

## SUPPLEMENT

The effectiveness of COVID-19 vaccines to prevent post COVID cardiac and thromboembolic complications.

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**Figure S1: Follow-up in vaccinated and unvaccinated cohorts.**

(A) Main analysis, (B) Follow-up ends at first vaccine dose after index date, (C) Post COVID sequelae refers just to the first outcome after infection.

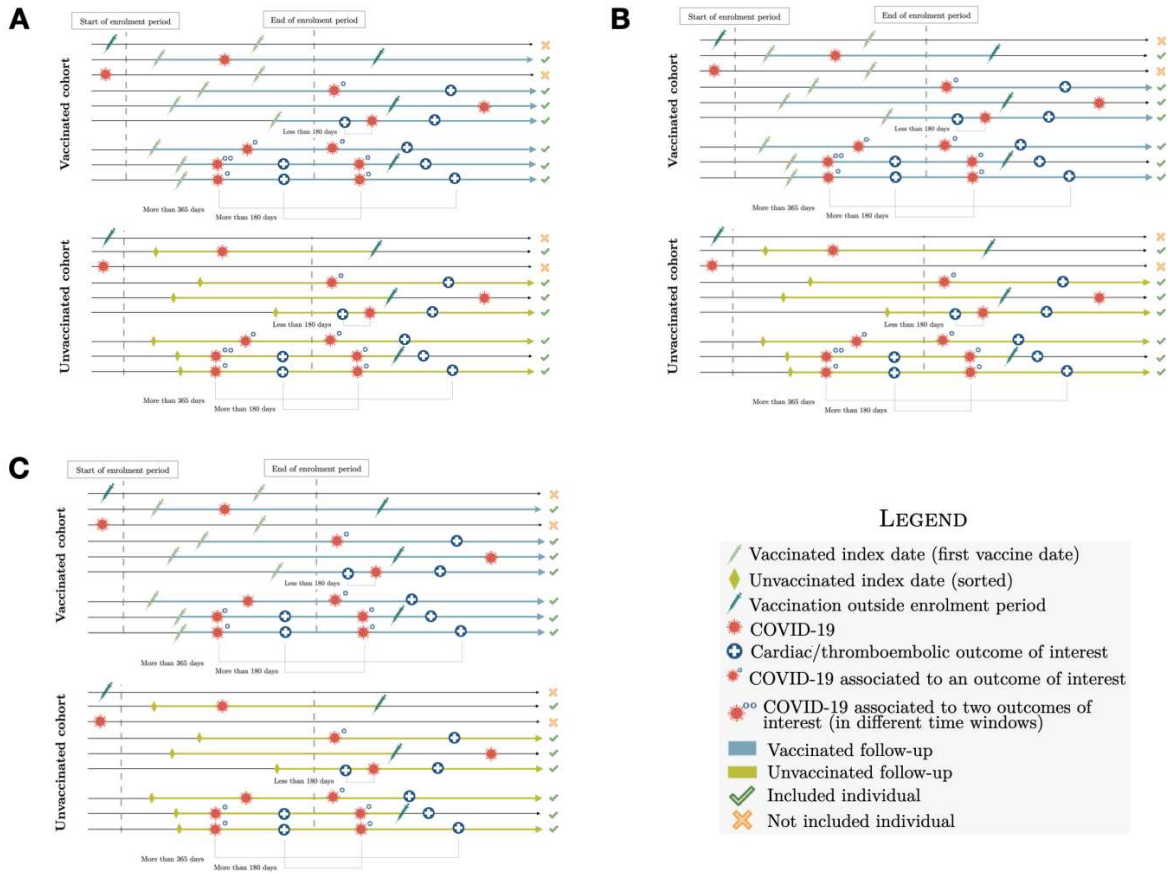


Figure S2: Study Inclusion Flowchart CPRD AURUM

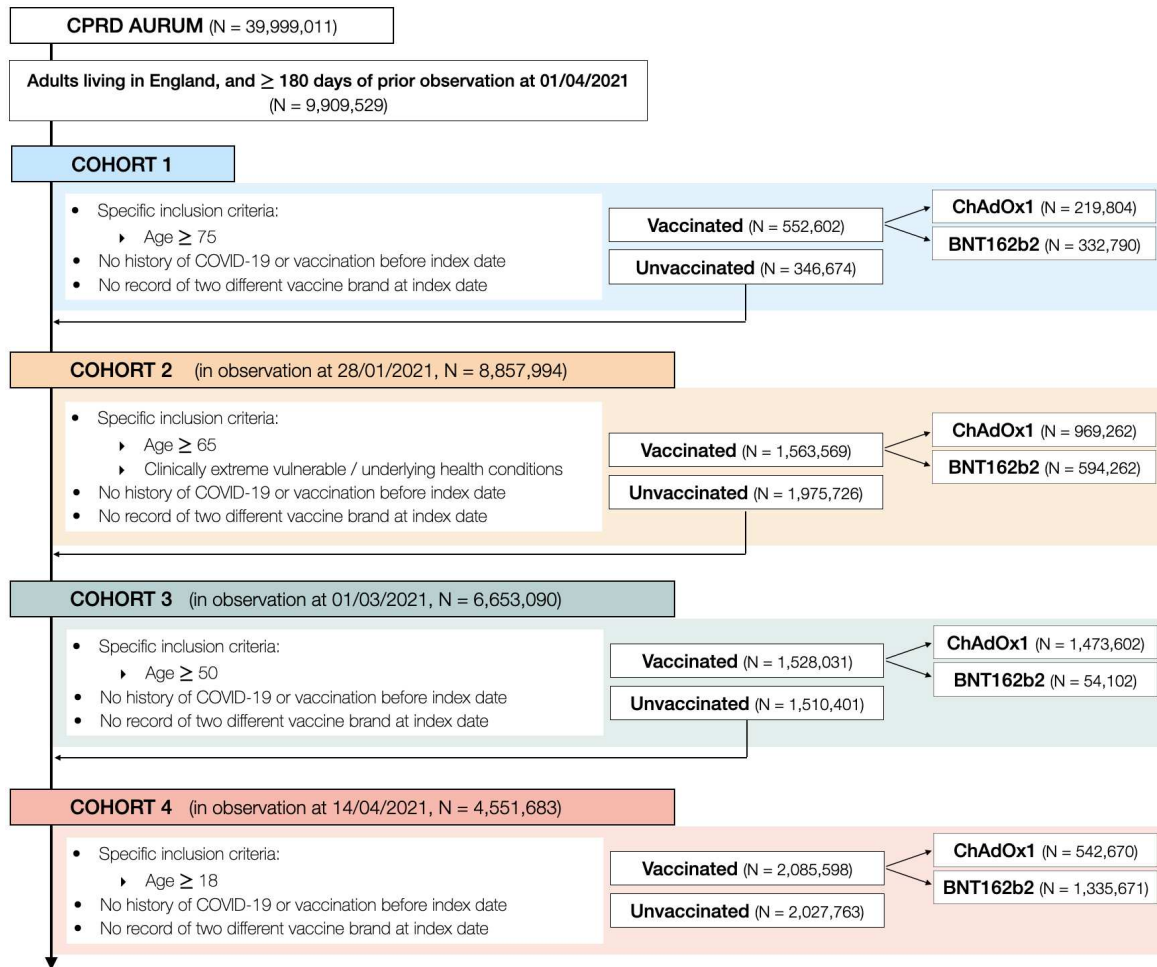


Figure S3: Study Inclusion Flowchart CPRD GOLD.

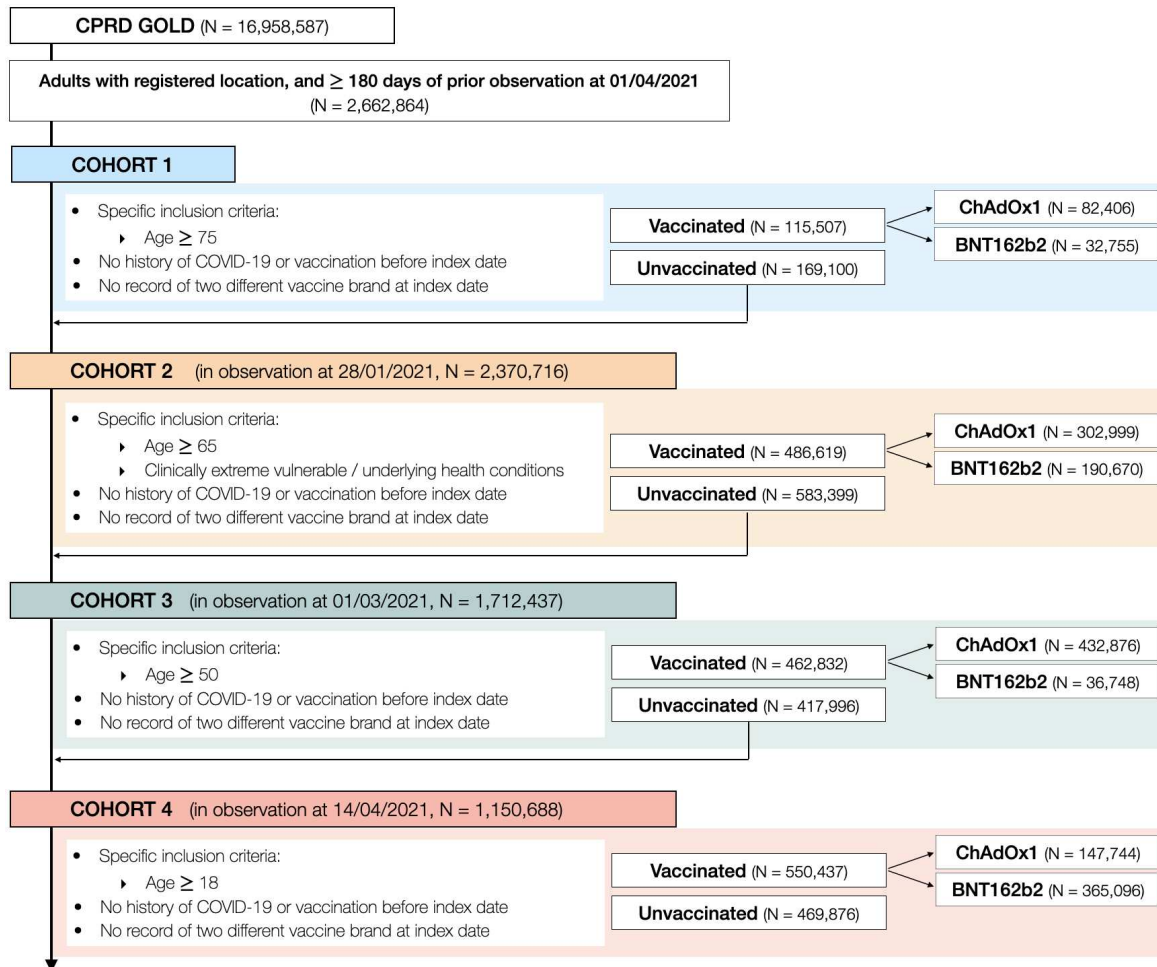




Figure S4: Study Inclusion Flowchart SIDIAP.

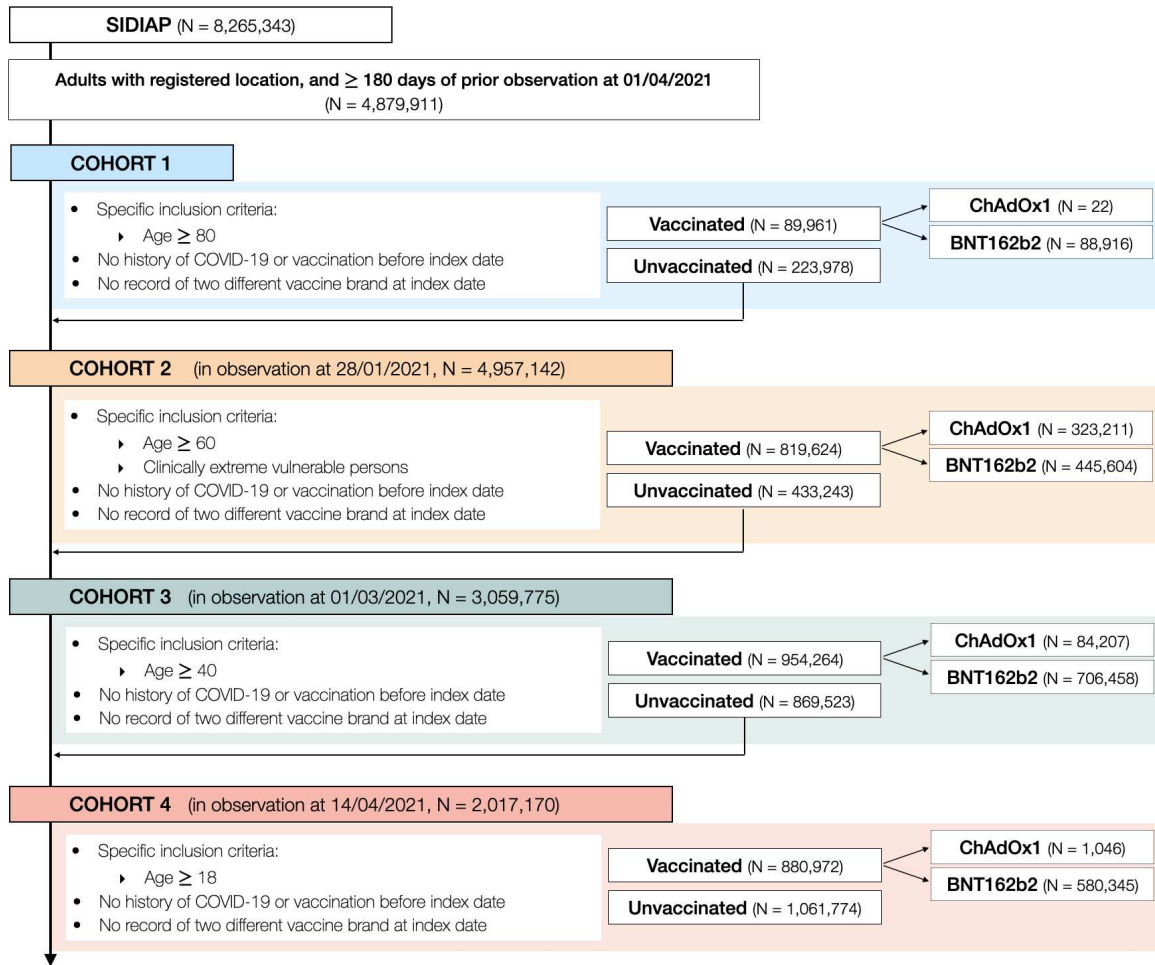
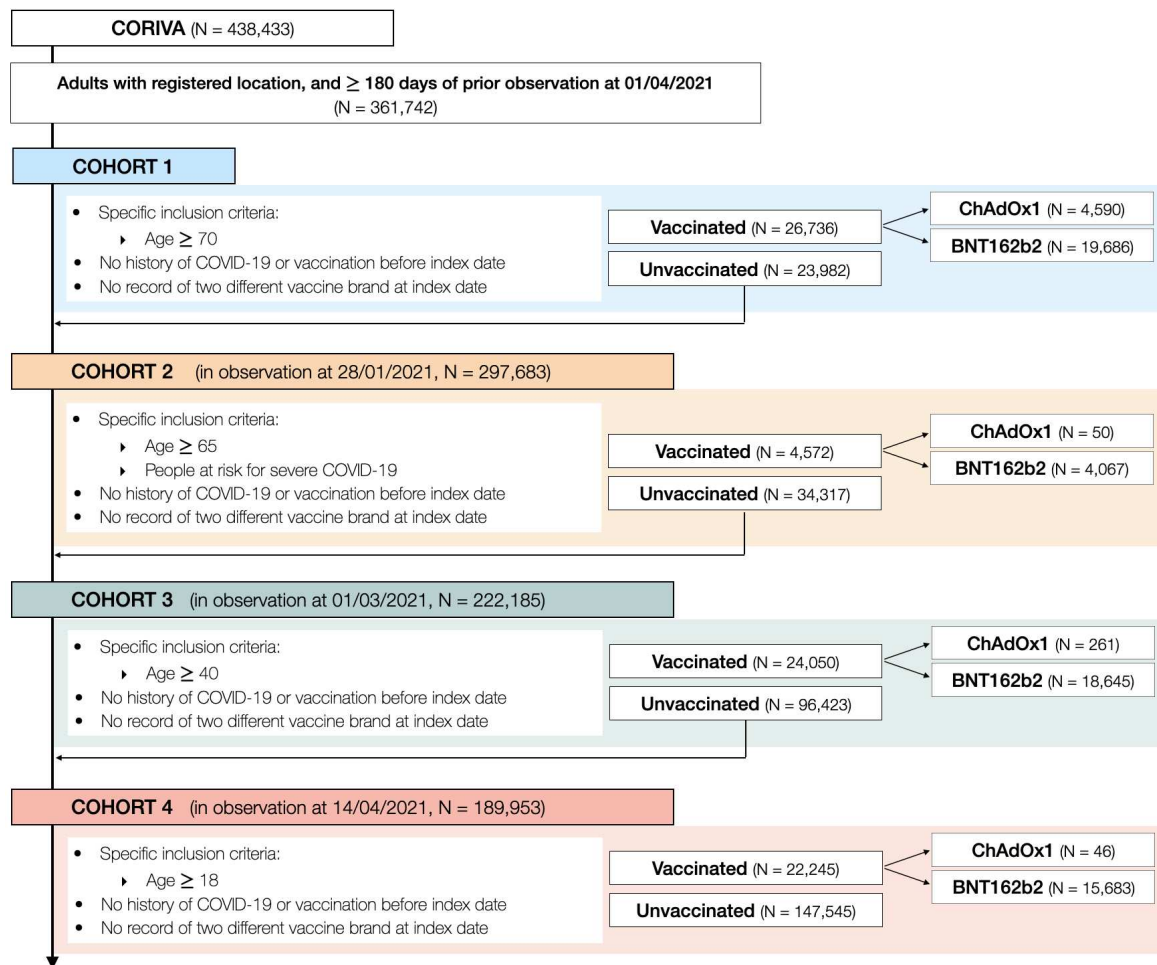


Figure S5: Study Inclusion Flowchart CORIVA.



