	0.87 (0.72-1.04) .12
CHD, Total	710/3802	401/2233	385/2194	22.5	20.8	20.2	0.94 (0.83-1.06) .29	0.93 (0.82-1.06) .27
≥90	140/868	69/514	64/497	19.3	14.7	15.2	0.80 (0.60-1.06) .12	0.79 (0.59-1.06) .59
60-89	347/2033	225/1231	201/1202	19.8	21.0	18.9	1.06 (0.89-1.25) .52	0.99 (0.83-1.18) .89
<60	223/901	107/488	120/495	33.2	28.2	29.2	0.86 (0.68-1.08) .20	0.95 (0.76-1.18) .63
CVD, Total	1483	887	821	44.9	43.6	42.5	1.00 (0.92-1.09) .93	0.96 (0.88-1.04) .33
≥90	286	166	150	37.2	34.0	34.0	0.95 (0.78-1.15) .59	0.93 (0.76-1.14) .48
60-89	744	482	428	41.9	43.1	40.3	1.08 (0.96-1.21) .22	0.98 (0.87-1.10) .73
<60	453	239	243	60.6	56.1	56.8	0.94 (0.81-1.10) .47	0.95 (0.82-1.11) .55
Stroke, Total	463	274	285	15.4	15.1	16.7	0.98 (0.85-1.14) .82	1.07 (0.92-1.24) .40
≥90	77	55	51	10.4	11.5	12.2	1.15 (0.82-1.63) .42	1.21 (0.85-1.72) .29
60-89	245	147	158	15.1	14.8	16.6	0.98 (0.80-1.20) .83	1.09 (0.90-1.34) .38
<60	141	72	76	21.9	21.1	22.9	0.93 (0.70-1.23) .60	0.95 (0.72-1.25) .70
HF, Total	579	391	337	20.0	20.8	19.7	1.15 (1.01-1.31) .03	1.01 (0.88-1.15) .91
≥90	111	67	60	16.3	14.3	15.1	0.98 (0.72-1.33) .90	0.96 (0.70-1.31) .78
60-89	284	215	166	17.7	20.8	17.7	1.28 (1.07-1.53)<.01	1.00 (0.83-1.21) .99
<60	184	109	111	30.2	29.0	30.2	1.09 (0.86-1.40) .48	1.06 (0.84-1.34) .62

HF=hospitalized or fatal; cardiovascular disease (CVD) = CVD mortality or first hospitalized nonfatal CVD event: MI, stroke, HF; ESRD = start of dialysis or renal transplant. CVD mortality includes death due to CHD, stroke, HF, or other CVD. (4891 deaths: 2172 CVD; 2524 non-CVD; 195 unknown causes).

Supplemental Table 4. End-stage renal disease in ALLHAT chlorthalidone, amlodipine, and lisinopril participants (*n*=31,350). Glomerular filtration rate (GFR) was estimated by the CKD-EPI equation.

| GFR | Total Number of Events / Participants | | | 10-Year Rate per 100 Participants | | | HR (95% CI) *p* value Compared with Chlorthalidone | |
	Chlor	Amlod	Lisin	Chlor	Amlod	Lisin	Amlod	Lisin
Total	371/14370	225/8492	215/8488	3.0	3.0	2.9	1.02 (0.86-1.20) .83	0.98 (0.82-1.15) .78
≥90	37/3062	25/1895	21/1860	1.3	1.6	1.3	1.08 (0.65-1.80) .75	0.94 (0.55-1.61) .95
60-89	99/8196	73/4831	65/4788	1.4	1.7	1.5	1.24 (0.91-1.67) .17	1.12 (0.82-1.53) .48
<60	235/3112	127/1766	129/1840	9.7	9.4	9.0	0.96 (0.77-1.19) .70	0.92 (0.74-1.14) .42
Diabetic*	245/5723	156/3407	158/3325	5.1	5.3	5.7	1.06 (0.86-1.29) .59	1.10 (0.90-1.34) .35
≥90	32/1559	23/948	19/919	2.1	2.9	2.6	1.17 (0.68-1.99) .57	1.01 (0.57-1.78) .97
60-89	68/3003	50/1806	51/1751	2.8	3.1	3.4	1.20 (0.83-1.73) .33	1.28 (0.89-1.84) .18
<60	145/1161	83/653	88/655	17.0	16.2	17.9	1.03 (0.79-1.35) .83	1.03 (0.79-1.35) .81
Non-diabetic*	110/7993	61/4689	52/4786	1.5	1.5	1.1	0.94 (0.69-1.29) .70	0.79 (0.57-1.09) .16
≥90	5/1412	1/883	2/891	0.4	0.1	0.1	0.32 (0.04-2.72) .30	0.64 (0.12-3.30) .60
60-89	26/4822	18/2776	11/2823	0.6	0.7	0.4	1.19 (0.65-2.17) .57	0.72 (0.35-1.45) .35
<60	79/1759	42/1030	39/1072	5.6	5.6	4.5	0.92 (0.63-1.33) .65	0.81 (0.55-1.19) .29

ESRD = start of dialysis or renal transplant; USRDS Data.
*Baseline history of diabetes or fasting glucose ≥ 126 mg/dl (or nonfasting glucose ≥ 200 mg/dl if baseline fasting glucose missing).
Participants missing a baseline glucose measure (*n*=1427) were excluded from diabetic status subgroups.

