Supplemental Table 1 Descriptive characteristics of the age-eligible samples in the baseline 2010-11 wave by analytic, missing blood pressure (BP) and covariates and missing vital status samples, South African National Income Dynamics Study (N = 8,338).
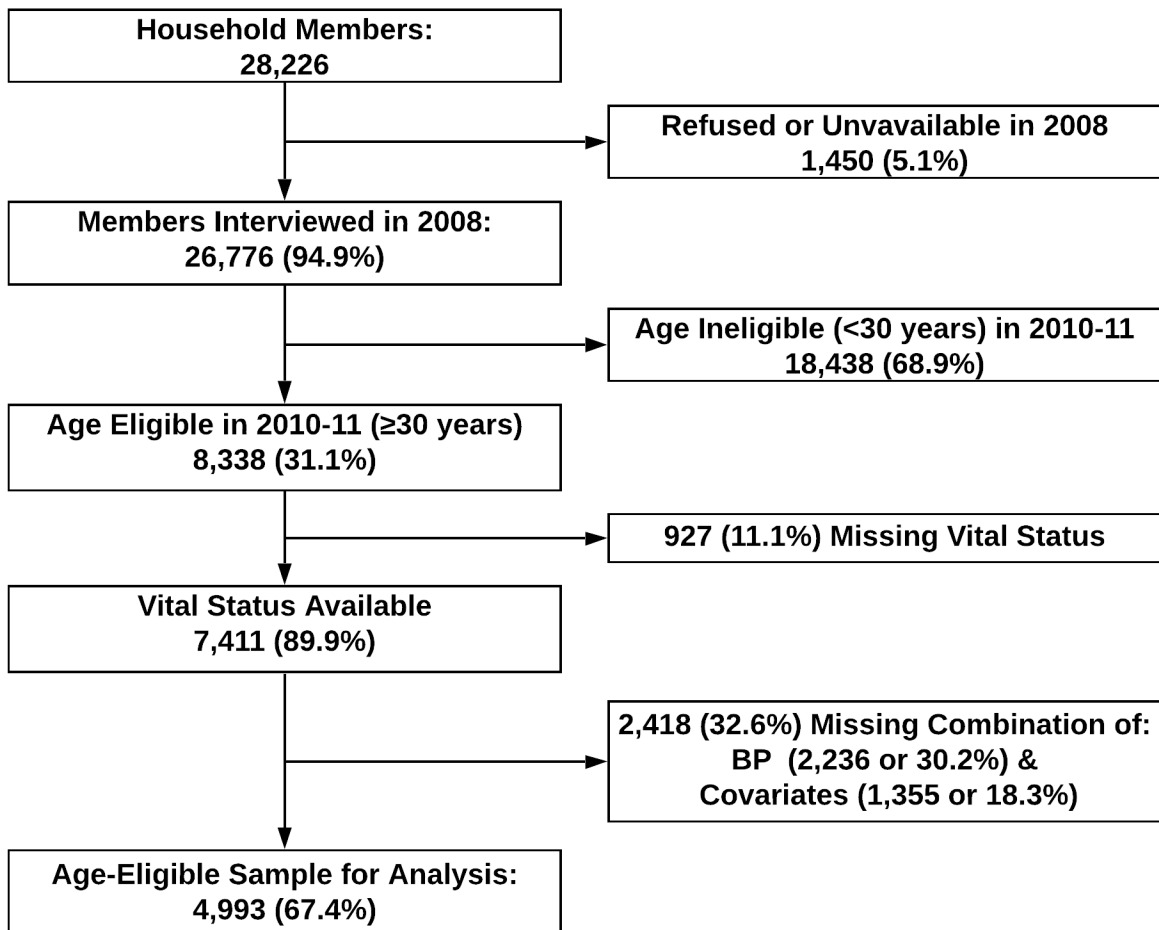
Characteristics	Analytic 4,993 (60%)	Missing BP & Covariate Data 2,418 (30%)	Missing Vital Status 927 (11%)
	No. or mean (% or SD)		
Age (years)	50.5 (14.0)	51.00 (15.15)	47.9 (13.2)
Women	3,432 (68.7)	1321 (54.6)	493 (53.2)
Race			
African	4,226 (84.6)	1,699 (70.3)	544 (58.7)
Coloured	628 (12.6)	509 (21.1)	164 (17.7)
Asian/Indian	52 (1.0)	38 (1.6)	35 (3.8)
White	87 (1.7)	172 (7.1)	184 (19.8)
Marital status			
Married or living with a partner	2,530 (50.7)	1,054 (50.3)	509 (58.2)
Widow, divorced, or separated	980 (19.6)	389 (18.6)	124 (14.2)
Never married	1,483 (29.7)	653 (31.2)	241 (27.6)
Completed schooling			
No schooling	1,162 (23.3)	527 (21.8)	125 (13.5)
Primary and secondary	3,399 (68.1)	1,595 (66.0)	546 (59.1)
Tertiary	432 (8.7)	294 (12.2)	253 (27.4)
Geography type			
Urban	2,191 (43.9)	1,279 (53.6)	603 (66.0)
Traditional	2,394 (47.9)	883 (37.0)	210 (23.0)
Farms	408 (8.2)	223 (9.4)	101 (11.1)
Province			
Western Cape	395 (7.9)	507 (21.0)	200 (21.8)
Eastern Cape	686 (13.7)	264 (10.9)	63 (6.9)
Northern Cape	396 (7.9)	260 (10.8)	77 (8.4)