**Table S1: Characteristics of unweighted populations in CPRD AURUM, database, stratified by staggered cohort and exposure status. Exposure is any COVID-19 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	346,674	552,602		1,975,726	1,563,569		1,510,401	1,528,031		2,027,763	2,085,598	
<b>Age, median [Q25-Q75]</b>	78 [76-82]	81 [78-86]	0.319	42 [32-55]	68 [60-73]	0.995	41 [31-53]	55 [51-60]	0.610	35 [27-45]	35 [27-43]	0.134
<b>Sex: Female, N(%)</b>	192,771 (56%)	314,141 (57%)	0.025	1,244,636 (63%)	852,976 (55%)	0.172	880,404 (58%)	771,929 (51%)	0.157	862,676 (43%)	958,124 (46%)	0.068
<b>Years of prior history*, median [Q25-Q75]</b>	24 [10-35]	25 [11-37]	0.056	15 [7-25]	21 [9-32]	0.278	13 [6-22]	17 [8-27]	0.207	8 [4-16]	8 [3-18]	0.032
<b>Number of GP visits, median [Q25-Q75]</b>	10 [5-17]	11 [6-19]	0.105	6 [2-11]	10 [6-17]	0.367	4 [1-10]	7 [3-12]	0.180	2 [0-5]	3 [1-7]	0.108
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.103	0[0-0]	0[0-0]	0.065	0[0-0]	0[0-0]	0.007	0[0-0]	0[0-0]	0.078
<b>Comorbidities**, N(%)</b>												
Anxiety	51,067 (15%)	82,765 (15%)	0.007	435,770 (22%)	309,567 (20%)	0.056	289,563 (19%)	292,336 (19%)	0.001	265,627 (13%)	338,058 (16%)	0.088
Asthma	36,474 (11%)	61,899 (11%)	0.022	501,209 (25%)	275,768 (18%)	0.189	294,123 (19%)	209,708 (14%)	0.155	138,317 (7%)	173,056 (8%)	0.056
Chronic kidney disease	71,083 (21%)	137,953 (25%)	0.107	55,104 (3%)	154,263 (10%)	0.294	24,340 (2%)	30,896 (2%)	0.031	18,625 (1%)	5,796 (0%)	0.083
COPD	28,665 (8%)	47,422 (9%)	0.011	29,729 (2%)	107,297 (7%)	0.270	13,433 (1%)	15,685 (1%)	0.014	10,543 (1%)	2,535 (0%)	0.071
Dementia	16,610 (5%)	32,934 (6%)	0.052	6,692 (0%)	15,828 (1%)	0.082	3,425 (0%)	3,219 (0%)	0.003	2,691 (0%)	575 (0%)	0.037
Depressive disorder	42,145 (12%)	64,840 (12%)	0.013	367,463 (19%)	283,390 (18%)	0.012	236,584 (16%)	265,876 (17%)	0.047	210,644 (10%)	253,317 (12%)	0.056
Diabetes	63,154 (18%)	101,682 (18%)	0.005	107,425 (5%)	253,026 (16%)	0.351	60,932 (4%)	84,224 (6%)	0.069	49,154 (2%)	22,968 (1%)	0.101
GERD	18,336 (5%)	32,360 (6%)	0.025	68,070 (3%)	84,985 (5%)	0.097	39,594 (3%)	58,961 (4%)	0.070	31,119 (2%)	38,612 (2%)	0.025
Heart failure	17,882 (5%)	33,578 (6%)	0.040	12,275 (1%)	37,396 (2%)	0.146	5,641 (0%)	7,204 (0%)	0.015	4,611 (0%)	1,163 (0%)	0.046
Hypertension	172,799 (50%)	301,294 (55%)	0.094	206,105 (10%)	545,782 (35%)	0.611	110,912 (7%)	240,120 (16%)	0.264	86,435 (4%)	54,357 (3%)	0.091
Hypothyroidism	31,444 (9%)	56,367 (10%)	0.038	78,934 (4%)	118,453 (8%)	0.154	43,892 (3%)	67,686 (4%)	0.081	30,993 (2%)	35,364 (2%)	0.013
Malignant neoplastic	68,984 (20%)	131,635	0.095	60,318 (3%)	207,240	0.379	29,689 (2%)	61,923 (4%)	0.122	22,701 (1%)	13,590 (1%)	0.050

disease	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
		(24%)			(13%)							
Myocardial infarction	16,027 (5%)	29,525 (5%)	0.033	20,259 (1%)	56,161 (4%)	0.172	7,396 (0%)	12,703 (1%)	0.042	5,764 (0%)	1,621 (0%)	0.049
Osteoporosis	29,909 (9%)	59,521 (11%)	0.072	18,263 (1%)	64,108 (4%)	0.204	8,846 (1%)	15,089 (1%)	0.045	6,922 (0%)	2,535 (0%)	0.046
Pneumonia	16,992 (5%)	28,398 (5%)	0.011	31,746 (2%)	50,739 (3%)	0.107	17,785 (1%)	22,064 (1%)	0.023	13,305 (1%)	13,282 (1%)	0.002
Rheumatoid arthritis	6,596 (2%)	11,237 (2%)	0.009	14,811 (1%)	33,173 (2%)	0.116	5,548 (0%)	9,130 (1%)	0.033	3,710 (0%)	1,816 (0%)	0.026
Stroke	15,249 (4%)	26,478 (5%)	0.019	16,942 (1%)	39,907 (3%)	0.131	7,422 (0%)	10,828 (1%)	0.028	6,030 (0%)	2,291 (0%)	0.042
Venous thromboembolism	19,607 (6%)	35,332 (6%)	0.031	28,876 (1%)	63,048 (4%)	0.158	13,608 (1%)	26,299 (2%)	0.072	12,945 (1%)	4,787 (0%)	0.062

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S2: Characteristics of weighted populations in CPRD AURUM, database, stratified by staggered cohort and exposure status. Exposure is ChAdOx1 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	100,517	99,985		308,608	304,995		448,766	445,397		242,955	243,847	
<b>Age, median [Q25-Q75]</b>	78 [76-84]	78 [76-84]	0.001	62 [47-69]	62 [47-69]	0.007	50 [41-57]	52 [41-57]	0.001	44 [41-48]	44 [41-48]	0.003
<b>Sex: Female, N(%)</b>	57,756 (57%)	57,174 (57%)	0.006	179,574 (58%)	176,871 (58%)	0.004	236,260 (53%)	234,320 (53%)	0.001	101,805 (42%)	100,846 (41%)	0.011
<b>Years of prior history*, median [Q25-Q75]</b>	24 [10-36]	24 [10-36]	0.004	18 [8-29]	18 [8-29]	0.002	14 [6-24]	14 [6-24]	0.002	10 [5-18]	9 [5-18]	0.004
<b>Number of GP visits, median [Q25-Q75]</b>	10 [5-18]	10 [6-18]	0.003	8 [3-15]	8 [5-15]	0.003	4 [1-11]	6 [2-10]	0.007	2 [0-7]	2 [1-7]	0.016
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.011	0[0-0]	0[0-0]	0.003	0[0-0]	0[0-0]	0.003	0[0-0]	0[0-0]	0.005
<b>Comorbidities**, N(%)</b>												
Anxiety	15,457 (15%)	15,069 (15%)	0.009	67,125 (22%)	64,408 (21%)	0.015	90,806 (20%)	87,243 (20%)	0.016	37,475 (15%)	38,040 (16%)	0.005
Asthma	10,993 (11%)	10,863 (11%)	0.002	65,274 (21%)	62,424 (20%)	0.017	76,417 (17%)	75,841 (17%)	0.000	17,944 (7%)	17,468 (7%)	0.009
Chronic kidney disease	23,223 (23%)	22,872 (23%)	0.005	23,022 (7%)	24,288 (8%)	0.019	8,460 (2%)	8,356 (2%)	0.001	2,419 (1%)	2,043 (1%)	0.017
COPD	8,669 (9%)	8,770 (9%)	0.005	14,411 (5%)	15,226 (5%)	0.015	5,747 (1%)	4,794 (1%)	0.019	1,263 (1%)	1,250 (1%)	0.001
Dementia	6,529 (6%)	6,431 (6%)	0.003	3,880 (1%)	3,541 (1%)	0.009	898 (0%)	1,004 (0%)	0.006	203 (0%)	399 (0%)	0.023
Depressive disorder	12,559 (12%)	12,267 (12%)	0.007	60,745 (20%)	57,903 (19%)	0.018	80,264 (18%)	77,017 (17%)	0.016	32,304 (13%)	33,302 (14%)	0.011
Diabetes	18,750 (19%)	18,602 (19%)	0.001	39,262 (13%)	38,979 (13%)	0.002	25,334 (6%)	26,121 (6%)	0.009	6,679 (3%)	6,315 (3%)	0.010
GERD	5,590 (6%)	5,471 (5%)	0.004	14,645 (5%)	14,339 (5%)	0.002	14,758 (3%)	14,823 (3%)	0.002	5,727 (2%)	6,021 (2%)	0.007
Heart failure	6,181 (6%)	5,763 (6%)	0.016	6,098 (2%)	5,685 (2%)	0.008	2,241 (0%)	1,983 (0%)	0.008	610 (0%)	545 (0%)	0.006
Hypertension	52,737 (52%)	51,796 (52%)	0.013	78,623 (25%)	79,827 (26%)	0.016	51,054 (11%)	51,059 (11%)	0.003	15,350 (6%)	15,670 (6%)	0.004
Hypothyroidism	9,956 (10%)	9,690 (10%)	0.007	19,720 (6%)	19,562 (6%)	0.001	16,480 (4%)	16,361 (4%)	0.000	5,735 (2%)	5,984 (2%)	0.006
Malignant neoplastic	21,691 (22%)	21,468	0.003	25,191 (8%)	27,892 (9%)	0.035	13,140 (3%)	12,870 (3%)	0.002	4,003 (2%)	3,621 (1%)	0.013

disease	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
		(21%)										
Myocardial infarction	5,182 (5%)	4,988 (5%)	0.008	7,777 (3%)	8,594 (3%)	0.018	3,415 (1%)	3,228 (1%)	0.004	933 (0%)	636 (0%)	0.022
Osteoporosis	9,975 (10%)	10,018 (10%)	0.003	9,052 (3%)	9,423 (3%)	0.009	3,285 (1%)	3,499 (1%)	0.006	840 (0%)	934 (0%)	0.006
Pneumonia	5,770 (6%)	5,268 (5%)	0.021	9,096 (3%)	8,541 (3%)	0.009	6,196 (1%)	6,077 (1%)	0.001	1,923 (1%)	2,040 (1%)	0.005
Rheumatoid arthritis	2,002 (2%)	2,063 (2%)	0.005	4,856 (2%)	4,971 (2%)	0.004	2,266 (1%)	2,795 (1%)	0.016	665 (0%)	478 (0%)	0.016
Stroke	5,085 (5%)	4,791 (5%)	0.012	6,650 (2%)	6,616 (2%)	0.001	3,150 (1%)	2,942 (1%)	0.005	908 (0%)	773 (0%)	0.010
Venous thromboembolism	6,342 (6%)	6,069 (6%)	0.010	9,208 (3%)	9,850 (3%)	0.014	6,193 (1%)	7,393 (2%)	0.023	2,532 (1%)	1,239 (1%)	0.061

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S3: Characteristics of unweighted populations in CPRD AURUM, database, stratified by staggered cohort and exposure status. Exposure is ChAdOx1 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	344,687	219,804		1,975,770	969,262		1,510,493	1,473,602		2,066,318	542,670	
<b>Age, median [Q25-Q75]</b>	78 [76-82]	80 [77-85]	0.240	42 [32-55]	69 [63-73]	1.059	41 [31-53]	55 [51-60]	0.605	34 [27-45]	45 [42-48]	0.507
<b>Sex: Female, N(%)</b>	191,649 (56%)	127,656 (58%)	0.050	1,244,532 (63%)	528,692 (55%)	0.172	880,468 (58%)	739,444 (50%)	0.163	880,225 (43%)	242,758 (45%)	0.043
<b>Years of prior history*, median [Q25-Q75]</b>	24 [10-35]	24 [9-36]	0.018	15 [7-25]	21 [9-33]	0.288	13 [6-22]	17 [8-27]	0.203	7 [4-16]	10 [5-18]	0.143
<b>Number of GP visits, median [Q25-Q75]</b>	10 [5-17]	12 [6-19]	0.121	6 [2-11]	10 [6-17]	0.359	4 [1-10]	7 [3-12]	0.169	2 [0-5]	3 [1-8]	0.146
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.194	0[0-0]	0[0-0]	0.070	0[0-0]	0[0-0]	0.005	0[0-0]	0[0-0]	0.066
<b>Comorbidities**, N(%)</b>												
Anxiety	50,786 (15%)	33,355 (15%)	0.012	435,737 (22%)	187,469 (19%)	0.067	289,618 (19%)	281,846 (19%)	0.001	268,451 (13%)	86,805 (16%)	0.085
Asthma	36,259 (11%)	24,009 (11%)	0.013	501,234 (25%)	159,162 (16%)	0.221	294,156 (19%)	200,995 (14%)	0.157	140,178 (7%)	41,393 (8%)	0.033
Chronic kidney disease	70,604 (20%)	51,053 (23%)	0.066	55,103 (3%)	97,339 (10%)	0.299	24,361 (2%)	24,198 (2%)	0.002	18,798 (1%)	2,879 (1%)	0.045
COPD	28,448 (8%)	19,105 (9%)	0.016	29,730 (2%)	67,700 (7%)	0.274	13,436 (1%)	13,621 (1%)	0.004	10,647 (1%)	1,510 (0%)	0.038
Dementia	16,327 (5%)	16,795 (8%)	0.121	6,689 (0%)	12,106 (1%)	0.103	3,424 (0%)	1,896 (0%)	0.023	2,729 (0%)	447 (0%)	0.015
Depressive disorder	41,905 (12%)	27,009 (12%)	0.004	367,500 (19%)	170,626 (18%)	0.026	236,628 (16%)	256,789 (17%)	0.047	212,626 (10%)	74,210 (14%)	0.104
Diabetes	62,733 (18%)	39,751 (18%)	0.003	107,449 (5%)	154,348 (16%)	0.344	60,968 (4%)	78,394 (5%)	0.061	49,223 (2%)	9,729 (2%)	0.041
GERD	18,253 (5%)	12,156 (6%)	0.010	68,089 (3%)	52,694 (5%)	0.097	39,619 (3%)	56,444 (4%)	0.068	31,367 (2%)	13,807 (3%)	0.073
Heart failure	17,716 (5%)	13,147 (6%)	0.037	12,277 (1%)	24,276 (3%)	0.152	5,638 (0%)	5,673 (0%)	0.002	4,625 (0%)	681 (0%)	0.024
Hypertension	171,846 (50%)	114,922 (52%)	0.049	206,105 (10%)	345,014 (36%)	0.626	110,975 (7%)	224,543 (15%)	0.251	87,010 (4%)	31,330 (6%)	0.072
Hypothyroidism	31,256 (9%)	21,855 (10%)	0.030	78,921 (4%)	73,992 (8%)	0.156	43,887 (3%)	64,026 (4%)	0.077	31,315 (2%)	13,920 (3%)	0.074
Malignant neoplastic disease	68,598 (20%)	49,023 (22%)	0.059	60,355 (3%)	131,135 (14%)	0.387	29,693 (2%)	55,601 (4%)	0.108	22,873 (1%)	7,505 (1%)	0.025

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Myocardial infarction	15,938 (5%)	11,236 (5%)	0.023	20,262 (1%)	33,142 (3%)	0.163	7,401 (0%)	11,237 (1%)	0.035	5,781 (0%)	861 (0%)	0.026
Osteoporosis	29,704 (9%)	22,986 (10%)	0.063	18,255 (1%)	42,319 (4%)	0.216	8,856 (1%)	12,455 (1%)	0.031	6,980 (0%)	1,380 (0%)	0.015
Pneumonia	16,837 (5%)	12,101 (6%)	0.028	31,706 (2%)	33,170 (3%)	0.116	17,787 (1%)	20,399 (1%)	0.018	13,425 (1%)	4,297 (1%)	0.017
Rheumatoid arthritis	6,549 (2%)	4,544 (2%)	0.012	14,813 (1%)	20,294 (2%)	0.114	5,536 (0%)	8,463 (1%)	0.030	3,723 (0%)	821 (0%)	0.007
Stroke	15,118 (4%)	10,876 (5%)	0.027	16,944 (1%)	24,851 (3%)	0.132	7,424 (0%)	9,547 (1%)	0.021	6,059 (0%)	1,153 (0%)	0.016
Venous thromboembolism	19,455 (6%)	13,782 (6%)	0.026	28,887 (1%)	39,415 (4%)	0.159	13,609 (1%)	24,312 (2%)	0.067	13,021 (1%)	1,936 (0%)	0.039

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease



**Table S4: Characteristics of weighted populations in CPRD AURUM, database, stratified by staggered cohort and exposure status. Exposure is BNT162b2 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	105,853	106,684		255,400	253,164		37,236	37,227		630,449	633,628	
<b>Age, median [Q25-Q75]</b>	80 [77-85]	80 [77-85]	0.003	58 [46-67]	58 [46-68]	0.006	54 [45-64]	54 [45-64]	0.016	32 [25-37]	32 [25-37]	0.001
<b>Sex: Female, N(%)</b>	60,612 (57%)	60,891 (57%)	0.004	147,020 (58%)	146,572 (58%)	0.007	22,049 (59%)	22,144 (59%)	0.005	278,649 (44%)	282,744 (45%)	0.009
<b>Years of prior history*, median [Q25-Q75]</b>	24 [11-36]	24 [11-35]	0.005	18 [8-29]	18 [8-29]	0.007	16 [7-27]	17 [7-27]	0.007	7 [4-16]	7 [3-18]	0.006
<b>Number of GP visits, median [Q25-Q75]</b>	10 [5-18]	10 [6-17]	0.002	8 [3-15]	10 [5-15]	0.013	6 [2-15]	8 [4-14]	0.003	2 [0-6]	2 [0-6]	0.011
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.001	0[0-0]	0[0-0]	0.003	0[0-0]	0[0-0]	0.000	0[0-0]	0[0-0]	0.010
<b>Comorbidities**, N(%)</b>												
Anxiety	15,706 (15%)	15,578 (15%)	0.007	57,951 (23%)	55,594 (22%)	0.018	7,672 (21%)	7,363 (20%)	0.021	96,918 (15%)	96,528 (15%)	0.004
Asthma	11,563 (11%)	11,733 (11%)	0.002	60,265 (24%)	58,010 (23%)	0.016	6,397 (17%)	6,215 (17%)	0.013	50,849 (8%)	48,590 (8%)	0.015
Chronic kidney disease	25,741 (24%)	26,243 (25%)	0.007	17,219 (7%)	18,864 (7%)	0.028	2,790 (7%)	2,621 (7%)	0.017	2,035 (0%)	1,846 (0%)	0.006
COPD	9,240 (9%)	8,999 (8%)	0.011	11,625 (5%)	12,410 (5%)	0.017	1,224 (3%)	886 (2%)	0.055	859 (0%)	807 (0%)	0.002
Dementia	6,683 (6%)	5,727 (5%)	0.040	2,225 (1%)	1,309 (1%)	0.043	618 (2%)	529 (1%)	0.019	112 (0%)	107 (0%)	0.001
Depressive disorder	12,529 (12%)	12,450 (12%)	0.005	52,883 (21%)	50,765 (20%)	0.016	6,588 (18%)	6,431 (17%)	0.011	71,832 (11%)	71,139 (11%)	0.005
Diabetes	20,227 (19%)	20,182 (19%)	0.005	32,557 (13%)	32,989 (13%)	0.008	3,153 (8%)	3,212 (9%)	0.006	8,183 (1%)	7,675 (1%)	0.008
GERD	6,148 (6%)	5,937 (6%)	0.011	12,436 (5%)	12,160 (5%)	0.003	1,552 (4%)	1,509 (4%)	0.006	9,586 (2%)	10,173 (2%)	0.007
Heart failure	6,643 (6%)	6,329 (6%)	0.014	4,618 (2%)	3,987 (2%)	0.018	767 (2%)	552 (1%)	0.044	474 (0%)	344 (0%)	0.008
Hypertension	56,732 (54%)	57,023 (53%)	0.003	62,628 (25%)	63,500 (25%)	0.013	7,802 (21%)	7,697 (21%)	0.007	11,603 (2%)	12,098 (2%)	0.005
Hypothyroidism	10,528 (10%)	10,633 (10%)	0.001	16,084 (6%)	16,368 (6%)	0.007	2,046 (5%)	2,032 (5%)	0.002	8,722 (1%)	8,355 (1%)	0.006
Malignant neoplastic disease	23,367 (22%)	23,618 (22%)	0.002	19,432 (8%)	22,945 (9%)	0.053	2,799 (8%)	2,742 (7%)	0.006	3,432 (1%)	2,913 (0%)	0.012

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Myocardial infarction	5,451 (5%)	5,473 (5%)	0.001	6,811 (3%)	7,856 (3%)	0.026	704 (2%)	637 (2%)	0.013	607 (0%)	569 (0%)	0.002
Osteoporosis	10,923 (10%)	10,997 (10%)	0.000	6,664 (3%)	6,208 (2%)	0.010	1,166 (3%)	1,014 (3%)	0.024	653 (0%)	702 (0%)	0.002
Pneumonia	5,814 (5%)	5,303 (5%)	0.023	7,059 (3%)	6,337 (3%)	0.016	991 (3%)	831 (2%)	0.028	3,698 (1%)	3,579 (1%)	0.003
Rheumatoid arthritis	2,115 (2%)	2,076 (2%)	0.004	4,061 (2%)	4,486 (2%)	0.014	330 (1%)	382 (1%)	0.014	723 (0%)	523 (0%)	0.010
Stroke	5,304 (5%)	4,911 (5%)	0.019	5,139 (2%)	5,592 (2%)	0.014	657 (2%)	560 (2%)	0.021	828 (0%)	669 (0%)	0.007
Venous thromboembolism	6,564 (6%)	6,603 (6%)	0.000	7,760 (3%)	7,984 (3%)	0.007	980 (3%)	965 (3%)	0.003	2,860 (0%)	1,602 (0%)	0.034