Supplemental Table 5. Time-Dependent Cox Regression Analyses of Outcome Results In-Trial and Post-Trial. Estimated GFR from CKD-EPI equation.

| | HR (95% CI) p-value | | | | | |
| | Amlod vs Chlor | | | Lisin vs Chlor | | |
	In-trial	Post-trial	Time Interaction *p*-value	In-trial	Post-trial	Time Interaction *p*-value
GFR <60						
ESRD	0.97 (0.72-1.31) .83	0.95 (0.70-1.29) .74	0.93	0.98 (0.73-1.31) .87	0.86 (0.63-1.17) .33	0.55
Non-fatal MI + Fatal CHD	1.00 (0.83-1.20) .98	0.85 (0.66-1.08) .18	0.29	0.96 (0.79-1.15) .64	1.02 (0.82-1.29) .84	0.65
Combined CVD	1.06 (0.93-1.21) .36	0.92 (0.79-1.08) .32	0.18	1.01 (0.88-1.15) .91	0.94 (0.81-1.10) .45	0.52
Stroke	1.04 (0.81-1.34) .75	1.01 (0.77-1.33) .92	0.88	0.97 (0.76-1.26) .84	1.10 (0.84-1.43) .49	0.64
Heart failure (HF)	1.20 (0.97-1.49) .10	0.94 (0.74-1.20) .63	0.14	1.13 (0.91-1.40) .28	0.83 (0.65-1.06) .14	0.07
All-Cause Mortality	1.04 (0.92-1.16) .56	1.00 (0.89-1.12) .96	0.65	0.97 (0.86-1.09) .58	0.92 (0.82-1.03) .13	0.51
CVD Mortality	1.09 (0.93-1.29) .28	0.91 (0.77-1.08) .29	0.13	0.93 (0.79-1.10) .40	0.91 (0.77-1.08) .27	0.87
Non-CVD Mortality	0.91 (0.76-1.08) .28	1.05 (0.90-1.22) .55	0.23	0.99 (0.84-1.17) .92	0.93 (0.80-1.09) .39	0.61
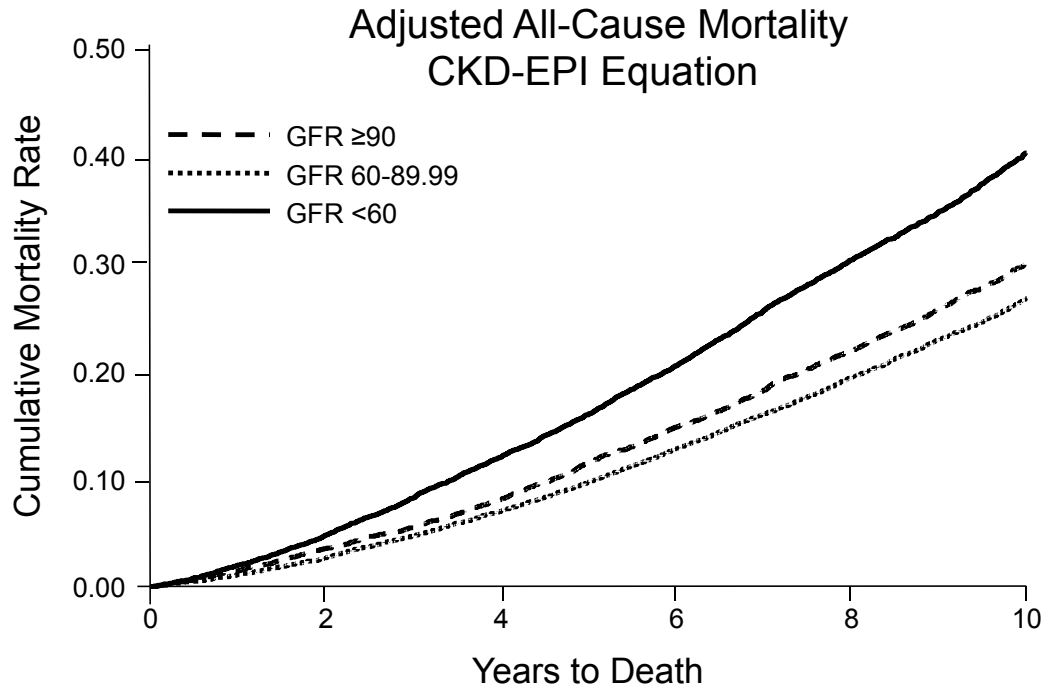
Supplemental Figure 1. Adjusted all-cause mortality by baseline eGFR strata (CKD-EPI equation).