Free State	294 (5.9)	149 (6.2)	52 (5.7)
KwaZulu-Natal	1,492 (29.9)	589 (24.4)	191 (20.8)
North West	351 (7.0)	168 (7.0)	60 (6.5)
Gauteng	497 (10.0)	178 (7.4)	145 (15.8)
Mpumalanga	396 (7.9)	115 (4.8)	88 (9.6)
Limpopo	486 (9.7)	184 (7.6)	43 (4.7)
Self-reported health status			
Excellent	1,351 (27.1)	531 (25.2)	297 (34.3)
Very good	1,390 (27.8)	528 (25.1)	253 (29.2)
Good	1,261 (25.3)	560 (26.6)	209 (24.1)
Fair	679 (13.6)	320 (15.2)	79 (9.1)
Poor	312 (6.2)	167 (7.9)	29 (3.3)
Current smoker	807 (16.2)	408 (22.2)	179 (22.2)
Number of days of alcohol use per week			
< 1	4,664 (93.4)	1,640 (89.4)	728 (90.1)
1-2	204 (4.1)	111 (6.1)	51 (6.3)
≥ 3	125 (2.5)	83 (4.5)	29 (3.6)
Reported frequency of exercising per week			
< 1	4,446 (89.0)	1573 (86.5)	619 (77.2)
1-2	332 (6.6)	144 (7.9)	115 (14.3)
≥ 3	215 (4.3)	102 (5.6)	68 (8.5)
Body mass index (kg/m2)	28.4 (7.6)	28.9 (8.5)	28.5 (7.6)

Supplemental Table 2 Age and six-year mortality distribution, South African National Income

Dynamics Study (N = 4,993).

Age	Population N (%)	6-year mortality N (%)
30-34	656 (13.1)	53 (6.9)
35-39	677 (13.6)	53 (6.9)
40-44	645 (12.9)	52 (6.8)
45-49	629 (12.6)	59 (7.7)
50-54	566 (11.3)	76 (9.9)
55-59	518 (10.4)	86 (11.2)
60-64	416 (8.3)	79 (10.3)
65-69	293 (5.9)	72 (9.4)
70-74	275 (5.5)	90 (11.7)
75-79	165 (3.3)	70 (9.1)
≥ 80	153 (3.1)	78 (10.2)
Total	4,993 (100)	768 (100)