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S5: Characteristics of unweighted populations in CPRD AURUM, database, stratified by staggered cohort and exposure status. Exposure is BNT162b2 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	348,052	332,790		1,976,163	594,262		1,510,323	54,102		2,014,161	1,335,671	
<b>Age, median [Q25-Q75]</b>	78 [76-82]	82 [79-86]	0.375	42 [32-55]	67 [56-73]	0.899	41 [31-53]	58 [50-82]	0.777	35 [27-45]	31 [25-37]	0.377
<b>Sex: Female, N(%)</b>	193,520 (56%)	186,481 (56%)	0.009	1,244,798 (63%)	324,259 (55%)	0.172	880,418 (58%)	32,310 (60%)	0.029	856,596 (43%)	625,195 (47%)	0.086
<b>Years of prior history*, median [Q25-Q75]</b>	23 [10-35]	26 [13-38]	0.081	15 [7-25]	21 [9-32]	0.261	13 [6-22]	19 [8-30]	0.308	8 [4-16]	7 [3-19]	0.012
<b>Number of GP visits, median [Q25-Q75]</b>	10 [5-17]	11 [6-18]	0.094	6 [2-11]	11 [6-17]	0.381	4 [1-10]	10 [5-17]	0.436	2 [0-5]	3 [1-7]	0.103
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.013	0[0-0]	0[0-0]	0.056	0[0-0]	0[0-0]	0.165	0[0-0]	0[0-0]	0.082
<b>Comorbidities**, N(%)</b>												
Anxiety	51,245 (15%)	49,410 (15%)	0.003	435,705 (22%)	122,087 (21%)	0.037	289,623 (19%)	10,441 (19%)	0.003	264,577 (13%)	218,144 (16%)	0.090
Asthma	36,625 (11%)	37,889 (11%)	0.028	501,289 (25%)	116,596 (20%)	0.138	294,101 (19%)	8,668 (16%)	0.090	137,548 (7%)	114,378 (9%)	0.065
Chronic kidney disease	71,413 (21%)	86,899 (26%)	0.133	55,136 (3%)	56,923 (10%)	0.285	24,372 (2%)	6,692 (12%)	0.431	18,579 (1%)	2,664 (0%)	0.097
COPD	28,829 (8%)	28,317 (9%)	0.008	29,793 (2%)	39,595 (7%)	0.263	13,430 (1%)	2,063 (4%)	0.194	10,501 (1%)	942 (0%)	0.083
Dementia	16,828 (5%)	16,138 (5%)	0.001	6,731 (0%)	3,720 (1%)	0.041	3,424 (0%)	1,323 (2%)	0.194	2,673 (0%)	119 (0%)	0.047
Depressive disorder	42,297 (12%)	37,831 (11%)	0.024	367,534 (19%)	112,753 (19%)	0.010	236,577 (16%)	9,046 (17%)	0.029	209,905 (10%)	155,037 (12%)	0.038
Diabetes	63,483 (18%)	61,929 (19%)	0.010	107,471 (5%)	98,676 (17%)	0.362	60,945 (4%)	5,817 (11%)	0.259	49,143 (2%)	12,040 (1%)	0.120
GERD	18,404 (5%)	20,204 (6%)	0.034	68,110 (3%)	32,288 (5%)	0.097	39,607 (3%)	2,506 (5%)	0.108	31,062 (2%)	21,599 (2%)	0.006
Heart failure	17,980 (5%)	20,430 (6%)	0.042	12,311 (1%)	13,120 (2%)	0.134	5,627 (0%)	1,529 (3%)	0.197	4,614 (0%)	448 (0%)	0.054
Hypertension	173,422 (50%)	186,367 (56%)	0.124	206,136 (10%)	200,762 (34%)	0.586	110,969 (7%)	15,536 (29%)	0.579	86,231 (4%)	19,649 (1%)	0.169
Hypothyroidism	31,595 (9%)	34,512 (10%)	0.044	78,935 (4%)	44,456 (7%)	0.150	43,876 (3%)	3,642 (7%)	0.179	30,913 (2%)	18,516 (1%)	0.012
Malignant neoplastic disease	69,247 (20%)	82,610 (25%)	0.118	60,370 (3%)	76,103 (13%)	0.367	29,693 (2%)	6,311 (12%)	0.392	22,630 (1%)	5,104 (0%)	0.086

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Myocardial infarction	16,111 (5%)	18,289 (5%)	0.040	20,304 (1%)	23,019 (4%)	0.185	7,409 (0%)	1,464 (3%)	0.177	5,738 (0%)	715 (0%)	0.056
Osteoporosis	30,053 (9%)	36,535 (11%)	0.079	18,282 (1%)	21,789 (4%)	0.184	8,852 (1%)	2,632 (5%)	0.265	6,904 (0%)	1,028 (0%)	0.058
Pneumonia	17,134 (5%)	16,297 (5%)	0.001	31,724 (2%)	17,567 (3%)	0.091	17,791 (1%)	1,658 (3%)	0.131	13,263 (1%)	7,793 (1%)	0.010
Rheumatoid arthritis	6,613 (2%)	6,693 (2%)	0.008	14,823 (1%)	12,878 (2%)	0.118	5,533 (0%)	667 (1%)	0.097	3,692 (0%)	891 (0%)	0.033
Stroke	15,325 (4%)	15,601 (5%)	0.014	16,962 (1%)	15,056 (3%)	0.130	7,431 (0%)	1,281 (2%)	0.158	6,019 (0%)	1,022 (0%)	0.051
Venous thromboembolism	19,679 (6%)	21,549 (6%)	0.034	28,882 (1%)	23,632 (4%)	0.155	13,639 (1%)	1,980 (4%)	0.185	12,941 (1%)	2,541 (0%)	0.070

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S6: Characteristics of weighted populations in CPRD GOLD, database, stratified by staggered cohort and exposure status. Exposure is any COVID-19 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	40,084	40,014		111,674	111,393		124,883	124,955		196,235	195,302	
<b>Age, median [Q25-Q75]</b>	82 [78-86]	82 [78-86]	0.004	62 [50-69]	62 [50-69]	0.005	50 [41-58]	52 [41-58]	0.000	34 [26-42]	34 [26-43]	0.004
<b>Sex: Female, N(%)</b>	23,206 (58%)	23,175 (58%)	0.000	63,290 (57%)	63,079 (57%)	0.001	63,572 (51%)	63,955 (51%)	0.006	84,762 (43%)	85,083 (44%)	0.007
<b>Years of prior history*, median [Q25-Q75]</b>	17 [13-20]	18 [13-20]	0.001	17 [11-19]	17 [11-19]	0.005	17 [9-19]	17 [9-19]	0.000	13 [6-18]	14 [5-18]	0.006
<b>Number of GP visits, median [Q25-Q75]</b>	12 [7-20]	12 [8-20]	0.000	8 [3-15]	10 [5-15]	0.000	4 [0-10]	4 [1-10]	0.009	0 [0-5]	2 [0-5]	0.004
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.002	0[0-0]	0[0-0]	0.009	0[0-0]	0[0-0]	0.003	0[0-0]	0[0-0]	0.000
<b>Comorbidities**, N(%)</b>												
Anxiety	4,933 (12%)	4,920 (12%)	0.000	22,884 (20%)	22,299 (20%)	0.012	24,993 (20%)	24,695 (20%)	0.006	31,360 (16%)	30,689 (16%)	0.007
Asthma	3,911 (10%)	3,931 (10%)	0.002	18,514 (17%)	18,209 (16%)	0.006	17,431 (14%)	17,388 (14%)	0.001	14,817 (8%)	14,596 (7%)	0.003
Chronic kidney disease	8,998 (22%)	8,953 (22%)	0.002	6,848 (6%)	7,431 (7%)	0.022	2,120 (2%)	2,287 (2%)	0.010	922 (0%)	807 (0%)	0.009
COPD	3,439 (9%)	3,341 (8%)	0.008	5,972 (5%)	6,496 (6%)	0.021	2,089 (2%)	1,938 (2%)	0.010	734 (0%)	688 (0%)	0.004
Dementia	2,634 (7%)	2,332 (6%)	0.031	1,383 (1%)	865 (1%)	0.046	283 (0%)	313 (0%)	0.005	78 (0%)	134 (0%)	0.013
Depressive disorder	3,783 (9%)	3,705 (9%)	0.006	20,874 (19%)	20,246 (18%)	0.013	22,015 (18%)	21,682 (17%)	0.007	23,010 (12%)	22,630 (12%)	0.004
Diabetes	5,928 (15%)	5,802 (14%)	0.008	11,000 (10%)	11,657 (10%)	0.020	5,345 (4%)	5,651 (5%)	0.012	2,586 (1%)	2,366 (1%)	0.009
GERD	1,930 (5%)	1,970 (5%)	0.005	4,521 (4%)	4,479 (4%)	0.001	3,343 (3%)	3,346 (3%)	0.000	2,657 (1%)	2,614 (1%)	0.001
Heart failure	2,417 (6%)	2,205 (6%)	0.022	2,002 (2%)	2,029 (2%)	0.002	639 (1%)	614 (0%)	0.003	250 (0%)	207 (0%)	0.006
Hypertension	14,288 (36%)	14,282 (36%)	0.001	22,488 (20%)	22,695 (20%)	0.006	11,108 (9%)	11,313 (9%)	0.006	4,318 (2%)	4,619 (2%)	0.011
Hypothyroidism	3,151 (8%)	3,155 (8%)	0.001	6,321 (6%)	6,361 (6%)	0.002	4,134 (3%)	4,055 (3%)	0.004	2,475 (1%)	2,621 (1%)	0.007
Malignant neoplastic disease	8,302 (21%)	8,283 (21%)	0.000	8,661 (8%)	10,177 (9%)	0.050	3,813 (3%)	3,777 (3%)	0.002	1,614 (1%)	1,676 (1%)	0.004

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Myocardial infarction	2,119 (5%)	1,984 (5%)	0.015	3,308 (3%)	3,740 (3%)	0.023	1,193 (1%)	1,267 (1%)	0.006	430 (0%)	343 (0%)	0.010
Osteoporosis	3,702 (9%)	3,670 (9%)	0.002	3,154 (3%)	3,179 (3%)	0.002	1,038 (1%)	1,030 (1%)	0.001	363 (0%)	375 (0%)	0.002
Pneumonia	1,654 (4%)	1,452 (4%)	0.026	2,424 (2%)	2,211 (2%)	0.013	1,401 (1%)	1,314 (1%)	0.007	1,035 (1%)	1,055 (1%)	0.002
Rheumatoid arthritis	637 (2%)	624 (2%)	0.002	1,618 (1%)	1,818 (2%)	0.015	551 (0%)	760 (1%)	0.023	280 (0%)	157 (0%)	0.019
Stroke	2,103 (5%)	1,866 (5%)	0.027	2,468 (2%)	2,512 (2%)	0.003	916 (1%)	981 (1%)	0.006	385 (0%)	356 (0%)	0.003
Venous thromboembolism	1,732 (4%)	1,648 (4%)	0.010	2,639 (2%)	2,596 (2%)	0.002	1,466 (1%)	1,638 (1%)	0.012	959 (0%)	518 (0%)	0.036

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S7: Characteristics of unweighted populations in CPRD GOLD, database, stratified by staggered cohort and exposure status. Exposure is any COVID-19 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	169,100	118,507		583,399	486,619		417,996	462,832		469,876	550,437	
<b>Age, median [Q25-Q75]</b>	78 [76-82]	84 [81-87]	0.550	45 [33-58]	71 [66-75]	1.117	42 [31-55]	56 [52-61]	0.546	37 [28-49]	35 [27-43]	0.250
<b>Sex: Female, N(%)</b>	93,719 (55%)	68,258 (58%)	0.044	344,747 (59%)	262,113 (54%)	0.106	230,567 (55%)	230,957 (50%)	0.105	208,184 (44%)	249,603 (45%)	0.021
<b>Years of prior history*, median [Q25-Q75]</b>	17 [13-20]	18 [14-20]	0.023	17 [10-19]	17 [13-20]	0.085	17 [9-19]	17 [10-19]	0.055	13 [6-18]	14 [6-18]	0.020
<b>Number of GP visits, median [Q25-Q75]</b>	11 [6-18]	14 [9-21]	0.180	5 [1-11]	11 [6-17]	0.414	3 [0-8]	6 [2-12]	0.239	0 [0-4]	2 [0-6]	0.115
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.052	0[0-0]	0[0-0]	0.069	0[0-0]	0[0-0]	0.016	0[0-0]	0[0-0]	0.044
<b>Comorbidities**, N(%)</b>												
Anxiety	20,097 (12%)	14,878 (13%)	0.020	132,282 (23%)	78,442 (16%)	0.166	83,022 (20%)	83,629 (18%)	0.046	65,306 (14%)	88,512 (16%)	0.061
Asthma	15,573 (9%)	12,090 (10%)	0.034	119,520 (20%)	61,821 (13%)	0.210	68,746 (16%)	52,312 (11%)	0.149	30,811 (7%)	46,774 (8%)	0.074
Chronic kidney disease	29,343 (17%)	29,934 (25%)	0.194	15,484 (3%)	49,550 (10%)	0.311	6,676 (2%)	8,145 (2%)	0.013	4,746 (1%)	1,376 (0%)	0.096
COPD	14,248 (8%)	9,602 (8%)	0.012	12,247 (2%)	39,371 (8%)	0.275	5,114 (1%)	6,699 (1%)	0.020	3,716 (1%)	953 (0%)	0.089
Dementia	6,678 (4%)	6,860 (6%)	0.086	1,986 (0%)	6,557 (1%)	0.110	1,188 (0%)	636 (0%)	0.032	774 (0%)	159 (0%)	0.044
Depressive disorder	16,339 (10%)	10,720 (9%)	0.021	111,568 (19%)	72,063 (15%)	0.115	66,705 (16%)	77,560 (17%)	0.022	50,341 (11%)	64,215 (12%)	0.030
Diabetes	23,579 (14%)	17,895 (15%)	0.033	29,125 (5%)	66,688 (14%)	0.303	12,407 (3%)	25,465 (6%)	0.126	9,225 (2%)	5,012 (1%)	0.089
GERD	7,610 (5%)	6,174 (5%)	0.033	18,053 (3%)	22,884 (5%)	0.083	8,864 (2%)	15,586 (3%)	0.076	5,920 (1%)	8,482 (2%)	0.024
Heart failure	7,475 (4%)	7,118 (6%)	0.071	4,013 (1%)	12,939 (3%)	0.154	1,732 (0%)	2,410 (1%)	0.016	1,274 (0%)	293 (0%)	0.054
Hypertension	56,298 (33%)	44,709 (38%)	0.093	58,662 (10%)	139,644 (29%)	0.485	24,457 (6%)	64,451 (14%)	0.273	16,440 (3%)	11,991 (2%)	0.080
Hypothyroidism	12,126 (7%)	9,825 (8%)	0.042	22,026 (4%)	31,923 (7%)	0.126	10,616 (3%)	19,001 (4%)	0.087	6,676 (1%)	7,790 (1%)	0.000
Malignant neoplastic disease	30,687 (18%)	26,725 (23%)	0.110	19,781 (3%)	65,779 (14%)	0.370	8,870 (2%)	19,474 (4%)	0.119	5,916 (1%)	4,164 (1%)	0.050

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Myocardial infarction	7,707 (5%)	6,298 (5%)	0.035	8,409 (1%)	20,200 (4%)	0.165	2,665 (1%)	5,556 (1%)	0.059	2,003 (0%)	501 (0%)	0.066
Osteoporosis	12,736 (8%)	11,677 (10%)	0.082	5,836 (1%)	23,843 (5%)	0.232	2,580 (1%)	4,797 (1%)	0.046	1,855 (0%)	637 (0%)	0.055
Pneumonia	5,401 (3%)	4,381 (4%)	0.028	7,250 (1%)	12,120 (2%)	0.092	3,822 (1%)	4,889 (1%)	0.014	2,522 (1%)	2,797 (1%)	0.004
Rheumatoid arthritis	2,565 (2%)	1,833 (2%)	0.002	4,013 (1%)	9,000 (2%)	0.104	1,294 (0%)	2,566 (1%)	0.037	877 (0%)	316 (0%)	0.037
Stroke	7,214 (4%)	5,843 (5%)	0.032	5,886 (1%)	14,921 (3%)	0.146	2,170 (1%)	3,998 (1%)	0.042	1,591 (0%)	620 (0%)	0.048
Venous thromboembolism	6,188 (4%)	5,096 (4%)	0.033	7,342 (1%)	14,077 (3%)	0.115	3,067 (1%)	6,732 (1%)	0.069	2,611 (1%)	1,018 (0%)	0.061

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease



**Table S8: Characteristics of weighted populations in CPRD GOLD, database, stratified by staggered cohort and exposure status. Exposure is ChAdOx1 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	29,163	29,082		82,091	82,226		116,090	115,912		70,312	70,823	
<b>Age, median [Q25-Q75]</b>	82 [79-87]	82 [80-87]	0.002	64 [53-71]	64 [53-70]	0.001	52 [42-58]	52 [42-58]	0.003	42 [39-48]	42 [38-48]	0.000
<b>Sex: Female, N(%)</b>	17,126 (59%)	17,076 (59%)	0.000	45,269 (55%)	45,487 (55%)	0.003	58,599 (50%)	58,799 (51%)	0.005	29,480 (42%)	29,458 (42%)	0.007
<b>Years of prior history*, median [Q25-Q75]</b>	17 [13-20]	17 [14-20]	0.001	17 [11-19]	17 [11-19]	0.002	17 [9-19]	17 [8-19]	0.001	14 [7-18]	14 [6-18]	0.001
<b>Number of GP visits, median [Q25-Q75]</b>	12 [7-21]	12 [8-20]	0.005	8 [3-16]	10 [5-16]	0.002	4 [0-10]	4 [1-10]	0.014	0 [0-6]	2 [0-6]	0.003
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.005	0[0-0]	0[0-0]	0.005	0[0-0]	0[0-0]	0.004	0[0-0]	0[0-0]	0.000
<b>Comorbidities**, N(%)</b>												
Anxiety	3,481 (12%)	3,496 (12%)	0.003	16,202 (20%)	15,970 (19%)	0.008	23,083 (20%)	22,695 (20%)	0.008	12,154 (17%)	11,947 (17%)	0.011
Asthma	2,863 (10%)	2,870 (10%)	0.002	13,358 (16%)	13,192 (16%)	0.006	16,057 (14%)	16,029 (14%)	0.000	4,767 (7%)	4,744 (7%)	0.003
Chronic kidney disease	6,959 (24%)	6,928 (24%)	0.001	5,850 (7%)	6,384 (8%)	0.024	2,031 (2%)	2,104 (2%)	0.005	616 (1%)	517 (1%)	0.016
COPD	2,556 (9%)	2,485 (9%)	0.008	5,069 (6%)	5,523 (7%)	0.022	1,969 (2%)	1,874 (2%)	0.006	539 (1%)	478 (1%)	0.011
Dementia	2,042 (7%)	1,794 (6%)	0.034	1,319 (2%)	826 (1%)	0.053	263 (0%)	265 (0%)	0.000	59 (0%)	111 (0%)	0.021
Depressive disorder	2,641 (9%)	2,608 (9%)	0.003	14,875 (18%)	14,558 (18%)	0.011	20,497 (18%)	20,298 (18%)	0.004	10,492 (15%)	10,218 (14%)	0.014
Diabetes	4,346 (15%)	4,273 (15%)	0.006	8,933 (11%)	9,524 (12%)	0.022	5,139 (4%)	5,350 (5%)	0.009	1,459 (2%)	1,421 (2%)	0.005
GERD	1,366 (5%)	1,380 (5%)	0.003	3,514 (4%)	3,414 (4%)	0.006	3,153 (3%)	3,136 (3%)	0.001	1,258 (2%)	1,297 (2%)	0.003
Heart failure	1,844 (6%)	1,699 (6%)	0.020	1,793 (2%)	1,720 (2%)	0.006	613 (1%)	601 (1%)	0.001	177 (0%)	151 (0%)	0.008
Hypertension	10,466 (36%)	10,581 (36%)	0.010	17,843 (22%)	18,115 (22%)	0.007	10,489 (9%)	10,714 (9%)	0.007	3,119 (4%)	3,233 (5%)	0.006
Hypothyroidism	2,338 (8%)	2,360 (8%)	0.004	4,857 (6%)	4,837 (6%)	0.001	3,897 (3%)	3,742 (3%)	0.007	1,432 (2%)	1,412 (2%)	0.003
Malignant neoplastic disease	6,210 (21%)	6,164 (21%)	0.002	7,090 (9%)	8,270 (10%)	0.049	3,588 (3%)	3,590 (3%)	0.000	1,059 (2%)	1,117 (2%)	0.006
Myocardial infarction	1,569 (5%)	1,500 (5%)	0.010	2,720 (3%)	3,083 (4%)	0.024	1,155 (1%)	1,202 (1%)	0.004	319 (0%)	242 (0%)	0.018

