Supplementary Material for IEEE JBHI Submission

A. Distribution of all attributes for both SPRINT and ALLHAT population

We present the distribution of all features used for both SPRINT and ALLHAT trial evaluation in Table I and Table II respectively. In both cases, the TA and CC column represents the trial population and the Biased EC column represents the real-world data from which the synthetic controls are borrowed.

TABLE I: Distribution of all attributes in FRESCA Cohorts and Biased EC Cohorts in SPRINT

	TA	CC	Biased EC
	(N=4234)	(N=2000)	(N=2200)
Age_Group			
40-59	923 (21.8%)	438 (21.9%)	334 (15.2%)
59+	3311 (78.2%)	1562 (78.1%)	1866 (84.8%)
Gender			
Female	1499 (35.4%)	691 (34.6%)	631 (28.7%)
Male	2735 (64.6%)	1309 (65.5%)	1569 (71.3%)
Race_or_Ethnicity			
Hispanic	479 (11.3%)	225 (11.3%)	389 (17.7%)
NH Asian	42 (1.0%)	15 (0.8%)	138 (6.3%)
NH Black	1232 (29.1%)	616 (30.8%)	468 (21.3%)
NH White	2451 (57.9%)	1128 (56.4%)	1172 (53.3%)
Other	30 (0.7%)	16 (0.8%)	33 (1.5%)
Education			
Below HSG	83 (2.0%)	32 (1.6%)	69 (3.1%)
>=College grad	1673 (39.5%)	844 (42.2%)	885 (40.2%)
HSG/GED	698 (16.5%)	319 (16.0%)	371 (16.9%)
Some college/TS	1780 (42.0%)	805 (40.3%)	875 (39.8%)
Smoker			
No smoke	3633 (85.8%)	1718 (85.9%)	1811 (82.3%)
Smoke	601 (14.2%)	282 (14.1%)	389 (17.7%)
SBP			
SBP 130-139	1547 (36.5%)	733 (36.7%)	783 (35.6%)
SBP>=140	2687 (63.5%)	1267 (63.4%)	1417 (64.4%)
FPG			
Glucose 100-125	1648 (38.9%)	791 (39.6%)	915 (41.6%)
Glucose<100	2453 (57.9%)	1147 (57.4%)	1235 (56.1%)
Glucose>=126	133 (3.1%)	62 (3.1%)	50 (2.3%)
TC			
High TC	1524 (36.0%)	735 (36.8%)	745 (33.9%)
Normal TC	2710 (64.0%)	1265 (63.3%)	1455 (66.1%)
CVDHISTORY			
NO	3404 (80.4%)	1625 (81.3%)	1194 (54.3%)
Yes	830 (19.6%)	375 (18.8%)	1006 (45.7%)
CVDPOINTS			
High	894 (21.1%)	438 (21.9%)	984 (44.7%)
Moderate	3340 (78.9%)	1562 (78.1%)	1216 (55.3%)
SERUMCREAT			
Mean (SD)	1.18 (4.02)	1.05 (0.319)	1.11 (0.358)
Median [Min, Max]	1.00 [0.400, 174]	1.00 [0.400, 3.44]	1.01 [0.400, 2.97]
GFRESTIMATE			
Disease	1104 (26.1%)	486 (24.3%)	686 (31.2%)
Normal	3130 (73.9%)	1514 (75.7%)	1514 (68.8%)

TABLE II: Distribution of all attributes in FRESCA Cohorts and Biased EC Cohorts in ALLHAT

	TA	CC	Biased EC
	(N=8116)	(N=4000)	(N=9762)
Age_Group			
40-59	1549 (19.1%)	772 (19.3%)	5841 (59.8%)
59+	6567 (80.9%)	3228 (80.7%)	3921 (40.2%)
Gender			
Female	3728 (45.9%)	1875 (46.9%)	2752 (28.2%)
Male	4388 (54.1%)	2125 (53.1%)	7010 (71.8%)
Race_or_Ethnicity			
Hispanic	1389 (17.1%)	740 (18.5%)	1671 (17.1%)
NH Asian	84 (1.0%)	41 (1.0%)	693 (7.1%)
NH Black	2525 (31.1%)	1265 (31.6%)	1937 (19.8%)
NH White	4050 (49.9%)	1921 (48.0%)	5285 (54.1%)
Other	68 (0.8%)	33 (0.8%)	176 (1.8%)
Education			
Below HSG	2979 (36.7%)	1491 (37.3%)	2543 (26.1%)
>=College grad	435 (5.4%)	203 (5.1%)	990 (10.1%)
HSG/GED	2348 (28.9%)	1130 (28.3%)	2481 (25.4%)
Some college/TS	2354 (29.0%)	1176 (29.4%)	3748 (38.4%)
Prior_HypTreat			
No	779 (9.6%)	385 (9.6%)	959 (9.8%)
Yes	7337 (90.4%)	3615 (90.4%)	8803 (90.2%)
SBP			
Mean (SD)	146 (15.7)	146 (15.8)	144 (14.2)
Median [Min, Max]	146 [80.0, 180]	146 [96.0, 180]	143 [91.0, 180]
DBP			
Mean (SD)	83.9 (10.2)	84.2 (10.0)	84.9 (10.1)
Median [Min, Max]	84.0 [35.0, 116]	85.0 [30.0, 110]	85.0 [48.0, 110]
Smoker			
No smoke	6348 (78.2%)	3113 (77.8%)	4004 (41.0%)
Smoke	1768 (21.8%)	887 (22.2%)	5758 (59.0%)
Had_MIS			
NO	6217 (76.6%)	3046 (76.2%)	7862 (80.5%)
Yes	1899 (23.4%)	954 (23.9%)	1900 (19.5%)
Had_CRV			
NO	7069 (87.1%)	3477 (86.9%)	8043 (82.4%)
Yes	1047 (12.9%)	523 (13.1%)	1719 (17.6%)
Had_ASCVD			
NO	6160 (75.9%)	3102 (77.6%)	8169 (83.7%)
Yes	1956 (24.1%)	898 (22.5%)	1593 (16.3%)
Had_MajorST			
NO	7279 (89.7%)	3592 (89.8%)	3953 (40.5%)
Yes	837 (10.3%)	408 (10.2%)	5809 (59.5%)
Had_T2D			
NO	5167 (63.7%)	2541 (63.5%)	7272 (74.5%)
Yes	2949 (36.3%)	1459 (36.5%)	2490 (25.5%)
Had_HDLC			
NO	7169 (88.3%)	3536 (88.4%)	3870 (39.6%)
Yes	947 (11.7%)	464 (11.6%)	5892 (60.4%)
Had_LVH_ELCT			
NO	6773 (83.5%)	3305 (82.6%)	8440 (86.5%)
Yes	1343 (16.5%)	695 (17.4%)	1322 (13.5%)
Had_LVH_ECHO			
NO	7740 (95.4%)	3810 (95.3%)	9505 (97.4%)
Yes	376 (4.6%)	190 (4.8%)	257 (2.6%)
Has_CHD			
NO	6083 (75.0%)	2958 (74.0%)	7059 (72.3%)
Yes	2033 (25.0%)	1042 (26.1%)	2703 (27.7%)
BMI			
Mean (SD)	29.6 (5.87)	29.7 (6.06)	29.8 (5.37)
Median [Min, Max]	28.8 [11.0, 71.6]	28.8 [12.9, 64.5]	29.5 [13.3, 60.0]