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┌─────────────────────────────┐
│      Household Members:      │
│           28,226            │
└─────────────────────────────┘
              │              ┌──────────────────────────────────┐
              │─────────────▶│  Refused or Unvavailable in 2008 │
              │              │          1,450 (5.1%)            │
              ▼              └──────────────────────────────────┘
┌─────────────────────────────┐
│  Members Interviewed in 2008:│
│        26,776 (94.9%)        │
└─────────────────────────────┘
              │              ┌──────────────────────────────────┐
              │─────────────▶│  Age Ineligible (<30 years) in   │
              │              │         2010-11                  │
              │              │        18,438 (68.9%)            │
              ▼              └──────────────────────────────────┘
┌─────────────────────────────┐
│ Age Eligible in 2010-11      │
│      (≥30 years)             │
│        8,338 (31.1%)         │
└─────────────────────────────┘
              │              ┌──────────────────────────────────┐
              │─────────────▶│ 927 (11.1%) Missing Vital Status │
              │              └──────────────────────────────────┘
              ▼
┌─────────────────────────────┐
│   Vital Status Available     │
│        7,411 (89.9%)         │
└─────────────────────────────┘
              │              ┌──────────────────────────────────────┐
              │─────────────▶│ 2,418 (32.6%) Missing Combination of:│
              │              │      BP  (2,236 or 30.2%) &          │
              │              │   Covariates (1,355 or 18.3%)        │
              ▼              └──────────────────────────────────────┘
┌─────────────────────────────┐
│ Age-Eligible Sample for      │
│  Analysis:                   │
│        4,993 (67.4%)         │
└─────────────────────────────┘
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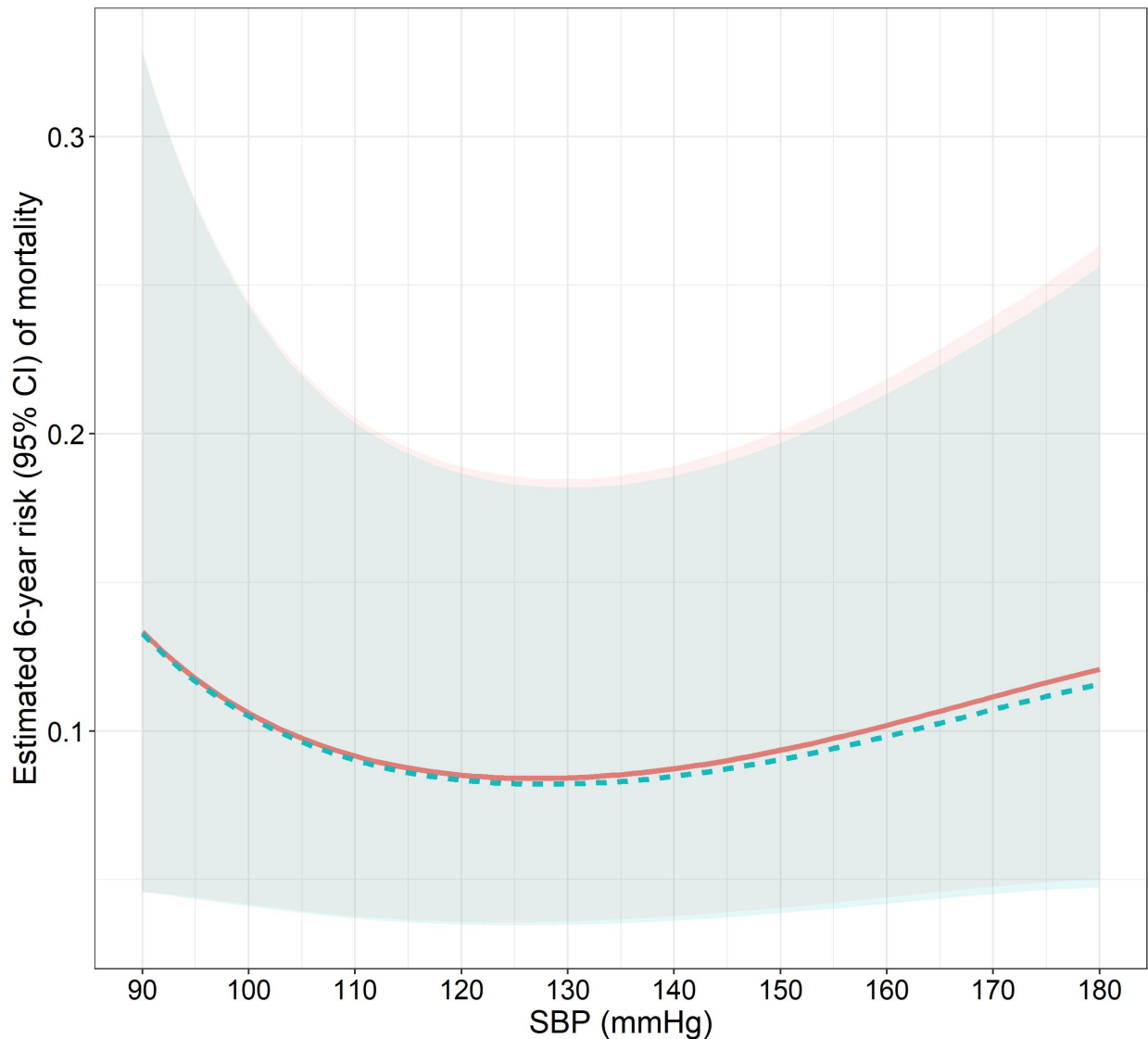
Supplemental Figure 1 Flowchart for sample selection.
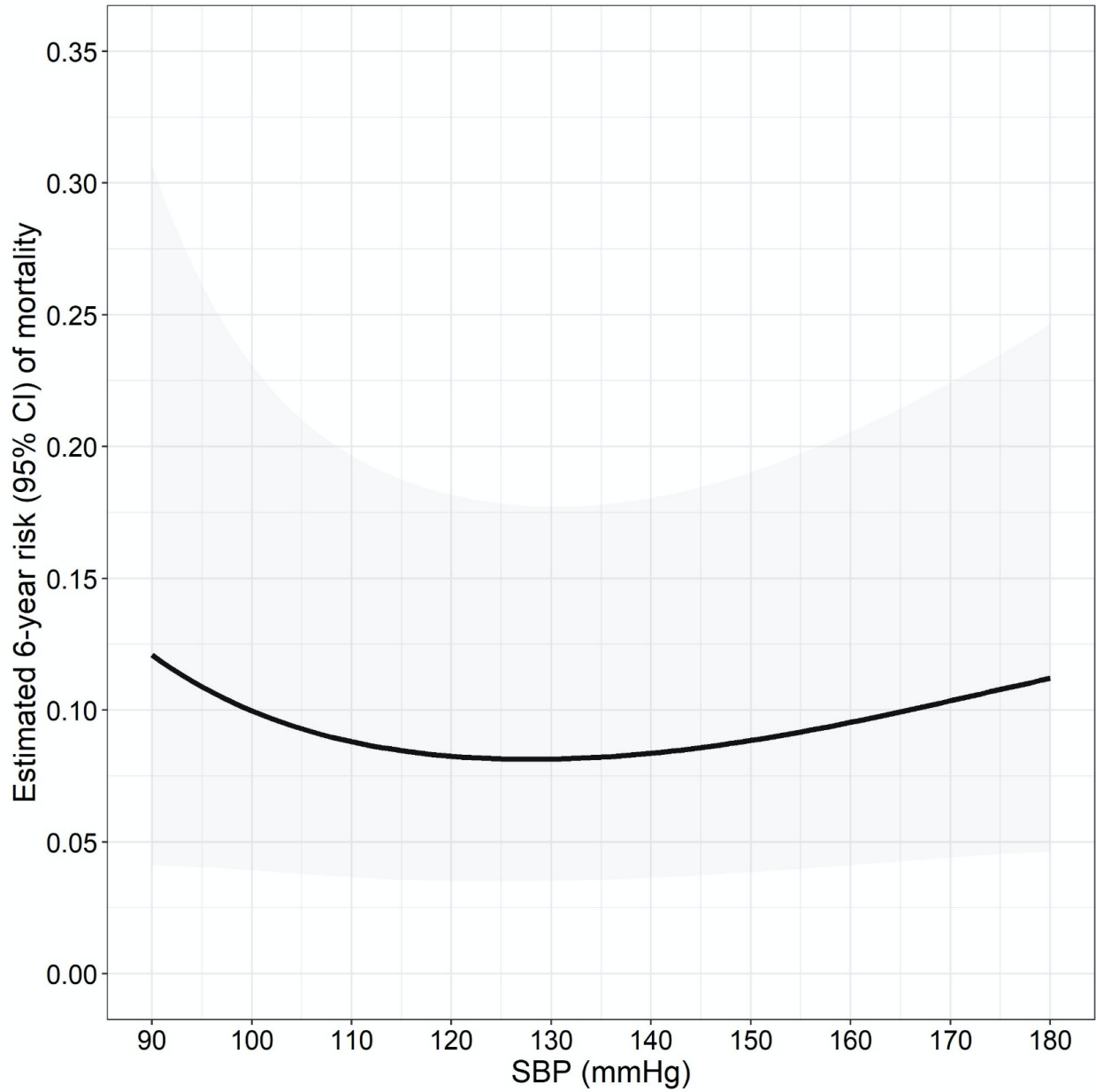
Supplemental Figure 2 Adjusted relationship between systolic blood pressure (SBP) and six-year mortality risk.