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Osteoporosis	2,838 (10%)	2,846 (10%)	0.002	2,715 (3%)	2,668 (3%)	0.004	944 (1%)	986 (1%)	0.004	252 (0%)	281 (0%)	0.006
Pneumonia	1,287 (4%)	1,147 (4%)	0.024	1,997 (2%)	1,883 (2%)	0.009	1,307 (1%)	1,245 (1%)	0.005	487 (1%)	473 (1%)	0.003
Rheumatoid arthritis	464 (2%)	445 (2%)	0.005	1,280 (2%)	1,491 (2%)	0.020	514 (0%)	743 (1%)	0.027	184 (0%)	120 (0%)	0.020
Stroke	1,600 (5%)	1,421 (5%)	0.027	2,073 (3%)	2,122 (3%)	0.003	873 (1%)	963 (1%)	0.009	263 (0%)	257 (0%)	0.002
Venous thromboembolism	1,339 (5%)	1,191 (4%)	0.024	2,112 (3%)	2,219 (3%)	0.008	1,407 (1%)	1,572 (1%)	0.013	590 (1%)	297 (0%)	0.053

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S9: Characteristics of unweighted populations in CPRD GOLD, database, stratified by staggered cohort and exposure status. Exposure is ChAdOx1 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	168,972	82,406		582,791	302,999		418,184	423,876		485,154	147,744	
<b>Age, median [Q25-Q75]</b>	78 [76-82]	84 [82-88]	0.657	45 [33-58]	71 [66-76]	1.153	42 [31-55]	56 [52-61]	0.560	37 [28-49]	44 [41-48]	0.262
<b>Sex: Female, N(%)</b>	93,648 (55%)	47,915 (58%)	0.055	344,408 (59%)	162,753 (54%)	0.109	230,680 (55%)	210,283 (50%)	0.111	215,080 (44%)	64,999 (44%)	0.007
<b>Years of prior history*, median [Q25-Q75]</b>	17 [13-20]	17 [14-20]	0.016	17 [10-19]	17 [13-19]	0.090	17 [9-19]	17 [10-19]	0.047	13 [6-18]	14 [7-18]	0.054
<b>Number of GP visits, median [Q25-Q75]</b>	11 [6-18]	14 [9-21]	0.177	5 [1-11]	11 [7-18]	0.451	3 [0-8]	6 [2-12]	0.245	0 [0-4]	3 [0-7]	0.174
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.053	0[0-0]	0[0-0]	0.074	0[0-0]	0[0-0]	0.018	0[0-0]	0[0-0]	0.029
<b>Comorbidities**, N(%)</b>												
Anxiety	20,087 (12%)	9,923 (12%)	0.005	132,145 (23%)	49,010 (16%)	0.165	83,054 (20%)	75,258 (18%)	0.054	66,918 (14%)	24,601 (17%)	0.080
Asthma	15,567 (9%)	8,491 (10%)	0.037	119,442 (20%)	39,988 (13%)	0.196	68,792 (16%)	48,034 (11%)	0.148	31,538 (7%)	10,517 (7%)	0.025
Chronic kidney disease	29,280 (17%)	21,564 (26%)	0.216	15,435 (3%)	34,168 (11%)	0.344	6,675 (2%)	7,553 (2%)	0.014	4,947 (1%)	739 (1%)	0.060
COPD	14,234 (8%)	6,837 (8%)	0.005	12,242 (2%)	27,472 (9%)	0.307	5,122 (1%)	6,334 (1%)	0.023	3,834 (1%)	640 (0%)	0.046
Dementia	6,664 (4%)	4,773 (6%)	0.086	1,998 (0%)	5,124 (2%)	0.135	1,201 (0%)	548 (0%)	0.035	831 (0%)	126 (0%)	0.024
Depressive disorder	16,333 (10%)	6,998 (8%)	0.041	111,526 (19%)	45,154 (15%)	0.113	66,763 (16%)	70,703 (17%)	0.019	51,687 (11%)	21,711 (15%)	0.122
Diabetes	23,547 (14%)	12,387 (15%)	0.031	29,089 (5%)	43,647 (14%)	0.322	12,392 (3%)	24,219 (6%)	0.135	9,455 (2%)	2,254 (2%)	0.032
GERD	7,613 (5%)	4,054 (5%)	0.020	18,044 (3%)	14,294 (5%)	0.084	8,869 (2%)	14,447 (3%)	0.079	6,051 (1%)	2,883 (2%)	0.056
Heart failure	7,468 (4%)	5,058 (6%)	0.077	4,016 (1%)	9,180 (3%)	0.174	1,738 (0%)	2,308 (1%)	0.019	1,316 (0%)	191 (0%)	0.032
Hypertension	56,262 (33%)	31,217 (38%)	0.096	58,578 (10%)	88,833 (29%)	0.499	24,450 (6%)	59,554 (14%)	0.277	16,971 (3%)	6,761 (5%)	0.055
Hypothyroidism	12,132 (7%)	7,042 (9%)	0.051	21,999 (4%)	20,521 (7%)	0.134	10,622 (3%)	17,382 (4%)	0.087	6,848 (1%)	3,245 (2%)	0.059
Malignant neoplastic disease	30,670 (18%)	18,950 (23%)	0.120	19,707 (3%)	42,687 (14%)	0.386	8,893 (2%)	17,903 (4%)	0.120	6,143 (1%)	2,192 (1%)	0.019

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Myocardial infarction	7,704 (5%)	4,500 (5%)	0.041	8,413 (1%)	13,456 (4%)	0.178	2,660 (1%)	5,280 (1%)	0.063	2,057 (0%)	330 (0%)	0.035
Osteoporosis	12,732 (8%)	8,564 (10%)	0.100	5,847 (1%)	16,117 (5%)	0.249	2,576 (1%)	4,330 (1%)	0.045	1,923 (0%)	408 (0%)	0.021
Pneumonia	5,401 (3%)	3,231 (4%)	0.039	7,241 (1%)	8,604 (3%)	0.113	3,814 (1%)	4,527 (1%)	0.016	2,615 (1%)	921 (1%)	0.011
Rheumatoid arthritis	2,559 (2%)	1,257 (2%)	0.001	4,017 (1%)	5,999 (2%)	0.113	1,286 (0%)	2,405 (1%)	0.039	918 (0%)	191 (0%)	0.015
Stroke	7,200 (4%)	4,193 (5%)	0.039	5,885 (1%)	10,213 (3%)	0.162	2,167 (1%)	3,789 (1%)	0.045	1,625 (0%)	369 (0%)	0.016
Venous thromboembolism	6,185 (4%)	3,550 (4%)	0.033	7,335 (1%)	9,466 (3%)	0.128	3,072 (1%)	6,339 (1%)	0.073	2,712 (1%)	460 (0%)	0.038

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S10: Characteristics of weighted populations in CPRD GOLD, database, stratified by staggered cohort and exposure status. Exposure is BNT162b2 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	15,295	15,304		60,813	61,113		24,008	24,157		151,713	152,100	
<b>Age, median [Q25-Q75]</b>	80 [77-85]	80 [77-85]	0.000	64 [53-70]	66 [52-70]	0.008	52 [44-58]	52 [44-58]	0.004	32 [24-38]	32 [24-38]	0.003
<b>Sex: Female, N(%)</b>	8,644 (57%)	8,657 (57%)	0.001	34,612 (57%)	34,776 (57%)	0.000	12,846 (54%)	12,993 (54%)	0.006	66,947 (44%)	67,555 (44%)	0.006
<b>Years of prior history*, median [Q25-Q75]</b>	17 [12-20]	18 [12-21]	0.001	17 [12-19]	17 [11-19]	0.003	17 [11-19]	17 [11-19]	0.004	13 [6-18]	14 [5-18]	0.001
<b>Number of GP visits, median [Q25-Q75]</b>	12 [7-20]	12 [8-20]	0.001	8 [3-15]	8 [4-15]	0.009	4 [0-10]	4 [1-10]	0.006	0 [0-5]	2 [0-5]	0.007
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.006	0[0-0]	0[0-0]	0.004	0[0-0]	0[0-0]	0.001	0[0-0]	0[0-0]	0.013
<b>Comorbidities**, N(%)</b>												
Anxiety	1,969 (13%)	1,940 (13%)	0.006	11,790 (19%)	11,914 (19%)	0.003	5,342 (22%)	5,235 (22%)	0.014	24,455 (16%)	23,928 (16%)	0.011
Asthma	1,498 (10%)	1,488 (10%)	0.002	9,126 (15%)	9,093 (15%)	0.004	2,926 (12%)	2,985 (12%)	0.005	12,195 (8%)	11,929 (8%)	0.007
Chronic kidney disease	3,112 (20%)	3,057 (20%)	0.009	3,563 (6%)	3,764 (6%)	0.013	398 (2%)	407 (2%)	0.002	468 (0%)	346 (0%)	0.016
COPD	1,190 (8%)	1,151 (8%)	0.010	3,222 (5%)	3,237 (5%)	0.000	293 (1%)	274 (1%)	0.008	315 (0%)	250 (0%)	0.010
Dementia	1,087 (7%)	864 (6%)	0.060	646 (1%)	355 (1%)	0.053	55 (0%)	80 (0%)	0.019	21 (0%)	28 (0%)	0.004
Depressive disorder	1,527 (10%)	1,496 (10%)	0.007	10,709 (18%)	10,912 (18%)	0.006	4,382 (18%)	4,343 (18%)	0.007	17,112 (11%)	16,594 (11%)	0.012
Diabetes	2,193 (14%)	2,173 (14%)	0.004	6,057 (10%)	6,199 (10%)	0.006	883 (4%)	858 (4%)	0.007	1,609 (1%)	1,271 (1%)	0.023
GERD	880 (6%)	872 (6%)	0.003	2,440 (4%)	2,505 (4%)	0.004	659 (3%)	706 (3%)	0.011	1,935 (1%)	1,961 (1%)	0.001
Heart failure	857 (6%)	748 (5%)	0.032	1,097 (2%)	933 (2%)	0.022	119 (0%)	77 (0%)	0.027	107 (0%)	77 (0%)	0.008
Hypertension	5,338 (35%)	5,312 (35%)	0.004	12,828 (21%)	12,901 (21%)	0.000	2,597 (11%)	2,645 (11%)	0.004	2,260 (1%)	2,369 (2%)	0.006
Hypothyroidism	1,129 (7%)	1,067 (7%)	0.016	3,476 (6%)	3,416 (6%)	0.005	935 (4%)	954 (4%)	0.003	1,772 (1%)	1,653 (1%)	0.008
Malignant neoplastic disease	3,126 (20%)	3,097 (20%)	0.005	5,084 (8%)	5,529 (9%)	0.024	864 (4%)	922 (4%)	0.011	877 (1%)	902 (1%)	0.002
Myocardial infarction	764 (5%)	681 (4%)	0.026	1,797 (3%)	1,853 (3%)	0.005	230 (1%)	186 (1%)	0.020	189 (0%)	128 (0%)	0.013

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Osteoporosis	1,312 (9%)	1,225 (8%)	0.021	1,775 (3%)	1,805 (3%)	0.002	251 (1%)	282 (1%)	0.012	154 (0%)	135 (0%)	0.004
Pneumonia	573 (4%)	475 (3%)	0.035	1,232 (2%)	1,107 (2%)	0.016	256 (1%)	244 (1%)	0.005	744 (0%)	698 (0%)	0.005
Rheumatoid arthritis	248 (2%)	234 (2%)	0.008	854 (1%)	945 (2%)	0.012	113 (0%)	102 (0%)	0.007	165 (0%)	62 (0%)	0.025
Stroke	739 (5%)	650 (4%)	0.028	1,291 (2%)	1,297 (2%)	0.000	172 (1%)	129 (1%)	0.023	204 (0%)	138 (0%)	0.013
Venous thromboembolism	640 (4%)	622 (4%)	0.006	1,355 (2%)	1,347 (2%)	0.002	273 (1%)	256 (1%)	0.008	604 (0%)	288 (0%)	0.039

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S11: Characteristics of unweighted populations in CPRD GOLD, database, stratified by staggered cohort and exposure status. Exposure is BNT162b2 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	169,459	32,755		584,309	180,670		416,549	36,748		465,326	365,096	
<b>Age, median [Q25-Q75]</b>	78 [76-82]	81 [79-86]	0.306	45 [33-58]	70 [66-74]	1.059	42 [31-55]	54 [50-60]	0.407	37 [28-49]	31 [24-37]	0.445
<b>Sex: Female, N(%)</b>	93,939 (55%)	18,415 (56%)	0.016	345,249 (59%)	97,747 (54%)	0.101	229,807 (55%)	19,649 (53%)	0.034	206,080 (44%)	167,510 (46%)	0.032
<b>Years of prior history*, median [Q25-Q75]</b>	17 [13-20]	18 [13-21]	0.017	17 [10-19]	17 [12-19]	0.076	17 [9-19]	18 [12-20]	0.153	13 [6-18]	15 [6-18]	0.018
<b>Number of GP visits, median [Q25-Q75]</b>	11 [6-18]	14 [9-21]	0.172	5 [1-11]	10 [6-16]	0.348	3 [0-8]	6 [2-11]	0.183	0 [0-4]	2 [0-6]	0.092
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.046	0[0-0]	0[0-0]	0.061	0[0-0]	0[0-0]	0.005	0[0-0]	0[0-0]	0.045
<b>Comorbidities**, N(%)</b>												
Anxiety	20,145 (12%)	4,336 (13%)	0.041	132,397 (23%)	28,697 (16%)	0.172	82,752 (20%)	8,004 (22%)	0.047	64,849 (14%)	59,094 (16%)	0.063
Asthma	15,611 (9%)	3,250 (10%)	0.024	119,679 (20%)	21,396 (12%)	0.236	68,556 (16%)	4,053 (11%)	0.158	30,579 (7%)	33,240 (9%)	0.094
Chronic kidney disease	29,378 (17%)	7,430 (23%)	0.134	15,504 (3%)	15,033 (8%)	0.251	6,636 (2%)	566 (2%)	0.004	4,692 (1%)	578 (0%)	0.112
COPD	14,265 (8%)	2,417 (7%)	0.039	12,276 (2%)	11,545 (6%)	0.214	5,085 (1%)	348 (1%)	0.026	3,657 (1%)	285 (0%)	0.108
Dementia	6,705 (4%)	1,895 (6%)	0.085	2,008 (0%)	1,375 (1%)	0.056	1,168 (0%)	87 (0%)	0.009	746 (0%)	29 (0%)	0.053
Depressive disorder	16,385 (10%)	3,310 (10%)	0.015	111,708 (19%)	26,294 (15%)	0.122	66,510 (16%)	6,569 (18%)	0.051	49,969 (11%)	39,181 (11%)	0.000
Diabetes	23,614 (14%)	4,882 (15%)	0.028	29,200 (5%)	22,552 (12%)	0.267	12,338 (3%)	1,191 (3%)	0.016	9,143 (2%)	2,507 (1%)	0.112
GERD	7,655 (5%)	2,012 (6%)	0.072	18,069 (3%)	8,525 (5%)	0.084	8,839 (2%)	1,093 (3%)	0.054	5,864 (1%)	5,213 (1%)	0.015
Heart failure	7,502 (4%)	1,782 (5%)	0.047	4,026 (1%)	3,669 (2%)	0.116	1,715 (0%)	100 (0%)	0.024	1,236 (0%)	98 (0%)	0.063
Hypertension	56,411 (33%)	11,995 (37%)	0.070	58,749 (10%)	49,763 (28%)	0.459	24,301 (6%)	4,679 (13%)	0.239	16,363 (4%)	4,776 (1%)	0.144
Hypothyroidism	12,163 (7%)	2,373 (7%)	0.003	22,061 (4%)	11,106 (6%)	0.109	10,565 (3%)	1,553 (4%)	0.094	6,617 (1%)	4,180 (1%)	0.025
Malignant neoplastic disease	30,728 (18%)	6,972 (21%)	0.079	19,832 (3%)	22,617 (13%)	0.342	8,827 (2%)	1,522 (4%)	0.116	5,804 (1%)	1,796 (0%)	0.081

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Myocardial infarction	7,716 (5%)	1,603 (5%)	0.016	8,437 (1%)	6,621 (4%)	0.141	2,644 (1%)	271 (1%)	0.012	1,985 (0%)	154 (0%)	0.080
Osteoporosis	12,776 (8%)	2,770 (8%)	0.034	5,867 (1%)	7,531 (4%)	0.200	2,558 (1%)	458 (1%)	0.066	1,841 (0%)	205 (0%)	0.072
Pneumonia	5,415 (3%)	1,032 (3%)	0.003	7,266 (1%)	3,418 (2%)	0.052	3,790 (1%)	345 (1%)	0.003	2,512 (1%)	1,696 (0%)	0.011
Rheumatoid arthritis	2,566 (2%)	512 (2%)	0.004	4,018 (1%)	2,929 (2%)	0.087	1,276 (0%)	154 (0%)	0.019	881 (0%)	111 (0%)	0.048
Stroke	7,203 (4%)	1,490 (5%)	0.015	5,907 (1%)	4,632 (3%)	0.117	2,152 (1%)	199 (1%)	0.003	1,578 (0%)	225 (0%)	0.062
Venous thromboembolism	6,198 (4%)	1,389 (4%)	0.030	7,333 (1%)	4,490 (2%)	0.091	3,056 (1%)	370 (1%)	0.029	2,585 (1%)	496 (0%)	0.072

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease



**Table S12: Characteristics of weighted populations in SIDIAP, database, stratified by staggered cohort and exposure status. Exposure is any COVID-19 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	58,342	58,535		235,543	235,780		344,520	342,678		413,428	412,893	
<b>Age, median [Q25-Q75]</b>	86 [83-89]	86 [82-89]	0.002	68 [63-73]	68 [63-74]	0.003	52 [46-58]	52 [46-59]	0.000	36 [28-44]	36 [28-44]	0.002
<b>Sex: Female, N(%)</b>	36,115 (62%)	36,214 (62%)	0.001	128,806 (55%)	129,053 (55%)	0.001	164,316 (48%)	163,188 (48%)	0.001	188,426 (46%)	188,471 (46%)	0.001
<b>Years of prior history*, median [Q25-Q75]</b>	15 [15-15]	15 [15-15]	0.001	15 [15-15]	15 [15-15]	0.000	15 [15-15]	15 [15-15]	0.003	15 [13-16]	15 [13-16]	0.004
<b>Number of GP visits, median [Q25-Q75]</b>	8 [3-15]	8 [4-15]	0.007	4 [0-9]	4 [1-9]	0.014	0 [0-6]	2 [0-6]	0.001	0 [0-4]	0 [0-5]	0.014
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.006	0[0-0]	0[0-0]	0.002	0[0-0]	0[0-0]	0.004	0[0-0]	0[0-0]	0.009
<b>Comorbidities**, N(%)</b>												
Anxiety	11,384 (20%)	11,467 (20%)	0.002	52,314 (22%)	52,262 (22%)	0.001	81,514 (24%)	80,775 (24%)	0.002	84,856 (21%)	83,145 (20%)	0.010
Asthma	3,708 (6%)	3,627 (6%)	0.007	10,973 (5%)	10,703 (5%)	0.006	14,915 (4%)	14,492 (4%)	0.005	19,969 (5%)	19,628 (5%)	0.004
Chronic kidney disease	18,755 (32%)	18,803 (32%)	0.001	21,147 (9%)	21,249 (9%)	0.001	7,411 (2%)	7,335 (2%)	0.001	3,293 (1%)	2,846 (1%)	0.012
COPD	7,008 (12%)	6,983 (12%)	0.002	17,160 (7%)	16,784 (7%)	0.006	8,852 (3%)	8,622 (3%)	0.003	3,210 (1%)	3,215 (1%)	0.000
Dementia	5,686 (10%)	5,812 (10%)	0.006	4,628 (2%)	4,425 (2%)	0.006	1,247 (0%)	1,229 (0%)	0.001	673 (0%)	689 (0%)	0.001
Depressive disorder	10,960 (19%)	11,020 (19%)	0.001	34,232 (15%)	34,571 (15%)	0.004	34,243 (10%)	32,427 (9%)	0.016	23,679 (6%)	23,024 (6%)	0.007
Diabetes	14,529 (25%)	14,269 (24%)	0.012	39,335 (17%)	39,133 (17%)	0.003	25,964 (8%)	26,135 (8%)	0.003	14,136 (3%)	14,091 (3%)	0.000
GERD	6,898 (12%)	6,871 (12%)	0.003	21,088 (9%)	21,212 (9%)	0.002	16,959 (5%)	17,024 (5%)	0.002	10,569 (3%)	10,903 (3%)	0.005
Heart failure	9,320 (16%)	9,141 (16%)	0.010	10,251 (4%)	10,196 (4%)	0.001	4,001 (1%)	3,743 (1%)	0.007	1,606 (0%)	1,565 (0%)	0.002
Hypertension	38,140 (65%)	37,917 (65%)	0.013	96,384 (41%)	96,118 (41%)	0.003	58,596 (17%)	57,241 (17%)	0.008	22,160 (5%)	22,739 (6%)	0.006
Hypothyroidism	7,350 (13%)	7,236 (12%)	0.007	24,054 (10%)	24,260 (10%)	0.003	21,956 (6%)	21,573 (6%)	0.003	17,452 (4%)	17,758 (4%)	0.004
Malignant neoplastic disease	15,402 (26%)	15,230 (26%)	0.009	37,052 (16%)	38,490 (16%)	0.016	19,765 (6%)	19,599 (6%)	0.001	9,413 (2%)	8,865 (2%)	0.009