B. Examination of Variation in CC Size on PHR and CTD estimation on the SPRINT population

(a) PHR Estimates of SPRINT
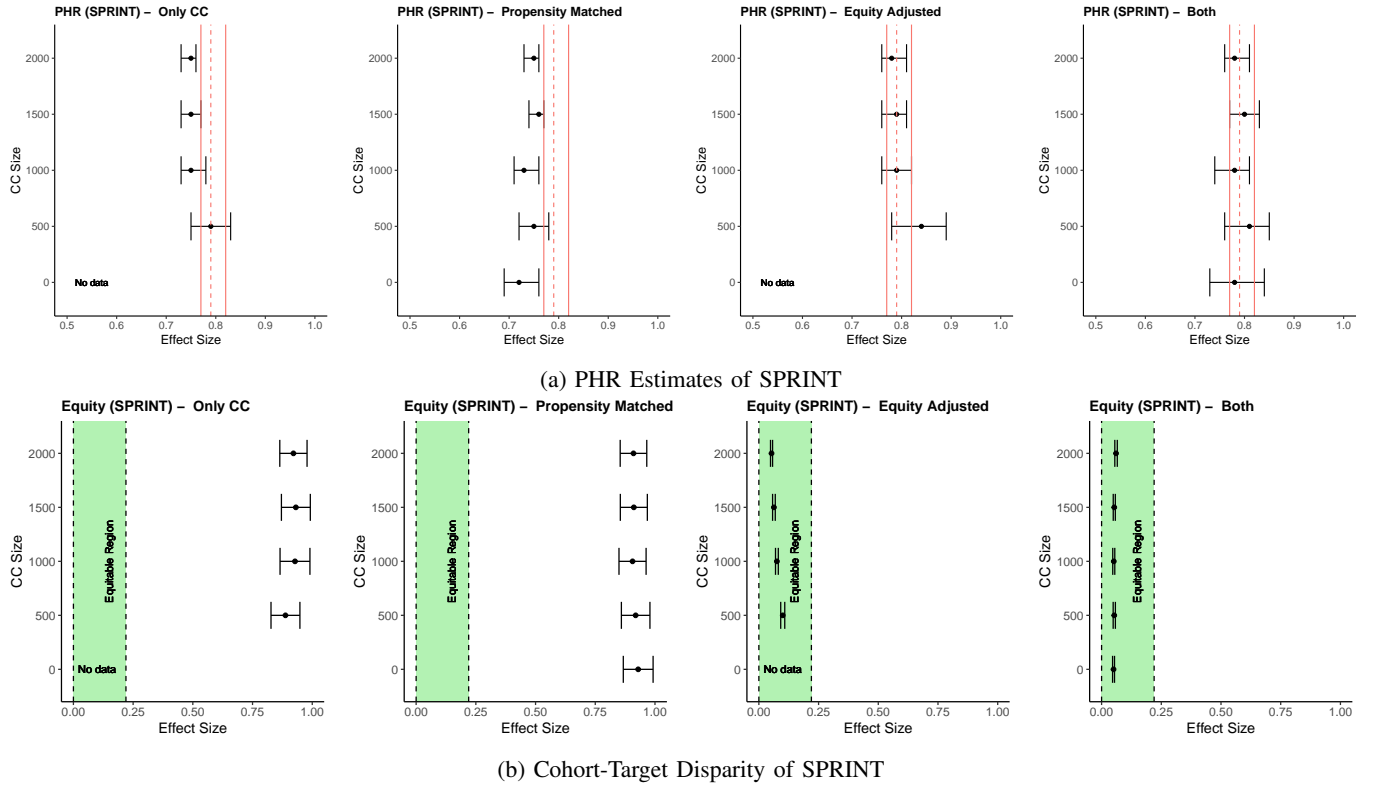

(b) Cohort-Target Disparity of SPRINT

Fig. 1: PHR Estimates and Cohort-Target Disparity of SPRINT (N_{TA}=2000, N_{CC}={0,500,1000,1500, 2000}) showing the effect of varying CC Size.