[a]The results are adjusted for age, sex, race, marital status, formal school, geography type, province, self-reported health status, current smoking, exercise, alcohol use, and weight (BMI), and are weighted by the NIDS design weights to adjust for the survey sampling procedures and household non-responses in the baseline survey wave.
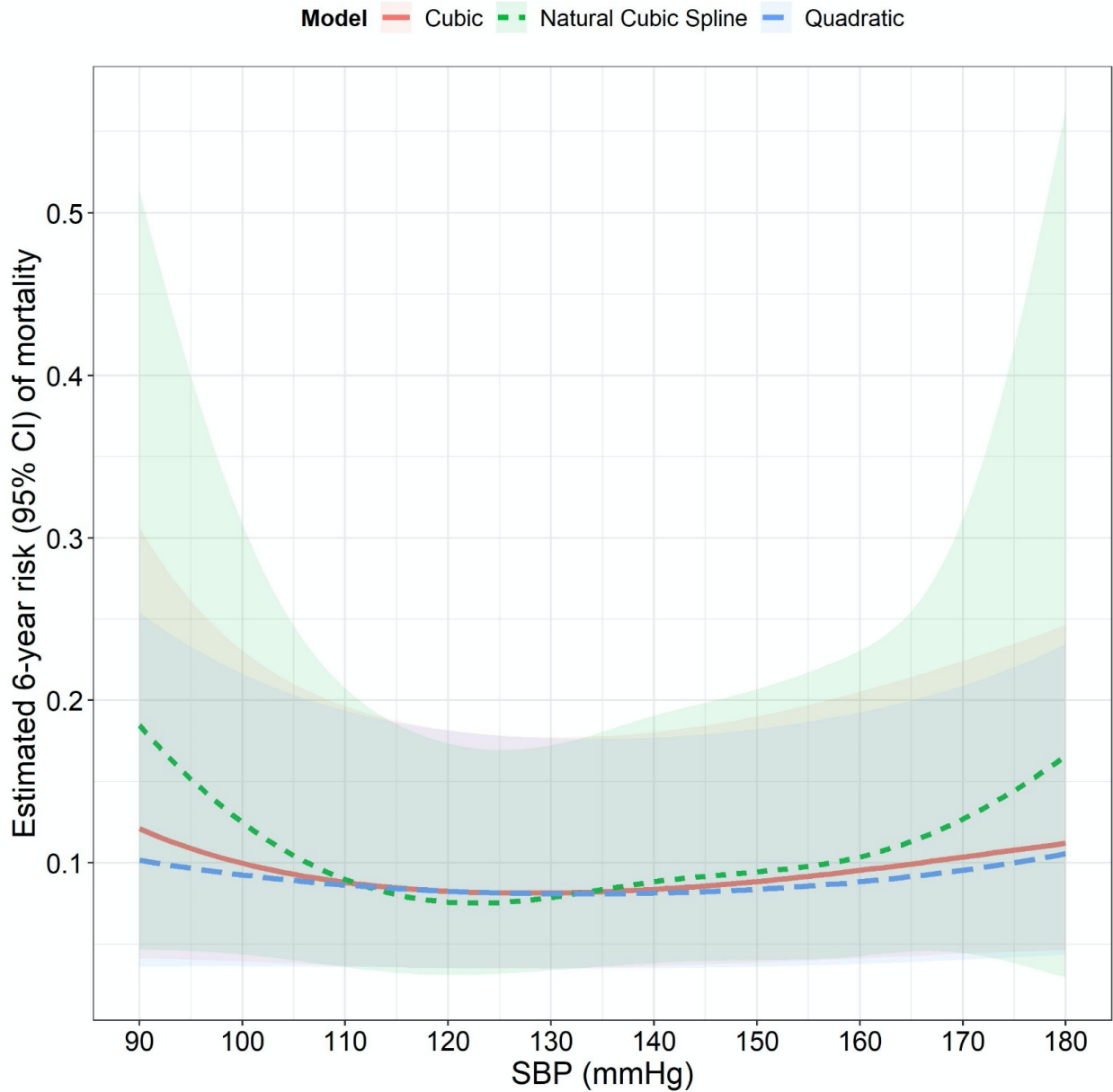
Supplemental Figure 3 Adjusted relationship between systolic blood pressure (SBP) and six-year mortality risk.