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Myocardial infarction	2,258 (4%)	2,235 (4%)	0.003	5,972 (3%)	5,812 (2%)	0.005	3,615 (1%)	3,448 (1%)	0.004	1,362 (0%)	1,364 (0%)	0.000
Osteoporosis	9,270 (16%)	9,151 (16%)	0.007	18,870 (8%)	19,036 (8%)	0.002	7,126 (2%)	7,039 (2%)	0.001	2,254 (1%)	2,040 (0%)	0.007
Pneumonia	6,643 (11%)	6,563 (11%)	0.005	15,630 (7%)	15,557 (7%)	0.002	14,821 (4%)	14,580 (4%)	0.002	14,171 (3%)	14,083 (3%)	0.001
Rheumatoid arthritis	765 (1%)	727 (1%)	0.006	2,274 (1%)	2,286 (1%)	0.000	1,544 (0%)	1,592 (0%)	0.002	754 (0%)	646 (0%)	0.006
Stroke	5,119 (9%)	5,043 (9%)	0.006	8,750 (4%)	7,706 (3%)	0.024	4,343 (1%)	4,147 (1%)	0.005	1,828 (0%)	1,840 (0%)	0.001
Venous thromboembolism	2,469 (4%)	2,418 (4%)	0.005	4,745 (2%)	4,419 (2%)	0.010	3,365 (1%)	2,982 (1%)	0.011	1,931 (0%)	1,777 (0%)	0.005

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S13: Characteristics of unweighted populations in SIDIAP, database, stratified by staggered cohort and exposure status. Exposure is any COVID-19 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	223,962	89,941		433,151	819,590		869,497	954,232		1,061,634	880,950	
<b>Age, median [Q25-Q75]</b>	85 [82-88]	87 [83-90]	0.253	67 [62-72]	72 [65-78]	0.391	48 [43-57]	54 [49-58]	0.192	38 [28-51]	37 [29-43]	0.246
<b>Sex: Female, N(%)</b>	136,888 (61%)	56,235 (63%)	0.029	237,494 (55%)	443,019 (54%)	0.016	409,207 (47%)	462,599 (48%)	0.028	488,499 (46%)	408,555 (46%)	0.007
<b>Years of prior history*, median [Q25-Q75]</b>	15 [15-15]	15 [15-15]	0.051	15 [15-15]	15 [15-15]	0.185	15 [15-15]	15 [15-15]	0.246	15 [10-16]	15 [15-16]	0.195
<b>Number of GP visits, median [Q25-Q75]</b>	7 [2-13]	10 [5-18]	0.251	3 [0-8]	6 [2-11]	0.168	1 [0-5]	2 [0-7]	0.105	0 [0-4]	2 [0-6]	0.060
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-1]	0.070	0[0-0]	0[0-1]	0.042	0[0-0]	0[0-1]	0.073	0[0-0]	0[0-1]	0.123
<b>Comorbidities**, N(%)</b>												
Anxiety	41,908 (19%)	18,117 (20%)	0.036	97,857 (23%)	181,286 (22%)	0.011	197,922 (23%)	233,123 (24%)	0.039	203,019 (19%)	186,562 (21%)	0.051
Asthma	13,371 (6%)	5,841 (6%)	0.022	19,809 (5%)	41,966 (5%)	0.025	36,811 (4%)	42,221 (4%)	0.009	45,374 (4%)	46,776 (5%)	0.049
Chronic kidney disease	63,041 (28%)	31,132 (35%)	0.140	32,450 (7%)	101,792 (12%)	0.165	22,454 (3%)	20,303 (2%)	0.030	20,368 (2%)	5,314 (1%)	0.118
COPD	24,459 (11%)	11,292 (13%)	0.051	28,780 (7%)	67,795 (8%)	0.062	19,020 (2%)	27,451 (3%)	0.044	15,415 (1%)	5,836 (1%)	0.077
Dementia	16,743 (7%)	10,455 (12%)	0.142	7,404 (2%)	19,153 (2%)	0.045	6,009 (1%)	2,787 (0%)	0.057	5,866 (1%)	1,310 (0%)	0.068
Depressive disorder	38,148 (17%)	18,040 (20%)	0.078	61,308 (14%)	124,929 (15%)	0.031	77,039 (9%)	98,723 (10%)	0.050	66,864 (6%)	49,608 (6%)	0.028
Diabetes	51,964 (23%)	22,968 (26%)	0.054	65,572 (15%)	155,362 (19%)	0.102	60,254 (7%)	78,356 (8%)	0.048	49,331 (5%)	29,768 (3%)	0.065
GERD	25,376 (11%)	10,728 (12%)	0.019	34,715 (8%)	87,626 (11%)	0.092	37,828 (4%)	53,565 (6%)	0.058	31,600 (3%)	23,657 (3%)	0.018
Heart failure	28,538 (13%)	16,202 (18%)	0.147	16,697 (4%)	42,924 (5%)	0.066	11,909 (1%)	10,469 (1%)	0.025	10,738 (1%)	2,776 (0%)	0.086
Hypertension	138,631 (62%)	60,128 (67%)	0.104	157,290 (36%)	390,610 (48%)	0.231	125,239 (14%)	188,390 (20%)	0.142	97,835 (9%)	43,351 (5%)	0.168

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Hypothyroidism	26,875 (12%)	11,473 (13%)	0.023	42,245 (10%)	89,496 (11%)	0.038	50,396 (6%)	64,873 (7%)	0.041	49,279 (5%)	38,477 (4%)	0.013
Malignant neoplastic disease	54,714 (24%)	24,173 (27%)	0.056	81,394 (19%)	151,745 (19%)	0.007	48,971 (6%)	59,566 (6%)	0.026	37,755 (4%)	18,021 (2%)	0.092
Myocardial infarction	7,886 (4%)	3,642 (4%)	0.028	9,894 (2%)	22,773 (3%)	0.031	7,570 (1%)	11,483 (1%)	0.033	6,171 (1%)	2,459 (0%)	0.046
Osteoporosis	32,239 (14%)	14,846 (17%)	0.058	29,512 (7%)	81,707 (10%)	0.114	16,393 (2%)	21,679 (2%)	0.027	14,373 (1%)	3,343 (0%)	0.105
Pneumonia	22,254 (10%)	10,959 (12%)	0.072	27,837 (6%)	61,325 (7%)	0.042	34,513 (4%)	44,236 (5%)	0.033	36,413 (3%)	32,657 (4%)	0.015
Rheumatoid arthritis	2,666 (1%)	1,204 (1%)	0.013	3,771 (1%)	8,890 (1%)	0.022	3,239 (0%)	4,770 (0%)	0.019	2,706 (0%)	1,281 (0%)	0.024
Stroke	16,690 (7%)	8,542 (9%)	0.073	14,256 (3%)	32,612 (4%)	0.037	10,877 (1%)	12,068 (1%)	0.001	9,400 (1%)	3,384 (0%)	0.063
Venous thromboembolism	8,014 (4%)	4,126 (5%)	0.051	8,172 (2%)	17,846 (2%)	0.021	7,747 (1%)	8,920 (1%)	0.005	6,632 (1%)	3,768 (0%)	0.027

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S14: Characteristics of weighted populations in SIDIAP, database, stratified by staggered cohort and exposure status. Exposure is BNT162b2 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	57,981	57,843		99,838	99,488		276,241	273,593		312,492	313,346	
<b>Age, median [Q25-Q75]</b>	86 [83-89]	86 [82-89]	0.000	74 [71-81]	74 [72-81]	0.006	50 [45-56]	50 [45-56]	0.003	36 [29-43]	36 [29-43]	0.004
<b>Sex: Female, N(%)</b>	35,828 (62%)	35,895 (62%)	0.005	58,343 (58%)	57,844 (58%)	0.006	130,375 (47%)	129,701 (47%)	0.004	145,270 (46%)	144,384 (46%)	0.008
<b>Years of prior history*, median [Q25-Q75]</b>	15 [15-15]	15 [15-15]	0.002	15 [15-15]	15 [15-15]	0.005	15 [15-15]	15 [15-15]	0.001	15 [13-16]	15 [14-16]	0.004
<b>Number of GP visits, median [Q25-Q75]</b>	8 [3-15]	8 [4-15]	0.008	4 [0-10]	6 [2-10]	0.013	0 [0-5]	2 [0-6]	0.000	0 [0-4]	0 [0-5]	0.012
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.006	0[0-0]	0[0-0]	0.009	0[0-0]	0[0-0]	0.005	0[0-0]	0[0-0]	0.010
<b>Comorbidities**, N(%)</b>												
Anxiety	11,327 (20%)	11,359 (20%)	0.003	20,281 (20%)	20,181 (20%)	0.001	67,000 (24%)	63,263 (23%)	0.027	65,060 (21%)	64,616 (21%)	0.005
Asthma	3,734 (6%)	3,583 (6%)	0.010	5,213 (5%)	5,179 (5%)	0.001	12,220 (4%)	11,760 (4%)	0.006	15,491 (5%)	15,211 (5%)	0.005
Chronic kidney disease	18,610 (32%)	18,576 (32%)	0.000	15,548 (16%)	15,607 (16%)	0.003	5,583 (2%)	5,399 (2%)	0.003	1,999 (1%)	2,008 (1%)	0.000
COPD	6,980 (12%)	6,907 (12%)	0.003	9,163 (9%)	9,045 (9%)	0.003	6,020 (2%)	6,047 (2%)	0.002	1,998 (1%)	2,000 (1%)	0.000
Dementia	5,678 (10%)	5,771 (10%)	0.006	4,152 (4%)	3,716 (4%)	0.022	1,037 (0%)	980 (0%)	0.003	502 (0%)	506 (0%)	0.000
Depressive disorder	10,920 (19%)	10,923 (19%)	0.001	15,653 (16%)	15,532 (16%)	0.002	26,419 (10%)	24,357 (9%)	0.023	17,262 (6%)	17,507 (6%)	0.003
Diabetes	14,416 (25%)	14,096 (24%)	0.011	20,461 (20%)	20,645 (21%)	0.006	19,302 (7%)	18,543 (7%)	0.008	10,119 (3%)	10,440 (3%)	0.005
GERD	6,784 (12%)	6,826 (12%)	0.003	10,187 (10%)	10,088 (10%)	0.002	12,811 (5%)	12,805 (5%)	0.002	7,750 (2%)	8,224 (3%)	0.009
Heart failure	9,390 (16%)	8,983 (16%)	0.018	7,563 (8%)	7,296 (7%)	0.009	3,044 (1%)	2,699 (1%)	0.011	1,069 (0%)	1,049 (0%)	0.001
Hypertension	37,879 (65%)	37,465 (65%)	0.012	51,262 (51%)	50,608 (51%)	0.010	42,266 (15%)	41,291 (15%)	0.006	15,063 (5%)	15,323 (5%)	0.003
Hypothyroidism	7,310 (13%)	7,166 (12%)	0.007	11,611 (12%)	11,249 (11%)	0.010	16,597 (6%)	16,509 (6%)	0.001	13,155 (4%)	13,617 (4%)	0.007
Malignant neoplastic disease	15,302 (26%)	14,971 (26%)	0.012	19,393 (19%)	18,719 (19%)	0.015	14,311 (5%)	13,981 (5%)	0.003	6,555 (2%)	6,398 (2%)	0.004
Myocardial infarction	2,286 (4%)	2,182 (4%)	0.009	3,130 (3%)	2,924 (3%)	0.011	2,569 (1%)	2,451 (1%)	0.004	875 (0%)	880 (0%)	0.000

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Osteoporosis	9,170 (16%)	9,085 (16%)	0.003	11,182 (11%)	11,201 (11%)	0.002	4,764 (2%)	4,639 (2%)	0.002	1,344 (0%)	1,306 (0%)	0.002
Pneumonia	6,588 (11%)	6,476 (11%)	0.005	7,945 (8%)	7,918 (8%)	0.000	11,759 (4%)	11,273 (4%)	0.007	10,730 (3%)	10,798 (3%)	0.001
Rheumatoid arthritis	755 (1%)	718 (1%)	0.006	1,064 (1%)	1,111 (1%)	0.005	1,113 (0%)	1,026 (0%)	0.004	536 (0%)	461 (0%)	0.006
Stroke	5,070 (9%)	5,006 (9%)	0.003	5,363 (5%)	5,086 (5%)	0.012	3,121 (1%)	3,043 (1%)	0.002	1,199 (0%)	1,253 (0%)	0.003
Venous thromboembolism	2,452 (4%)	2,378 (4%)	0.006	2,660 (3%)	2,526 (3%)	0.008	2,527 (1%)	2,211 (1%)	0.012	1,394 (0%)	1,327 (0%)	0.003

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S15: Characteristics of unweighted populations in SIDIAP, database, stratified by staggered cohort and exposure status. Exposure is BNT162b2 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	223,960	88,896		433,111	445,581		869,109	706,435		1,068,043	580,329	
<b>Age, median [Q25-Q75]</b>	85 [82-88]	87 [84-90]	0.258	67 [62-72]	78 [74-83]	0.943	48 [43-57]	53 [48-57]	0.127	38 [28-51]	38 [31-43]	0.231
<b>Sex: Female, N(%)</b>	136,891 (61%)	55,704 (63%)	0.032	237,440 (55%)	254,378 (57%)	0.046	409,076 (47%)	341,289 (48%)	0.025	491,528 (46%)	274,150 (47%)	0.024
<b>Years of prior history*, median [Q25-Q75]</b>	15 [15-15]	15 [15-15]	0.051	15 [15-15]	15 [15-15]	0.206	15 [15-15]	15 [15-15]	0.244	15 [10-16]	15 [15-16]	0.211
<b>Number of GP visits, median [Q25-Q75]</b>	7 [2-13]	10 [5-18]	0.253	3 [0-8]	7 [3-12]	0.247	1 [0-5]	2 [0-7]	0.093	0 [0-4]	2 [0-6]	0.059
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-1]	0.067	0[0-0]	0[0-1]	0.019	0[0-0]	0[0-1]	0.074	0[0-0]	0[0-1]	0.121
<b>Comorbidities**, N(%)</b>												
Anxiety	41,914 (19%)	17,962 (20%)	0.038	97,901 (23%)	91,620 (21%)	0.050	197,933 (23%)	172,434 (24%)	0.039	204,108 (19%)	125,466 (22%)	0.062
Asthma	13,370 (6%)	5,796 (7%)	0.023	19,824 (5%)	25,291 (6%)	0.050	36,788 (4%)	31,586 (4%)	0.012	45,747 (4%)	30,865 (5%)	0.048
Chronic kidney disease	63,046 (28%)	30,745 (35%)	0.139	32,447 (7%)	83,968 (19%)	0.341	22,494 (3%)	13,920 (2%)	0.041	20,416 (2%)	3,171 (1%)	0.124
COPD	24,471 (11%)	11,169 (13%)	0.051	28,773 (7%)	44,207 (10%)	0.119	19,028 (2%)	17,815 (3%)	0.022	15,424 (1%)	3,218 (1%)	0.090
Dementia	16,748 (7%)	10,393 (12%)	0.143	7,389 (2%)	17,606 (4%)	0.136	6,003 (1%)	2,033 (0%)	0.058	5,878 (1%)	856 (0%)	0.068
Depressive disorder	38,161 (17%)	17,894 (20%)	0.079	61,309 (14%)	72,447 (16%)	0.059	77,050 (9%)	69,517 (10%)	0.033	67,070 (6%)	32,476 (6%)	0.029
Diabetes	51,948 (23%)	22,682 (26%)	0.054	65,583 (15%)	99,692 (22%)	0.186	60,242 (7%)	53,330 (8%)	0.024	49,433 (5%)	19,502 (3%)	0.065
GERD	25,370 (11%)	10,611 (12%)	0.019	34,704 (8%)	53,110 (12%)	0.131	37,842 (4%)	37,707 (5%)	0.046	31,662 (3%)	15,544 (3%)	0.017
Heart failure	28,525 (13%)	16,041 (18%)	0.147	16,686 (4%)	34,932 (8%)	0.171	11,920 (1%)	7,057 (1%)	0.034	10,734 (1%)	1,642 (0%)	0.090
Hypertension	138,655 (62%)	59,414 (67%)	0.103	157,291 (36%)	252,365 (57%)	0.416	125,235 (14%)	128,859 (18%)	0.104	97,944 (9%)	26,383 (5%)	0.184

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Hypothyroidism	26,868 (12%)	11,363 (13%)	0.024	42,216 (10%)	53,488 (12%)	0.073	50,384 (6%)	46,214 (7%)	0.031	49,424 (5%)	25,961 (4%)	0.007
Malignant neoplastic disease	54,729 (24%)	23,784 (27%)	0.053	81,399 (19%)	96,204 (22%)	0.070	48,967 (6%)	40,510 (6%)	0.004	37,874 (4%)	11,535 (2%)	0.095
Myocardial infarction	7,890 (4%)	3,590 (4%)	0.027	9,892 (2%)	14,140 (3%)	0.055	7,573 (1%)	7,753 (1%)	0.023	6,182 (1%)	1,405 (0%)	0.053
Osteoporosis	32,250 (14%)	14,701 (17%)	0.059	29,528 (7%)	56,885 (13%)	0.201	16,385 (2%)	14,126 (2%)	0.008	14,380 (1%)	1,876 (0%)	0.113
Pneumonia	22,249 (10%)	10,811 (12%)	0.071	27,831 (6%)	38,127 (9%)	0.081	34,511 (4%)	31,972 (5%)	0.028	36,645 (3%)	21,355 (4%)	0.013
Rheumatoid arthritis	2,666 (1%)	1,189 (1%)	0.013	3,769 (1%)	5,143 (1%)	0.028	3,242 (0%)	2,843 (0%)	0.005	2,700 (0%)	812 (0%)	0.026
Stroke	16,693 (7%)	8,475 (10%)	0.075	14,244 (3%)	24,307 (5%)	0.106	10,868 (1%)	8,114 (1%)	0.009	9,394 (1%)	2,033 (0%)	0.068
Venous thromboembolism	8,023 (4%)	4,072 (5%)	0.050	8,162 (2%)	12,564 (3%)	0.062	7,738 (1%)	6,066 (1%)	0.003	6,658 (1%)	2,434 (0%)	0.028

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease



**Table S16: Characteristics of weighted populations in SIDIAP, database, stratified by staggered cohort and exposure status. Exposure is ChAdOx1 vaccine.**

	Cohort 2			Cohort 3		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	120,307	120,802		44,033	43,901	
<b>Age, median [Q25-Q75]</b>	64 [61-66]	64 [61-66]	0.000	64 [61-66]	64 [61-67]	0.002
<b>Sex: Female, N(%)</b>	62,434 (52%)	62,425 (52%)	0.004	23,009 (52%)	22,980 (52%)	0.002
<b>Years of prior history*, median [Q25-Q75]</b>	15 [15-15]	15 [15-15]	0.003	15 [15-15]	15 [15-15]	0.005
<b>Number of GP visits, median [Q25-Q75]</b>	2 [0-7]	4 [1-8]	0.017	2 [0-7]	2 [0-7]	0.003
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.013	0[0-0]	0[0-0]	0.005
<b>Comorbidities**, N(%)</b>						
Anxiety	28,213 (23%)	27,989 (23%)	0.007	10,333 (23%)	9,717 (22%)	0.032
Asthma	4,909 (4%)	4,785 (4%)	0.006	1,664 (4%)	1,639 (4%)	0.002
Chronic kidney disease	4,390 (4%)	4,526 (4%)	0.005	1,556 (4%)	1,597 (4%)	0.006
COPD	6,702 (6%)	6,846 (6%)	0.004	2,405 (5%)	2,350 (5%)	0.005
Dementia	470 (0%)	397 (0%)	0.010	170 (0%)	171 (0%)	0.000
Depressive disorder	16,483 (14%)	16,258 (13%)	0.007	5,940 (13%)	5,813 (13%)	0.007
Diabetes	16,127 (13%)	16,418 (14%)	0.005	5,698 (13%)	5,705 (13%)	0.002
GERD	9,580 (8%)	9,569 (8%)	0.002	3,206 (7%)	3,216 (7%)	0.002
Heart failure	2,268 (2%)	2,236 (2%)	0.003	844 (2%)	847 (2%)	0.001
Hypertension	39,422 (33%)	39,551 (33%)	0.001	13,589 (31%)	13,737 (31%)	0.009
Hypothyroidism	10,965 (9%)	11,173 (9%)	0.005	4,002 (9%)	3,830 (9%)	0.013
Malignant neoplastic disease	12,621 (10%)	12,418 (10%)	0.007	4,304 (10%)	3,910 (9%)	0.030
Myocardial infarction	2,553 (2%)	2,500 (2%)	0.004	888 (2%)	868 (2%)	0.003
Osteoporosis	6,687 (6%)	6,679 (6%)	0.001	2,155 (5%)	2,200 (5%)	0.005
Pneumonia	6,452 (5%)	6,392 (5%)	0.003	2,243 (5%)	2,167 (5%)	0.007
Rheumatoid arthritis	1,009 (1%)	931 (1%)	0.008	337 (1%)	259 (1%)	0.021
Stroke	2,693 (2%)	2,582 (2%)	0.007	965 (2%)	1,000 (2%)	0.006
Venous thromboembolism	1,686 (1%)	1,469 (1%)	0.016	659 (1%)	541 (1%)	0.023

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease



**Table S17: Characteristics of unweighted populations in SIDIAP, database, stratified by staggered cohort and exposure status. Exposure is ChAdOx1 vaccine.**

	Cohort 2			Cohort 3		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	433,636	323,204		873,400	84,204	
<b>Age, median [Q25-Q75]</b>	67 [62-72]	64 [62-67]	0.241	48 [43-57]	64 [61-67]	0.986
<b>Sex: Female, N(%)</b>	237,722 (55%)	162,269 (50%)	0.093	411,107 (47%)	44,374 (53%)	0.113
<b>Years of prior history*, median [Q25-Q75]</b>	15 [15-15]	15 [15-15]	0.158	15 [15-15]	15 [15-15]	0.281
<b>Number of GP visits, median [Q25-Q75]</b>	3 [0-8]	4 [1-9]	0.037	1 [0-5]	4 [1-8]	0.182
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-1]	0.047	0[0-0]	0[0-0]	0.029
<b>Comorbidities**, N(%)</b>						
Anxiety	97,950 (23%)	77,793 (24%)	0.035	198,282 (23%)	19,626 (23%)	0.014
Asthma	19,861 (5%)	13,894 (4%)	0.014	36,915 (4%)	3,283 (4%)	0.017
Chronic kidney disease	32,497 (7%)	12,206 (4%)	0.162	22,570 (3%)	3,199 (4%)	0.069
COPD	28,826 (7%)	18,658 (6%)	0.036	19,103 (2%)	4,996 (6%)	0.191
Dementia	7,407 (2%)	1,009 (0%)	0.140	6,041 (1%)	345 (0%)	0.038
Depressive disorder	61,377 (14%)	44,463 (14%)	0.011	77,249 (9%)	11,874 (14%)	0.166
Diabetes	65,666 (15%)	45,453 (14%)	0.031	60,383 (7%)	12,142 (14%)	0.245
GERD	34,755 (8%)	28,610 (9%)	0.030	37,840 (4%)	6,754 (8%)	0.154
Heart failure	16,741 (4%)	5,636 (2%)	0.129	11,981 (1%)	1,703 (2%)	0.050
Hypertension	157,484 (36%)	114,179 (35%)	0.021	125,527 (14%)	28,314 (34%)	0.463
Hypothyroidism	42,257 (10%)	30,350 (9%)	0.012	50,476 (6%)	7,763 (9%)	0.131
Malignant neoplastic disease	81,510 (19%)	36,352 (11%)	0.212	49,066 (6%)	7,842 (9%)	0.141
Myocardial infarction	9,910 (2%)	7,242 (2%)	0.003	7,561 (1%)	1,784 (2%)	0.103
Osteoporosis	29,546 (7%)	19,864 (6%)	0.027	16,434 (2%)	4,382 (5%)	0.180
Pneumonia	27,865 (6%)	18,329 (6%)	0.032	34,617 (4%)	4,445 (5%)	0.063
Rheumatoid arthritis	3,762 (1%)	2,557 (1%)	0.008	3,246 (0%)	535 (1%)	0.037
Stroke	14,284 (3%)	6,369 (2%)	0.083	10,884 (1%)	1,915 (2%)	0.078
Venous thromboembolism	8,163 (2%)	3,613 (1%)	0.063	7,746 (1%)	1,110 (1%)	0.041

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease



**Table S18: Characteristics of weighted populations in CORIVA, database, stratified by staggered cohort and exposure status. Exposure is any COVID-19 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	10,630	10,630		3,863	3,863		17,929	17,929		18,740	18,740	
<b>Age, median [Q25-Q75]</b>	78 [72-83]	78 [72-83]	0.000	70 [65-75]	70 [65-75]	0.000	52 [45-59]	50 [45-59]	0.000	40 [30-51]	40 [30-51]	0.000
<b>Sex: Female, N(%)</b>	7,165 (67%)	7,165 (67%)	0.000	2,439 (63%)	2,439 (63%)	0.000	9,054 (50%)	9,054 (50%)	0.000	8,493 (45%)	8,493 (45%)	0.000
<b>Years of prior history*, median [Q25-Q75]</b>	4 [4-4]	4 [4-4]	0.000	4 [4-4]	4 [4-4]	0.000	4 [4-4]	4 [4-4]	0.000	5 [4-5]	5 [4-5]	0.000
<b>Number of GP visits, median [Q25-Q75]</b>	14 [4-24]	14 [6-23]	0.004	12 [3-23]	12 [5-22]	0.000	2 [0-11]	4 [1-10]	0.002	2 [0-8]	2 [0-8]	0.005
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.003	0[0-0]	0[0-0]	0.002	0[0-0]	0[0-0]	0.000	0[0-0]	0[0-0]	0.002
<b>Comorbidities**, N(%)</b>												
Anxiety	1,060 (10%)	1,076 (10%)	0.005	405 (10%)	415 (11%)	0.008	1,545 (9%)	1,500 (8%)	0.009	1,552 (8%)	1,495 (8%)	0.011
Asthma	996 (9%)	917 (9%)	0.026	372 (10%)	365 (9%)	0.006	936 (5%)	894 (5%)	0.011	845 (5%)	782 (4%)	0.016
Chronic kidney disease	1,015 (10%)	999 (9%)	0.005	336 (9%)	309 (8%)	0.025	347 (2%)	339 (2%)	0.003	212 (1%)	194 (1%)	0.009
COPD	757 (7%)	723 (7%)	0.012	264 (7%)	258 (7%)	0.006	442 (2%)	417 (2%)	0.009	318 (2%)	249 (1%)	0.030
Dementia	438 (4%)	412 (4%)	0.013	106 (3%)	90 (2%)	0.027	120 (1%)	131 (1%)	0.008	71 (0%)	70 (0%)	0.001
Depressive disorder	1,076 (10%)	1,083 (10%)	0.002	462 (12%)	433 (11%)	0.023	1,787 (10%)	1,764 (10%)	0.004	1,679 (9%)	1,739 (9%)	0.011
Diabetes	1,861 (18%)	1,833 (17%)	0.007	640 (17%)	588 (15%)	0.037	1,012 (6%)	963 (5%)	0.012	814 (4%)	764 (4%)	0.014
GERD	1,416 (13%)	1,458 (14%)	0.011	523 (14%)	531 (14%)	0.006	1,562 (9%)	1,600 (9%)	0.007	1,166 (6%)	1,172 (6%)	0.001
Heart failure	3,898 (37%)	3,839 (36%)	0.011	1,003 (26%)	970 (25%)	0.020	1,348 (8%)	1,324 (7%)	0.005	781 (4%)	737 (4%)	0.012
Hypertension	8,016 (75%)	8,221 (77%)	0.045	2,569 (67%)	2,641 (68%)	0.040	5,521 (31%)	5,643 (31%)	0.015	3,359 (18%)	3,538 (19%)	0.025
Hypothyroidism	1,218 (11%)	1,160 (11%)	0.017	419 (11%)	428 (11%)	0.007	981 (5%)	948 (5%)	0.008	654 (3%)	675 (4%)	0.006
Malignant neoplastic disease	1,655 (16%)	1,732 (16%)	0.020	640 (17%)	659 (17%)	0.013	771 (4%)	782 (4%)	0.003	455 (2%)	453 (2%)	0.001
Myocardial infarction	269 (3%)	264 (2%)	0.003	86 (2%)	71 (2%)	0.026	127 (1%)	116 (1%)	0.008	81 (0%)	75 (0%)	0.005
Osteoporosis	675 (6%)	685 (6%)	0.004	187 (5%)	176 (5%)	0.013	233 (1%)	230 (1%)	0.001	131 (1%)	146 (1%)	0.009
Pneumonia	771 (7%)	768 (7%)	0.001	249 (6%)	244 (6%)	0.005	657 (4%)	670 (4%)	0.004	567 (3%)	562 (3%)	0.002
Rheumatoid arthritis	268 (3%)	273 (3%)	0.003	139 (4%)	122 (3%)	0.024	209 (1%)	187 (1%)	0.012	130 (1%)	116 (1%)	0.009

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Stroke	460 (4%)	461 (4%)	0.001	147 (4%)	144 (4%)	0.004	179 (1%)	189 (1%)	0.006	112 (1%)	116 (1%)	0.003
Venous thromboembolism	469 (4%)	472 (4%)	0.001	171 (4%)	123 (3%)	0.064	306 (2%)	301 (2%)	0.002	219 (1%)	201 (1%)	0.009

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S19: Characteristics of unweighted populations in CORIVA, database, stratified by staggered cohort and exposure status. Exposure is any COVID-19 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	23,982	26,736		34,317	4,572		96,423	24,050		147,545	22,245	
<b>Age, median [Q25-Q75]</b>	79 [73-85]	77 [73-82]	0.127	72 [67-81]	70 [66-75]	0.177	54 [46-66]	51 [45-59]	0.227	42 [32-58]	40 [30-51]	0.186
<b>Sex: Female, N(%)</b>	16,532 (69%)	17,342 (65%)	0.087	21,862 (64%)	2,891 (63%)	0.010	48,984 (51%)	12,233 (51%)	0.001	72,057 (49%)	10,026 (45%)	0.076
<b>Years of prior history*, median [Q25-Q75]</b>	4 [4-4]	4 [4-4]	0.019	4 [4-4]	4 [4-4]	0.002	4 [4-4]	4 [4-4]	0.002	5 [4-5]	5 [4-5]	0.003
<b>Number of GP visits, median [Q25-Q75]</b>	11 [1-22]	16 [8-26]	0.216	9 [1-20]	13 [6-23]	0.147	2 [0-10]	5 [1-11]	0.088	1 [0-6]	3 [1-8]	0.106
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.029	0[0-0]	0[0-0]	0.027	0[0-0]	0[0-0]	0.008	0[0-0]	0[0-0]	0.035
<b>Comorbidities**, N(%)</b>												
Anxiety	1,966 (8%)	3,238 (12%)	0.130	2,817 (8%)	513 (11%)	0.102	6,406 (7%)	2,162 (9%)	0.087	9,287 (6%)	1,847 (8%)	0.077
Asthma	1,986 (8%)	2,668 (10%)	0.059	2,653 (8%)	447 (10%)	0.072	4,385 (5%)	1,250 (5%)	0.030	5,405 (4%)	968 (4%)	0.035
Chronic kidney disease	2,270 (9%)	2,507 (9%)	0.003	2,939 (9%)	367 (8%)	0.019	2,523 (3%)	415 (2%)	0.061	2,335 (2%)	221 (1%)	0.052
COPD	1,569 (7%)	1,976 (7%)	0.033	2,015 (6%)	312 (7%)	0.039	2,743 (3%)	529 (2%)	0.041	2,558 (2%)	294 (1%)	0.034
Dementia	1,152 (5%)	819 (3%)	0.090	1,297 (4%)	100 (2%)	0.094	1,147 (1%)	151 (1%)	0.059	1,067 (1%)	76 (0%)	0.052
Depressive disorder	2,066 (9%)	3,233 (12%)	0.114	3,189 (9%)	535 (12%)	0.079	7,286 (8%)	2,561 (11%)	0.108	10,034 (7%)	2,152 (10%)	0.105
Diabetes	3,971 (17%)	4,734 (18%)	0.030	4,818 (14%)	712 (16%)	0.043	6,065 (6%)	1,228 (5%)	0.051	6,594 (4%)	901 (4%)	0.021
GERD	2,533 (11%)	4,585 (17%)	0.192	3,364 (10%)	667 (15%)	0.147	6,287 (7%)	2,322 (10%)	0.115	7,455 (5%)	1,427 (6%)	0.059
Heart failure	8,724 (36%)	9,642 (36%)	0.007	9,570 (28%)	1,139 (25%)	0.068	9,982 (10%)	1,607 (7%)	0.132	9,182 (6%)	828 (4%)	0.115
Hypertension	16,651 (69%)	21,677 (81%)	0.272	20,654 (60%)	3,167 (69%)	0.191	29,974 (31%)	7,555 (31%)	0.007	27,992 (19%)	4,172 (19%)	0.006
Hypothyroidism	2,496 (10%)	3,094 (12%)	0.037	3,198 (9%)	515 (11%)	0.064	4,725 (5%)	1,309 (5%)	0.025	5,180 (4%)	799 (4%)	0.004
Malignant neoplastic disease	3,194 (13%)	5,044 (19%)	0.151	5,061 (15%)	782 (17%)	0.064	4,587 (5%)	1,011 (4%)	0.027	4,134 (3%)	523 (2%)	0.028
Myocardial infarction	548 (2%)	743 (3%)	0.031	696 (2%)	86 (2%)	0.011	840 (1%)	146 (1%)	0.031	777 (1%)	87 (0%)	0.020
Osteoporosis	1,273 (5%)	2,015 (8%)	0.091	1,446 (4%)	212 (5%)	0.021	1,545 (2%)	289 (1%)	0.034	1,408 (1%)	164 (1%)	0.024
Pneumonia	1,611 (7%)	2,046 (8%)	0.036	2,081 (6%)	291 (6%)	0.012	3,342 (3%)	898 (4%)	0.014	3,919 (3%)	683 (3%)	0.025

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Rheumatoid arthritis	493 (2%)	817 (3%)	0.063	891 (3%)	153 (3%)	0.044	1,022 (1%)	250 (1%)	0.002	987 (1%)	137 (1%)	0.007
Stroke	1,137 (5%)	1,011 (4%)	0.048	1,450 (4%)	169 (4%)	0.027	1,359 (1%)	232 (1%)	0.041	1,256 (1%)	133 (1%)	0.030
Venous thromboembolism	1,058 (4%)	1,207 (5%)	0.005	1,349 (4%)	149 (3%)	0.036	1,808 (2%)	387 (2%)	0.020	1,788 (1%)	235 (1%)	0.015

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease



**Table S20: Characteristics of weighted populations in CORIVA, database, stratified by staggered cohort and exposure status. Exposure is BNT162b2 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	9,118	9,118		3,465	3,465		14,414	14,414		13,759	13,759	
<b>Age, median [Q25-Q75]</b>	78 [73-83]	78 [73-83]	0.000	70 [65-75]	70 [65-75]	0.000	50 [45-59]	50 [45-59]	0.000	38 [30-50]	38 [30-50]	0.000
<b>Sex: Female, N(%)</b>	6,206 (68%)	6,206 (68%)	0.000	2,197 (63%)	2,197 (63%)	0.000	7,324 (51%)	7,324 (51%)	0.000	6,552 (48%)	6,552 (48%)	0.000
<b>Years of prior history*, median [Q25-Q75]</b>	4 [4-4]	4 [4-4]	0.000	4 [4-4]	4 [4-4]	0.000	4 [4-4]	4 [4-4]	0.000	5 [4-5]	5 [4-5]	0.000
<b>Number of GP visits, median [Q25-Q75]</b>	14 [4-25]	14 [7-24]	0.004	12 [3-23]	12 [5-22]	0.000	2 [0-10]	4 [1-10]	0.002	2 [0-8]	2 [0-8]	0.004
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.002	0[0-0]	0[0-0]	0.003	0[0-0]	0[0-0]	0.000	0[0-0]	0[0-0]	0.001
<b>Comorbidities**, N(%)</b>												
Anxiety	935 (10%)	956 (10%)	0.007	367 (11%)	373 (11%)	0.006	1,284 (9%)	1,278 (9%)	0.001	1,206 (9%)	1,170 (9%)	0.009
Asthma	891 (10%)	822 (9%)	0.026	340 (10%)	333 (10%)	0.007	747 (5%)	718 (5%)	0.009	644 (5%)	615 (4%)	0.010
Chronic kidney disease	939 (10%)	905 (10%)	0.012	302 (9%)	278 (8%)	0.025	225 (2%)	220 (2%)	0.003	144 (1%)	132 (1%)	0.008
COPD	666 (7%)	639 (7%)	0.011	238 (7%)	227 (7%)	0.013	333 (2%)	316 (2%)	0.008	223 (2%)	171 (1%)	0.032
Dementia	403 (4%)	377 (4%)	0.014	91 (3%)	81 (2%)	0.018	75 (1%)	72 (0%)	0.002	46 (0%)	38 (0%)	0.012
Depressive disorder	960 (11%)	966 (11%)	0.002	420 (12%)	411 (12%)	0.008	1,472 (10%)	1,485 (10%)	0.003	1,311 (10%)	1,367 (10%)	0.014
Diabetes	1,647 (18%)	1,624 (18%)	0.007	576 (17%)	531 (15%)	0.036	747 (5%)	731 (5%)	0.005	596 (4%)	565 (4%)	0.011
GERD	1,240 (14%)	1,268 (14%)	0.009	476 (14%)	473 (14%)	0.003	1,283 (9%)	1,322 (9%)	0.009	892 (6%)	900 (7%)	0.002
Heart failure	3,527 (39%)	3,470 (38%)	0.013	911 (26%)	877 (25%)	0.022	920 (6%)	899 (6%)	0.006	519 (4%)	484 (4%)	0.014
Hypertension	7,040 (77%)	7,234 (79%)	0.051	2,327 (67%)	2,384 (69%)	0.036	4,296 (30%)	4,340 (30%)	0.007	2,391 (17%)	2,479 (18%)	0.017
Hypothyroidism	1,080 (12%)	1,035 (11%)	0.015	376 (11%)	388 (11%)	0.011	770 (5%)	743 (5%)	0.009	500 (4%)	503 (4%)	0.001
Malignant neoplastic disease	1,485 (16%)	1,565 (17%)	0.023	579 (17%)	594 (17%)	0.012	582 (4%)	606 (4%)	0.008	324 (2%)	317 (2%)	0.003
Myocardial infarction	248 (3%)	234 (3%)	0.010	78 (2%)	68 (2%)	0.020	97 (1%)	88 (1%)	0.008	52 (0%)	52 (0%)	0.000
Osteoporosis	615 (7%)	632 (7%)	0.007	170 (5%)	167 (5%)	0.003	167 (1%)	161 (1%)	0.004	97 (1%)	107 (1%)	0.008
Pneumonia	698 (8%)	696 (8%)	0.001	222 (6%)	222 (6%)	0.001	543 (4%)	505 (4%)	0.014	418 (3%)	429 (3%)	0.005
Rheumatoid arthritis	240 (3%)	239 (3%)	0.001	128 (4%)	110 (3%)	0.028	167 (1%)	148 (1%)	0.013	97 (1%)	88 (1%)	0.008
Stroke	419 (5%)	417 (5%)	0.001	134 (4%)	131 (4%)	0.004	121 (1%)	130 (1%)	0.007	74 (1%)	82 (1%)	0.008

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Venous thromboembolism	438 (5%)	416 (5%)	0.011	153 (4%)	117 (3%)	0.053	220 (2%)	214 (1%)	0.003	159 (1%)	138 (1%)	0.015