[a]The results depicted in the red line (main results) are adjusted for age, sex, race, marital status, formal school, geography type, province, self-reported health status, current smoking, exercise, alcohol use, and weight (BMI) while those depicted in the green dotted line included the same variable in addition to the self-reported blood pressure (BP) lowering medicine We weighted the analysis by the NIDS design weights to adjust for the survey sampling procedures and household non-responses in the baseline survey wave.

[b]Among the 4,993 participants in the analytical sample, 965 (19.3%) self-reported as using BP-lowering medicine.

Supplemental Figure 4 Adjusted relationship between systolic blood pressure (SBP) and six-year mortality risk, modeling SBP as a cubic and quadratic function and natural cubic splines.

[a]The results are adjusted for age, sex, race, marital status, formal school, geography type, province, self-reported health status, current smoking, exercise, alcohol use, and weight (BMI), and are weighted by the NIDS design weights to adjust for the survey sampling procedures and household non-responses in the baseline survey wave.

[b]SBP modeled as a quadratic function, cubic function, and natural cubic spline with knots at 120, 140, and 160 mmHg. The Akaike Information Criterion (AIC) were similar across models (quadratic model: AIC = 3,268; cubic model: AIC = 3,268; natural cubic spline: AIC = 3,268). We selected the cubic model as our main model.

Supplemental Table 3 Estimated proportion of the population in need of care and mean systolic blood pressure (SBP) reductions for different SBP reduction scenarios by sex, race, and residence type.

	Share in Need of Care			
	120 (mmHg)	130 (mmHg)	140 (mmHg)	150 (mmHg)
Overall	65.4 (64.1, 66.7)	43.4 (42.0, 44.7)	26.6 (25.4, 27.8)	16.3 (15.3, 17.3)
Sex				
Men	70.9 (68.6, 73.3)	43.4 (40.9, 45.8)	24.3 (22.2, 26.3)	15.4 (13.6, 17.2)
Women	62.8 (61.3, 64.4)	43.4 (41.8, 45.0)	27.7 (26.2, 29.2)	16.7 (15.5, 18.0)
Race				
African	65.4 (64.0, 66.9)	42.9 (41.5, 44.4)	26.6 (25.3, 27.9)	16.2 (15.1, 17.3)
Coloured	72.0 (67.7, 76.3)	50.1 (45.1, 55.0)	31.3 (26.7, 35.9)	20.6 (16.4, 24.8)
Asian/Indian	50.4 (38.6, 62.1)	35.8 (25.0, 46.6)	24.3 (14.3, 34.2)	12.2 (4.5, 20.0)
White	56.5 (49.6, 63.4)	43.6 (36.6, 50.6)	18.7 (13.2, 24.1)	11.6 (7.2, 16.0)
Geography type				
Urban	63.7 (61.9, 65.4)	41.9 (40.1, 43.7)	25.4 (23.7, 27.1)	16.4 (15.0, 17.7)
Traditional	67.0 (65.0, 69.1)	45.6 (43.5, 47.7)	28.3 (26.5, 30.2)	16.6 (15.0, 18.2)
Farms	70.1 (64.7, 75.5)	42.4 (36.7, 48.0)	25.8 (20.4, 31.2)	13.5 (9.4, 17.5)

	Mean SBP Reductions			
	120 (mmHg)	130 (mmHg)	140 (mmHg)	150 (mmHg)
Overall	-13.8 (-14.3, -13.3)	-8.3 (-8.7, -7.9)	-4.8 (-5.1, -4.5)	-2.7 (-3.0, -2.5)
Sex				
Men	-13.6 (-14.4, -12.8)	-7.9 (-8.5, -7.2)	-4.5 (-5.0, -3.9)	-2.5 (-2.9, -2.1)
Women	-13.9 (-14.5, -13.2)	-8.6 (-9.1, -8.1)	-5.0 (-5.4, -4.6)	-2.8 (-3.1, -2.5)
Race				
African	-13.7 (-14.3, -13.2)	-8.3 (-8.8, -7.9)	-4.9 (-5.2, -4.5)	-2.7 (-3.0, -2.5)
Coloured	-16.6 (-18.4, -14.7)	-10.3 (-11.9, -8.7)	-6.1 (-7.4, -4.8)	-3.6 (-4.6, -2.6)
Asian/Indian	-10.1 (-13.3, -7.0)	-5.8 (-8.1, -3.5)	-2.9 (-4.4, -1.5)	-1.0 (-1.7, -0.3)
White	-10.8 (-12.8, -8.8)	-5.9 (-7.4, -4.4)	-2.9 (-4.0, -1.8)	-1.4 (-2.1, -0.7)
Geography type				
Urban	-13.6 (-14.2, -12.9)	-8.3 (-8.8, -7.7)	-4.9 (-5.4, -4.5)	-2.9 (-3.2, -2.6)
Traditional	-14.1 (-14.8, -13.4)	-8.5 (-9.1, -7.9)	-4.8 (-5.2, -4.4)	-2.6 (-2.9, -2.3)
Farms	-13.3 (-15.2, -11.5)	-7.6 (-9.2, -6.0)	-4.1 (-5.4, -2.9)	-2.1 (-3.0, -1.3)

[a]We weighted the results by the NIDS design weights to adjust for the survey sampling procedures and household non-responses in the baseline survey wave.