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S21: Characteristics of unweighted populations in CORIVA, database, stratified by staggered cohort and exposure status. Exposure is BNT162b2 vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
<b>N (individuals)</b>	24,073	19,686		34,320	4,067		96,471	18,645		147,553	15,683	
<b>Age, median [Q25-Q75]</b>	79 [73-85]	79 [74-83]	0.040	72 [67-81]	70 [66-75]	0.174	54 [46-66]	51 [45-59]	0.257	42 [32-58]	38 [30-50]	0.216
<b>Sex: Female, N(%)</b>	16,582 (69%)	13,022 (66%)	0.058	21,867 (64%)	2,582 (63%)	0.005	49,023 (51%)	9,570 (51%)	0.010	72,056 (49%)	7,500 (48%)	0.020
<b>Years of prior history*, median [Q25-Q75]</b>	4 [4-4]	4 [4-4]	0.026	4 [4-4]	4 [4-4]	0.000	4 [4-4]	4 [4-4]	0.000	5 [4-5]	5 [4-5]	0.003
<b>Number of GP visits, median [Q25-Q75]</b>	11 [1-22]	17 [9-27]	0.252	9 [1-20]	13 [6-23]	0.150	2 [0-10]	5 [1-11]	0.077	1 [0-6]	4 [1-9]	0.116
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.021	0[0-0]	0[0-0]	0.038	0[0-0]	0[0-0]	0.020	0[0-0]	0[0-0]	0.037
<b>Comorbidities**, N(%)</b>												
Anxiety	1,966 (8%)	2,429 (12%)	0.138	2,816 (8%)	458 (11%)	0.103	6,416 (7%)	1,780 (10%)	0.106	9,291 (6%)	1,384 (9%)	0.096
Asthma	2,004 (8%)	2,029 (10%)	0.068	2,653 (8%)	404 (10%)	0.078	4,393 (5%)	969 (5%)	0.030	5,403 (4%)	730 (5%)	0.050
Chronic kidney disease	2,284 (9%)	2,041 (10%)	0.029	2,943 (9%)	326 (8%)	0.020	2,537 (3%)	263 (1%)	0.087	2,339 (2%)	146 (1%)	0.059
COPD	1,587 (7%)	1,501 (8%)	0.040	2,013 (6%)	274 (7%)	0.036	2,746 (3%)	388 (2%)	0.049	2,560 (2%)	193 (1%)	0.042
Dementia	1,162 (5%)	688 (3%)	0.067	1,301 (4%)	90 (2%)	0.093	1,136 (1%)	81 (0%)	0.083	1,062 (1%)	40 (0%)	0.067
Depressive disorder	2,070 (9%)	2,449 (12%)	0.125	3,188 (9%)	502 (12%)	0.098	7,303 (8%)	2,075 (11%)	0.122	10,051 (7%)	1,623 (10%)	0.127
Diabetes	3,964 (16%)	3,599 (18%)	0.048	4,814 (14%)	638 (16%)	0.047	6,071 (6%)	900 (5%)	0.064	6,594 (4%)	644 (4%)	0.018
GERD	2,532 (11%)	3,307 (17%)	0.184	3,364 (10%)	587 (14%)	0.142	6,296 (7%)	1,858 (10%)	0.125	7,446 (5%)	1,050 (7%)	0.070
Heart failure	8,750 (36%)	7,743 (39%)	0.062	9,570 (28%)	1,026 (25%)	0.060	10,000 (10%)	1,057 (6%)	0.174	9,185 (6%)	525 (3%)	0.135
Hypertension	16,718 (69%)	16,325 (83%)	0.321	20,659 (60%)	2,838 (70%)	0.202	29,995 (31%)	5,624 (30%)	0.020	27,979 (19%)	2,798 (18%)	0.029
Hypothyroidism	2,526 (10%)	2,352 (12%)	0.046	3,197 (9%)	464 (11%)	0.069	4,732 (5%)	988 (5%)	0.018	5,173 (4%)	576 (4%)	0.009
Malignant neoplastic disease	3,216 (13%)	3,873 (20%)	0.171	5,060 (15%)	700 (17%)	0.067	4,587 (5%)	764 (4%)	0.032	4,139 (3%)	352 (2%)	0.036
Myocardial infarction	539 (2%)	591 (3%)	0.048	696 (2%)	82 (2%)	0.001	850 (1%)	108 (1%)	0.035	779 (1%)	58 (0%)	0.024
Osteoporosis	1,283 (5%)	1,628 (8%)	0.117	1,447 (4%)	200 (5%)	0.034	1,550 (2%)	197 (1%)	0.048	1,403 (1%)	117 (1%)	0.022
Pneumonia	1,621 (7%)	1,624 (8%)	0.058	2,080 (6%)	264 (6%)	0.018	3,353 (3%)	672 (4%)	0.007	3,920 (3%)	499 (3%)	0.031

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD	Unvaccinated	Vaccinated	ASMD
Rheumatoid arthritis	491 (2%)	603 (3%)	0.065	892 (3%)	137 (3%)	0.045	1,025 (1%)	190 (1%)	0.004	990 (1%)	99 (1%)	0.005
Stroke	1,129 (5%)	834 (4%)	0.022	1,447 (4%)	152 (4%)	0.025	1,370 (1%)	155 (1%)	0.056	1,254 (1%)	90 (1%)	0.033
Venous thromboembolism	1,067 (4%)	972 (5%)	0.024	1,353 (4%)	140 (3%)	0.027	1,808 (2%)	266 (1%)	0.035	1,785 (1%)	156 (1%)	0.021

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S22: Characteristics of weighted populations in CPRD AURUM database, stratified by staggered cohort and vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD
<b>N (individuals)</b>	48,138	48,432		306,114	307,972		35,517	35,840		117,220	116,722	
<b>Age, median [Q25-Q75]</b>	80 [77-85]	80 [77-85]	0.003	66 [57-72]	66 [57-72]	0.003	54 [46-60]	54 [46-60]	0.000	42 [39-46]	42 [39-46]	0.004
<b>Sex: Female, N(%)</b>	27,920 (58%)	27,962 (58%)	0.005	167,623 (55%)	168,473 (55%)	0.001	21,299 (60%)	21,484 (60%)	0.000	54,350 (46%)	54,304 (47%)	0.003
<b>Years of prior history*, median [Q25-Q75]</b>	24 [9-36]	25 [11-36]	0.011	21 [9-32]	21 [9-32]	0.000	17 [8-27]	17 [7-27]	0.007	9 [4-17]	9 [4-17]	0.001
<b>Number of GP visits, median [Q25-Q75]</b>	12 [6-19]	12 [6-19]	0.003	10 [5-16]	10 [6-16]	0.001	8 [4-14]	8 [4-14]	0.012	4 [1-8]	4 [1-8]	0.008
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.006	0[0-0]	0[0-0]	0.003	0[0-0]	0[0-0]	0.013	0[0-0]	0[0-0]	0.003
<b>Comorbidities**, N(%)</b>												
Anxiety	7,101 (15%)	7,442 (15%)	0.017	62,230 (20%)	61,892 (20%)	0.006	7,419 (21%)	7,362 (21%)	0.009	19,086 (16%)	19,543 (17%)	0.012
Asthma	5,241 (11%)	5,396 (11%)	0.008	57,043 (19%)	56,551 (18%)	0.007	6,365 (18%)	6,097 (17%)	0.024	9,186 (8%)	9,059 (8%)	0.003
Chronic kidney disease	11,403 (24%)	11,809 (24%)	0.016	28,219 (9%)	29,790 (10%)	0.016	1,565 (4%)	1,700 (5%)	0.016	793 (1%)	897 (1%)	0.011
COPD	4,080 (8%)	4,014 (8%)	0.007	20,765 (7%)	20,456 (7%)	0.006	661 (2%)	669 (2%)	0.000	424 (0%)	471 (0%)	0.007
Dementia	3,667 (8%)	3,510 (7%)	0.014	2,733 (1%)	2,137 (1%)	0.022	419 (1%)	288 (1%)	0.038	109 (0%)	60 (0%)	0.016
Depressive disorder	5,666 (12%)	5,885 (12%)	0.012	56,642 (19%)	57,377 (19%)	0.003	6,508 (18%)	6,556 (18%)	0.001	16,027 (14%)	16,191 (14%)	0.006
Diabetes	8,849 (18%)	9,020 (19%)	0.006	50,019 (16%)	50,218 (16%)	0.001	2,560 (7%)	2,850 (8%)	0.028	3,231 (3%)	3,106 (3%)	0.006
GERD	2,637 (5%)	2,694 (6%)	0.004	16,666 (5%)	16,658 (5%)	0.002	1,479 (4%)	1,443 (4%)	0.007	3,087 (3%)	3,046 (3%)	0.001
Heart failure	2,843 (6%)	2,904 (6%)	0.004	6,822 (2%)	6,936 (2%)	0.002	443 (1%)	361 (1%)	0.023	204 (0%)	202 (0%)	0.000
Hypertension	25,422 (53%)	26,106 (54%)	0.022	103,545 (34%)	105,521 (34%)	0.009	6,295 (18%)	6,514 (18%)	0.012	6,692 (6%)	6,522 (6%)	0.005
Hypothyroidism	4,806 (10%)	4,978 (10%)	0.010	22,667 (7%)	23,290 (8%)	0.006	1,845 (5%)	1,886 (5%)	0.003	2,985 (3%)	3,025 (3%)	0.003
Malignant neoplastic disease	10,958 (23%)	11,284 (23%)	0.013	38,507 (13%)	40,499 (13%)	0.017	2,019 (6%)	2,152 (6%)	0.014	1,504 (1%)	1,576 (1%)	0.006
Myocardial infarction	2,481 (5%)	2,516 (5%)	0.002	11,083 (4%)	11,197 (4%)	0.001	425 (1%)	521 (1%)	0.022	256 (0%)	349 (0%)	0.016
Osteoporosis	5,117 (11%)	5,335 (11%)	0.012	11,759 (4%)	11,858 (4%)	0.000	719 (2%)	667 (2%)	0.012	344 (0%)	372 (0%)	0.004

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD
Pneumonia	2,576 (5%)	2,527 (5%)	0.006	9,543 (3%)	9,423 (3%)	0.003	808 (2%)	692 (2%)	0.024	979 (1%)	904 (1%)	0.007
Rheumatoid arthritis	935 (2%)	1,005 (2%)	0.010	6,476 (2%)	6,640 (2%)	0.003	284 (1%)	344 (1%)	0.017	216 (0%)	258 (0%)	0.008
Stroke	2,314 (5%)	2,418 (5%)	0.009	7,284 (2%)	7,949 (3%)	0.013	446 (1%)	414 (1%)	0.009	294 (0%)	336 (0%)	0.007
Venous thromboembolism	3,001 (6%)	3,101 (6%)	0.007	11,833 (4%)	12,315 (4%)	0.007	812 (2%)	853 (2%)	0.006	601 (1%)	765 (1%)	0.019

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S23: Characteristics of unweighted populations in CPRD AURUM database, stratified by staggered cohort and vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD
<b>N (individuals)</b>	219,804	332,790		969,262	594,262		1,473,602	54,102		542,670	1,335,671	
<b>Age, median [Q25-Q75]</b>	80 [77-85]	82 [79-86]	0.129	69 [63-73]	67 [56-73]	0.148	55 [51-60]	58 [50-82]	0.381	45 [42-48]	31 [25-37]	1.319
<b>Sex: Female, N(%)</b>	127,656 (58%)	186,481 (56%)	0.041	528,692 (55%)	324,259 (55%)	0.000	739,444 (50%)	32,310 (60%)	0.193	242,758 (45%)	625,195 (47%)	0.042
<b>Years of prior history*, median [Q25-Q75]</b>	24 [9-36]	26 [13-38]	0.059	21 [9-33]	21 [9-32]	0.028	17 [8-27]	19 [8-30]	0.116	10 [5-18]	7 [3-19]	0.146
<b>Number of GP visits, median [Q25-Q75]</b>	12 [6-19]	11 [6-18]	0.038	10 [6-17]	11 [6-17]	0.015	7 [3-12]	10 [5-17]	0.294	3 [1-8]	3 [1-7]	0.045
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.183	0[0-0]	0[0-0]	0.014	0[0-0]	0[0-0]	0.171	0[0-0]	0[0-0]	0.008
<b>Comorbidities**, N(%)</b>												
Anxiety	33,355 (15%)	49,410 (15%)	0.009	187,469 (19%)	122,087 (21%)	0.030	281,846 (19%)	10,441 (19%)	0.004	86,805 (16%)	218,144 (16%)	0.009
Asthma	24,009 (11%)	37,889 (11%)	0.015	159,162 (16%)	116,596 (20%)	0.083	200,995 (14%)	8,668 (16%)	0.067	41,393 (8%)	114,378 (9%)	0.034
Chronic kidney disease	51,053 (23%)	86,899 (26%)	0.067	97,339 (10%)	56,923 (10%)	0.016	24,198 (2%)	6,692 (12%)	0.430	2,879 (1%)	2,664 (0%)	0.055
COPD	19,105 (9%)	28,317 (9%)	0.007	67,700 (7%)	39,595 (7%)	0.013	13,621 (1%)	2,063 (4%)	0.191	1,510 (0%)	942 (0%)	0.050
Dementia	16,795 (8%)	16,138 (5%)	0.116	12,106 (1%)	3,720 (1%)	0.065	1,896 (0%)	1,323 (2%)	0.207	447 (0%)	119 (0%)	0.034
Depressive disorder	27,009 (12%)	37,831 (11%)	0.028	170,626 (18%)	112,753 (19%)	0.035	256,789 (17%)	9,046 (17%)	0.019	74,210 (14%)	155,037 (12%)	0.062
Diabetes	39,751 (18%)	61,929 (19%)	0.014	154,348 (16%)	98,676 (17%)	0.018	78,394 (5%)	5,817 (11%)	0.201	9,729 (2%)	12,040 (1%)	0.077
GERD	12,156 (6%)	20,204 (6%)	0.023	52,694 (5%)	32,288 (5%)	0.000	56,444 (4%)	2,506 (5%)	0.040	13,807 (3%)	21,599 (2%)	0.065
Heart failure	13,147 (6%)	20,430 (6%)	0.007	24,276 (3%)	13,120 (2%)	0.020	5,673 (0%)	1,529 (3%)	0.195	681 (0%)	448 (0%)	0.033
Hypertension	114,922 (52%)	186,367 (56%)	0.075	345,014 (36%)	200,762 (34%)	0.038	224,543 (15%)	15,536 (29%)	0.330	31,330 (6%)	19,649 (1%)	0.232
Hypothyroidism	21,855 (10%)	34,512 (10%)	0.014	73,992 (8%)	44,456 (7%)	0.006	64,026 (4%)	3,642 (7%)	0.104	13,920 (3%)	18,516 (1%)	0.085
Malignant neoplastic disease	49,023 (22%)	82,610 (25%)	0.059	131,135 (14%)	76,103 (13%)	0.021	55,601 (4%)	6,311 (12%)	0.299	7,505 (1%)	5,104 (0%)	0.107
Myocardial infarction	11,236 (5%)	18,289 (5%)	0.017	33,142 (3%)	23,019 (4%)	0.024	11,237 (1%)	1,464 (3%)	0.149	861 (0%)	715 (0%)	0.032

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD
Osteoporosis	22,986 (10%)	36,535 (11%)	0.017	42,319 (4%)	21,789 (4%)	0.036	12,455 (1%)	2,632 (5%)	0.243	1,380 (0%)	1,028 (0%)	0.044
Pneumonia	12,101 (6%)	16,297 (5%)	0.027	33,170 (3%)	17,567 (3%)	0.027	20,399 (1%)	1,658 (3%)	0.114	4,297 (1%)	7,793 (1%)	0.025
Rheumatoid arthritis	4,544 (2%)	6,693 (2%)	0.004	20,294 (2%)	12,878 (2%)	0.005	8,463 (1%)	667 (1%)	0.070	821 (0%)	891 (0%)	0.026
Stroke	10,876 (5%)	15,601 (5%)	0.012	24,851 (3%)	15,056 (3%)	0.002	9,547 (1%)	1,281 (2%)	0.141	1,153 (0%)	1,022 (0%)	0.036
Venous thromboembolism	13,782 (6%)	21,549 (6%)	0.008	39,415 (4%)	23,632 (4%)	0.005	24,312 (2%)	1,980 (4%)	0.125	1,936 (0%)	2,541 (0%)	0.032

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease



**Table S24: Characteristics of weighted populations in CPRD GOLD database, stratified by staggered cohort and vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD
<b>N (individuals)</b>	7,490	7,490		77,012	76,978		24,590	24,597		49,538	49,577	
<b>Age, median [Q25-Q75]</b>	82 [78-86]	80 [78-86]	0.000	70 [65-74]	70 [65-74]	0.004	54 [49-59]	54 [49-59]	0.009	42 [37-46]	42 [37-47]	0.003
<b>Sex: Female, N(%)</b>	4,266 (57%)	4,266 (57%)	0.000	41,394 (54%)	41,607 (54%)	0.006	13,052 (53%)	13,078 (53%)	0.002	22,308 (45%)	22,520 (45%)	0.008
<b>Years of prior history*, median [Q25-Q75]</b>	18 [12-21]	18 [11-21]	0.000	17 [12-20]	17 [12-20]	0.005	17 [12-20]	17 [12-20]	0.004	14 [6-18]	14 [6-18]	0.005
<b>Number of GP visits, median [Q25-Q75]</b>	14 [9-21]	14 [9-21]	0.007	10 [6-16]	10 [6-17]	0.012	6 [2-11]	6 [2-11]	0.009	2 [0-6]	2 [0-7]	0.008
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.004	0[0-0]	0[0-0]	0.002	0[0-0]	0[0-0]	0.011	0[0-0]	0[0-0]	0.002
<b>Comorbidities**, N(%)</b>												
Anxiety	1,008 (13%)	1,015 (14%)	0.002	12,765 (17%)	12,897 (17%)	0.005	5,218 (21%)	5,293 (22%)	0.007	8,501 (17%)	8,578 (17%)	0.004
Asthma	783 (10%)	774 (10%)	0.004	9,867 (13%)	10,028 (13%)	0.006	2,993 (12%)	2,826 (11%)	0.021	3,700 (7%)	3,568 (7%)	0.010
Chronic kidney disease	1,711 (23%)	1,694 (23%)	0.005	7,209 (9%)	7,045 (9%)	0.007	530 (2%)	411 (2%)	0.035	193 (0%)	202 (0%)	0.003
COPD	568 (8%)	583 (8%)	0.008	5,739 (7%)	5,725 (7%)	0.001	321 (1%)	274 (1%)	0.017	170 (0%)	165 (0%)	0.002
Dementia	543 (7%)	495 (7%)	0.025	726 (1%)	737 (1%)	0.001	55 (0%)	74 (0%)	0.015	28 (0%)	21 (0%)	0.006
Depressive disorder	733 (10%)	729 (10%)	0.002	11,461 (15%)	11,746 (15%)	0.011	4,478 (18%)	4,427 (18%)	0.005	7,038 (14%)	7,119 (14%)	0.004
Diabetes	1,114 (15%)	1,107 (15%)	0.003	10,260 (13%)	10,130 (13%)	0.005	1,051 (4%)	963 (4%)	0.018	768 (2%)	654 (1%)	0.019
GERD	451 (6%)	447 (6%)	0.002	3,691 (5%)	3,753 (5%)	0.004	763 (3%)	770 (3%)	0.001	975 (2%)	978 (2%)	0.000
Heart failure	395 (5%)	411 (5%)	0.009	1,763 (2%)	1,819 (2%)	0.005	125 (1%)	81 (0%)	0.028	50 (0%)	54 (0%)	0.002
Hypertension	2,761 (37%)	2,754 (37%)	0.002	21,627 (28%)	21,686 (28%)	0.002	3,184 (13%)	3,261 (13%)	0.009	1,842 (4%)	1,975 (4%)	0.014
Hypothyroidism	579 (8%)	566 (8%)	0.007	4,932 (6%)	4,869 (6%)	0.003	1,064 (4%)	1,065 (4%)	0.000	979 (2%)	1,028 (2%)	0.007
Malignant neoplastic disease	1,632 (22%)	1,744 (23%)	0.036	10,682 (14%)	9,986 (13%)	0.026	1,007 (4%)	1,089 (4%)	0.017	598 (1%)	660 (1%)	0.011
Myocardial infarction	330 (4%)	325 (4%)	0.004	2,919 (4%)	2,943 (4%)	0.002	239 (1%)	217 (1%)	0.010	90 (0%)	85 (0%)	0.002