[b]All p-values corresponding to estimates in this table were < 0.0001.

Supplemental Table 4 Number needed to treat in the analytic sample and among adults aged

≥50 years old.

| Scenarios	Analytic Sample (N=4,993)	Ages 30-49 (N=2607)	Ages 50+ (N=2,386)
120-mmHg	113	115	117
130-mmHg	56	84	70
140-mmHg	47	54	54
150-mmHg	50	40	50

[a]We weighted the results by the NIDS design weights to adjust for the survey sampling

procedures and household non-responses in the baseline survey wave.
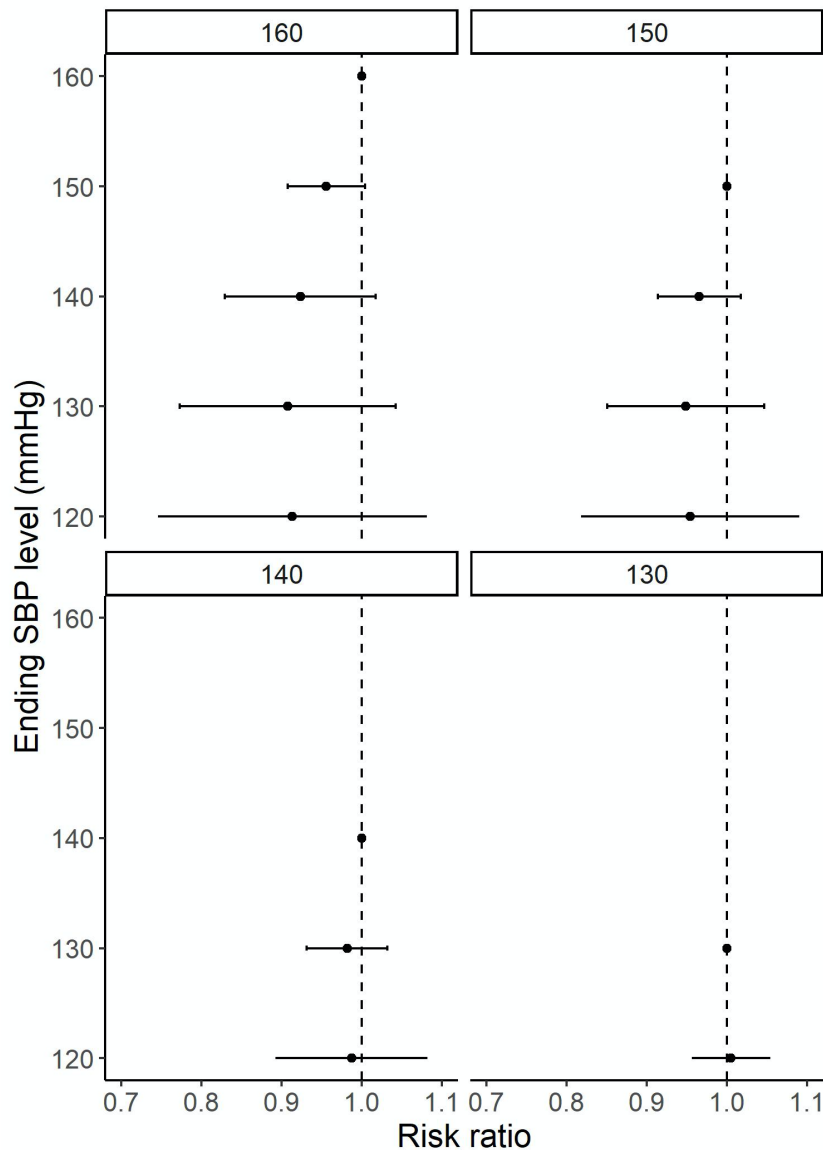
Supplemental Figure 5 Average six-year mortality risk reductions associated with reducing SBP from specific starting (160, 150, 140, and 130 mmHg) to ending (150, 140, 130, and 120 mmHg) levels with multiple imputation for missing data.

[a]Error bars are 95% confidence intervals.

[b]The results are adjusted for age, sex, race, marital status, formal school, geography type, province, self-reported health status, current smoking, exercise, alcohol use, and weight (BMI), and are weighted by the NIDS design weights to adjust for the survey sampling procedures and household non-responses in the baseline survey wave.
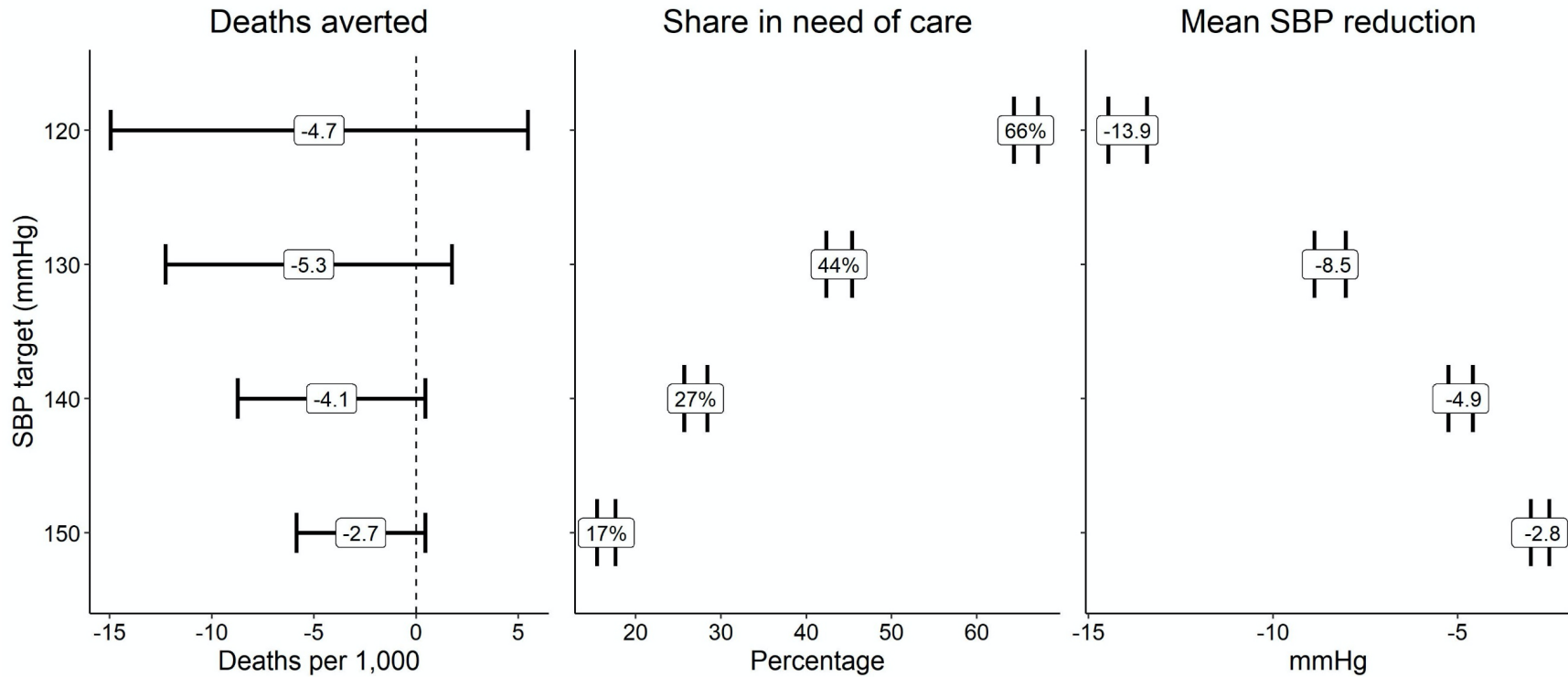
Supplemental Figure 6 Estimated mortality averted per 1,000, population coverage, and mean SBP reduction for different systolic blood pressure (SBP) reduction scenarios will multiple imputation for missing data.

[a]Error bars represent 95% confidence intervals.

[b]The results are adjusted for age, sex, race, marital status, formal school, geography type, province, self-reported health status, current smoking, exercise, alcohol use, and weight (BMI), and are weighted by the NIDS design weights to adjust for the survey sampling procedures and household non-responses in the baseline survey wave.