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD
Osteoporosis	665 (9%)	638 (9%)	0.013	3,388 (4%)	3,496 (5%)	0.007	323 (1%)	314 (1%)	0.003	103 (0%)	92 (0%)	0.005
Pneumonia	286 (4%)	258 (3%)	0.020	1,807 (2%)	1,724 (2%)	0.007	263 (1%)	252 (1%)	0.005	271 (1%)	265 (1%)	0.002
Rheumatoid arthritis	111 (1%)	111 (1%)	0.001	1,437 (2%)	1,460 (2%)	0.002	123 (1%)	115 (0%)	0.005	58 (0%)	40 (0%)	0.011
Stroke	325 (4%)	321 (4%)	0.003	2,134 (3%)	2,072 (3%)	0.005	207 (1%)	148 (1%)	0.028	96 (0%)	91 (0%)	0.002
Venous thromboembolism	306 (4%)	341 (5%)	0.023	2,125 (3%)	2,153 (3%)	0.002	288 (1%)	285 (1%)	0.001	146 (0%)	198 (0%)	0.018

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S25: Characteristics of unweighted populations in CPRD GOLD database, stratified by staggered cohort and vaccine.**

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD
<b>N (individuals)</b>	82,406	32,755		302,999	180,670		423,876	36,748		147,744	365,096	
<b>Age, median [Q25-Q75]</b>	84 [82-88]	81 [79-86]	0.351	71 [66-76]	70 [66-74]	0.132	56 [52-61]	54 [50-60]	0.171	44 [41-48]	31 [24-37]	1.090
<b>Sex: Female, N(%)</b>	47,915 (58%)	18,415 (56%)	0.039	162,753 (54%)	97,747 (54%)	0.008	210,283 (50%)	19,649 (53%)	0.077	64,999 (44%)	167,510 (46%)	0.038
<b>Years of prior history*, median [Q25-Q75]</b>	17 [14-20]	18 [13-21]	0.001	17 [13-19]	17 [12-19]	0.014	17 [10-19]	18 [12-20]	0.107	14 [7-18]	15 [6-18]	0.017
<b>Number of GP visits, median [Q25-Q75]</b>	14 [9-21]	14 [9-21]	0.005	11 [7-18]	10 [6-16]	0.122	6 [2-12]	6 [2-11]	0.069	3 [0-7]	2 [0-6]	0.098
<b>Number of PCR tests, median [Q25-Q75]</b>	0[0-0]	0[0-0]	0.006	0[0-0]	0[0-0]	0.009	0[0-0]	0[0-0]	0.021	0[0-0]	0[0-0]	0.011
<b>Comorbidities**, N(%)</b>												
Anxiety	9,923 (12%)	4,336 (13%)	0.036	49,010 (16%)	28,697 (16%)	0.008	75,258 (18%)	8,004 (22%)	0.101	24,601 (17%)	59,094 (16%)	0.013
Asthma	8,491 (10%)	3,250 (10%)	0.013	39,988 (13%)	21,396 (12%)	0.041	48,034 (11%)	4,053 (11%)	0.010	10,517 (7%)	33,240 (9%)	0.073
Chronic kidney disease	21,564 (26%)	7,430 (23%)	0.081	34,168 (11%)	15,033 (8%)	0.100	7,553 (2%)	566 (2%)	0.019	739 (1%)	578 (0%)	0.060
COPD	6,837 (8%)	2,417 (7%)	0.034	27,472 (9%)	11,545 (6%)	0.100	6,334 (1%)	348 (1%)	0.050	640 (0%)	285 (0%)	0.070
Dementia	4,773 (6%)	1,895 (6%)	0.000	5,124 (2%)	1,375 (1%)	0.085	548 (0%)	87 (0%)	0.025	126 (0%)	29 (0%)	0.036
Depressive disorder	6,998 (8%)	3,310 (10%)	0.056	45,154 (15%)	26,294 (15%)	0.010	70,703 (17%)	6,569 (18%)	0.032	21,711 (15%)	39,181 (11%)	0.119
Diabetes	12,387 (15%)	4,882 (15%)	0.004	43,647 (14%)	22,552 (12%)	0.056	24,219 (6%)	1,191 (3%)	0.120	2,254 (2%)	2,507 (1%)	0.080
GERD	4,054 (5%)	2,012 (6%)	0.054	14,294 (5%)	8,525 (5%)	0.000	14,447 (3%)	1,093 (3%)	0.025	2,883 (2%)	5,213 (1%)	0.041
Heart failure	5,058 (6%)	1,782 (5%)	0.030	9,180 (3%)	3,669 (2%)	0.064	2,308 (1%)	100 (0%)	0.043	191 (0%)	98 (0%)	0.037
Hypertension	31,217 (38%)	11,995 (37%)	0.026	88,833 (29%)	49,763 (28%)	0.039	59,554 (14%)	4,679 (13%)	0.039	6,761 (5%)	4,776 (1%)	0.194
Hypothyroidism	7,042 (9%)	2,373 (7%)	0.048	20,521 (7%)	11,106 (6%)	0.025	17,382 (4%)	1,553 (4%)	0.006	3,245 (2%)	4,180 (1%)	0.082
Malignant neoplastic disease	18,950 (23%)	6,972 (21%)	0.041	42,687 (14%)	22,617 (13%)	0.046	17,903 (4%)	1,522 (4%)	0.004	2,192 (1%)	1,796 (0%)	0.100
Myocardial infarction	4,500 (5%)	1,603 (5%)	0.026	13,456 (4%)	6,621 (4%)	0.039	5,280 (1%)	271 (1%)	0.051	330 (0%)	154 (0%)	0.050

	Cohort 1			Cohort 2			Cohort 3			Cohort 4		
	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD	ChAdOx1	BNT162b2	ASMD
Osteoporosis	8,564 (10%)	2,770 (8%)	0.066	16,117 (5%)	7,531 (4%)	0.054	4,330 (1%)	458 (1%)	0.021	408 (0%)	205 (0%)	0.054
Pneumonia	3,231 (4%)	1,032 (3%)	0.042	8,604 (3%)	3,418 (2%)	0.062	4,527 (1%)	345 (1%)	0.013	921 (1%)	1,696 (0%)	0.022
Rheumatoid arthritis	1,257 (2%)	512 (2%)	0.003	5,999 (2%)	2,929 (2%)	0.027	2,405 (1%)	154 (0%)	0.021	191 (0%)	111 (0%)	0.035
Stroke	4,193 (5%)	1,490 (5%)	0.025	10,213 (3%)	4,632 (3%)	0.048	3,789 (1%)	199 (1%)	0.042	369 (0%)	225 (0%)	0.048
Venous thromboembolism	3,550 (4%)	1,389 (4%)	0.003	9,466 (3%)	4,490 (2%)	0.039	6,339 (1%)	370 (1%)	0.044	460 (0%)	496 (0%)	0.037

The 4 cohorts represent vaccine rollout periods. \*Calculated as the days of previous observation in the database before index date. \*\*Assessed anytime before index date. ASMD = Absolute standardized mean difference, GP = General practice, PCR = Polymerase chain reaction, COPD = Chronic obstructive pulmonary disease, GERD = Gastro-Esophageal reflux disease

**Table S26: Number of records (and risk per 10,000 individuals) for post COVID-19 cardiac and thromboembolic complications, across cohorts and databases, stratified by exposure status (any COVID-19 vaccine). Follow-up ends at first vaccine dose after index date.**

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
<b>Cohort 1</b>			<b>N = 346,674</b>	<b>N = 552,602</b>	<b>N = 23,982</b>	<b>N = 26,736</b>	<b>N = 169,100</b>	<b>N = 118,507</b>	<b>N = 223,962</b>	<b>N = 89,941</b>
0 to 30 days	VTE	VTE	93 (2.68)	45 (0.81)	77 (32.11)	6 (2.24)	8 (0.47)	< 5	74 (3.30)	< 5
		DVT	22 (0.63)	10 (0.18)	12 (5.00)	< 5	< 5	< 5	19 (0.85)	< 5
		PE	75 (2.16)	37 (0.67)	67 (27.94)	5 (1.87)	7 (0.41)	< 5	59 (2.63)	< 5
		ATE	22 (0.63)	28 (0.51)	110 (45.87)	6 (2.24)	6 (0.35)	< 5	77 (3.44)	6 (0.67)
		IS	8 (0.23)	< 5	64 (26.69)	< 5	< 5	< 5	45 (2.01)	< 5
		TIA	< 5	6 (0.11)	20 (8.34)	< 5	< 5	< 5	7 (0.31)	< 5
		MI	11 (0.32)	20 (0.36)	35 (14.59)	5 (1.87)	< 5	< 5	27 (1.21)	< 5
		HF	59 (1.70)	73 (1.32)	395 (164.71)	27 (10.10)	10 (0.59)	< 5	302 (13.48)	23 (2.56)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	7 (0.31)	< 5
		MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
31 to 90 days	VTE	VTE	19 (0.55)	20 (0.36)	37 (15.43)	< 5	< 5	< 5	16 (0.71)	< 5
		DVT	10 (0.29)	7 (0.13)	20 (8.34)	< 5	< 5	< 5	10 (0.45)	< 5
		PE	9 (0.26)	13 (0.24)	21 (8.76)	< 5	< 5	< 5	6 (0.27)	< 5
		ATE	5 (0.14)	16 (0.29)	33 (13.76)	< 5	< 5	< 5	41 (1.83)	5 (0.56)
		IS	< 5	< 5	19 (7.92)	< 5	< 5	< 5	20 (0.89)	< 5
		TIA	< 5	6 (0.11)	8 (3.34)	< 5	< 5	< 5	13 (0.58)	< 5
		MI	< 5	7 (0.13)	12 (5.00)	< 5	< 5	< 5	11 (0.49)	< 5
		HF	30 (0.87)	56 (1.01)	151 (62.96)	14 (5.24)	< 5	< 5	89 (3.97)	8 (0.89)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
91 to 180 days	VTE	VTE	10 (0.29)	9 (0.16)	21 (8.76)	5 (1.87)	< 5	< 5	20 (0.89)	< 5
		DVT	5 (0.14)	< 5	14 (5.84)	< 5	< 5	< 5	9 (0.40)	< 5
		PE	5 (0.14)	5 (0.09)	9 (3.75)	< 5	< 5	< 5	11 (0.49)	< 5
		ATE	11 (0.32)	14 (0.25)	31 (12.93)	< 5	< 5	< 5	30 (1.34)	< 5
		IS	< 5	< 5	16 (6.67)	< 5	< 5	< 5	16 (0.71)	< 5
		TIA	5 (0.14)	6 (0.11)	8 (3.34)	< 5	< 5	< 5	8 (0.36)	< 5
		MI	5 (0.14)	< 5	10 (4.17)	< 5	< 5	< 5	7 (0.31)	< 5
		HF	37 (1.07)	51 (0.92)	162 (67.55)	21 (7.85)	< 5	< 5	87 (3.88)	7 (0.78)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
	181 to 365 days	VTE	10 (0.29)	8 (0.14)	45 (18.76)	7 (2.62)	< 5	< 5	10 (0.45)	< 5
		DVT	5 (0.14)	< 5	16 (6.67)	< 5	< 5	< 5	6 (0.27)	< 5
		PE	5 (0.14)	< 5	34 (14.18)	< 5	< 5	< 5	< 5	< 5
		ATE	10 (0.29)	19 (0.34)	55 (22.93)	11 (4.11)	< 5	< 5	42 (1.88)	8 (0.89)
		IS	< 5	6 (0.11)	32 (13.34)	10 (3.74)	< 5	< 5	21 (0.94)	5 (0.56)
		TIA	6 (0.17)	< 5	16 (6.67)	< 5	< 5	< 5	10 (0.45)	< 5
		MI	< 5	10 (0.18)	14 (5.84)	< 5	< 5	< 5	11 (0.49)	< 5
		HF	40 (1.15)	53 (0.96)	268 (111.75)	48 (17.95)	< 5	6 (0.51)	86 (3.84)	20 (2.22)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
<b>Cohort 2</b>			<b>N = 1,975,726</b>	<b>N = 1,563,569</b>	<b>N = 34,317</b>	<b>N = 4,572</b>	<b>N = 583,399</b>	<b>N = 486,619</b>	<b>N = 433,151</b>	<b>N = 819,590</b>
	0 to 30 days	VTE	241 (1.22)	54 (0.35)	79 (23.02)	< 5	31 (0.53)	7 (0.14)	258 (5.96)	27 (0.33)
		DVT	41 (0.21)	19 (0.12)	12 (3.50)	< 5	8 (0.14)	< 5	63 (1.45)	9 (0.11)
		PE	204 (1.03)	38 (0.24)	69 (20.11)	< 5	24 (0.41)	6 (0.12)	213 (4.92)	20 (0.24)
		ATE	41 (0.21)	25 (0.16)	110 (32.05)	< 5	< 5	< 5	173 (3.99)	29 (0.35)
		IS	7 (0.04)	5 (0.03)	68 (19.82)	< 5	< 5	< 5	96 (2.22)	12 (0.15)
		TIA	8 (0.04)	< 5	18 (5.25)	< 5	< 5	< 5	17 (0.39)	6 (0.07)
		MI	26 (0.13)	17 (0.11)	35 (10.20)	< 5	< 5	< 5	64 (1.48)	11 (0.13)
		HF	45 (0.23)	47 (0.30)	364 (106.07)	< 5	5 (0.09)	< 5	378 (8.73)	76 (0.93)
		HS	6 (0.03)	< 5	< 5	< 5	< 5	< 5	18 (0.42)	< 5
		MP	12 (0.06)	< 5	< 5	< 5	< 5	< 5	14 (0.32)	< 5
	31 to 90 days	VTE	43 (0.22)	13 (0.08)	31 (9.03)	< 5	< 5	< 5	59 (1.36)	9 (0.11)
		DVT	24 (0.12)	6 (0.04)	16 (4.66)	< 5	< 5	< 5	32 (0.74)	5 (0.06)
		PE	23 (0.12)	8 (0.05)	18 (5.25)	< 5	< 5	< 5	33 (0.76)	< 5
		ATE	18 (0.09)	18 (0.12)	32 (9.32)	< 5	< 5	< 5	85 (1.96)	14 (0.17)
		IS	< 5	< 5	20 (5.83)	< 5	< 5	< 5	43 (0.99)	6 (0.07)
		TIA	< 5	7 (0.04)	< 5	< 5	< 5	< 5	23 (0.53)	5 (0.06)
		MI	13 (0.07)	10 (0.06)	13 (3.79)	< 5	< 5	< 5	26 (0.60)	< 5
		HF	27 (0.14)	30 (0.19)	149 (43.42)	< 5	< 5	< 5	138 (3.19)	29 (0.35)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	7 (0.16)	< 5
		MP	6 (0.03)	< 5	< 5	< 5	< 5	< 5	< 5	< 5
	91 to 180 days	VTE	28 (0.14)	15 (0.10)	26 (7.58)	< 5	6 (0.10)	< 5	58 (1.34)	6 (0.07)
		DVT	13 (0.07)	9 (0.06)	15 (4.37)	< 5	< 5	< 5	31 (0.72)	6 (0.07)
		PE	15 (0.08)	6 (0.04)	12 (3.50)	< 5	< 5	< 5	30 (0.69)	< 5

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP			
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated		
		ATE	17 (0.09)	15 (0.10)	32 (9.32)	< 5	< 5	< 5	91 (2.10)	19 (0.23)		
		IS	< 5	< 5	15 (4.37)	< 5	< 5	< 5	49 (1.13)	9 (0.11)		
		TIA	9 (0.05)	5 (0.03)	11 (3.21)	< 5	< 5	< 5	20 (0.46)	5 (0.06)		
		MI	9 (0.05)	10 (0.06)	8 (2.33)	< 5	< 5	< 5	25 (0.58)	6 (0.07)		
		HF	22 (0.11)	27 (0.17)	166 (48.37)	< 5	< 5	< 5	110 (2.54)	41 (0.50)		
		HS	< 5	< 5	< 5	< 5	< 5	< 5	7 (0.16)	< 5		
		MP	< 5	< 5	< 5	< 5	< 5	< 5	7 (0.16)	< 5		
	181 to 365 days	VTE	9 (0.05)	12 (0.08)	44 (12.82)	< 5	< 5	< 5	16 (0.37)	23 (0.28)		
		DVT	< 5	5 (0.03)	20 (5.83)	< 5	< 5	< 5	9 (0.21)	14 (0.17)		
		PE	5 (0.03)	7 (0.04)	27 (7.87)	< 5	< 5	< 5	8 (0.18)	10 (0.12)		
		ATE	12 (0.06)	16 (0.10)	53 (15.44)	< 5	< 5	< 5	63 (1.45)	33 (0.40)		
		IS	< 5	< 5	31 (9.03)	< 5	< 5	< 5	35 (0.81)	11 (0.13)		
		TIA	< 5	< 5	12 (3.50)	< 5	< 5	< 5	16 (0.37)	13 (0.16)		
		MI	8 (0.04)	10 (0.06)	15 (4.37)	< 5	< 5	< 5	14 (0.32)	10 (0.12)		
		HF	20 (0.10)	31 (0.20)	259 (75.47)	5 (10.94)	< 5	< 5	81 (1.87)	41 (0.50)		
		HS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	5 (0.06)		
		MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5		
		<b>Cohort 3</b>			<b>N = 1,510,401</b>	<b>N = 1,528,031</b>	<b>N = 96,423</b>	<b>N = 24,050</b>	<b>N = 417,996</b>	<b>N = 462,832</b>	<b>N = 869,497</b>	<b>N = 954,232</b>
		0 to 30 days	VTE	245 (1.62)	25 (0.16)	115 (11.93)	< 5	27 (0.65)	< 5	325 (3.74)	27 (0.28)	
DVT	45 (0.30)		< 5	22 (2.28)	< 5	6 (0.14)	< 5	90 (1.04)	7 (0.07)			
PE	209 (1.38)		22 (0.14)	96 (9.96)	< 5	22 (0.53)	< 5	262 (3.01)	22 (0.23)			
ATE	29 (0.19)		10 (0.07)	119 (12.34)	< 5	< 5	< 5	213 (2.45)	14 (0.15)			
IS	< 5		< 5	70 (7.26)	< 5	< 5	< 5	102 (1.17)	5 (0.05)			
TIA	5 (0.03)		< 5	19 (1.97)	< 5	< 5	< 5	20 (0.23)	< 5			
MI	20 (0.13)		8 (0.05)	40 (4.15)	< 5	< 5	< 5	97 (1.12)	7 (0.07)			
HF	31 (0.21)		18 (0.12)	380 (39.41)	< 5	< 5	< 5	364 (4.19)	23 (0.24)			
HS	< 5		< 5	< 5	< 5	< 5	< 5	20 (0.23)	< 5			
MP	9 (0.06)		< 5	6 (0.62)	< 5	< 5	< 5	19 (0.22)	< 5			
31 to 90 days	VTE	44 (0.29)	< 5	50 (5.19)	< 5	< 5	< 5	85 (0.98)	9 (0.09)			
	DVT	20 (0.13)	< 5	28 (2.90)	< 5	< 5	< 5	57 (0.66)	5 (0.05)			
	PE	27 (0.18)	< 5	26 (2.70)	< 5	< 5	< 5	38 (0.44)	< 5			
	ATE	11 (0.07)	7 (0.05)	48 (4.98)	< 5	< 5	< 5	109 (1.25)	10 (0.10)			
	IS	< 5	< 5	24 (2.49)	< 5	< 5	< 5	54 (0.62)	6 (0.06)			
	TIA	< 5	< 5	7 (0.73)	< 5	< 5	< 5	27 (0.31)	< 5			

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
	91 to 180 days	MI	9 (0.06)	< 5	20 (2.07)	< 5	< 5	< 5	36 (0.41)	< 5
		HF	15 (0.10)	8 (0.05)	180 (18.67)	< 5	< 5	< 5	137 (1.58)	13 (0.14)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	7 (0.08)	< 5
		MP	8 (0.05)	< 5	5 (0.52)	< 5	< 5	< 5	8 (0.09)	< 5
		VTE	24 (0.16)	8 (0.05)	43 (4.46)	< 5	< 5	< 5	64 (0.74)	8 (0.08)
		DVT	11 (0.07)	6 (0.04)	26 (2.70)	< 5	< 5	< 5	36 (0.41)	7 (0.07)
		PE	14 (0.09)	< 5	18 (1.87)	< 5	< 5	< 5	32 (0.37)	< 5
		ATE	< 5	7 (0.05)	44 (4.56)	< 5	< 5	< 5	113 (1.30)	20 (0.21)
		IS	< 5	< 5	21 (2.18)	< 5	< 5	< 5	57 (0.66)	12 (0.13)
		TIA	< 5	< 5	13 (1.35)	< 5	< 5	< 5	22 (0.25)	< 5
		MI	< 5	< 5	15 (1.56)	< 5	< 5	< 5	37 (0.43)	6 (0.06)
		HF	11 (0.07)	6 (0.04)	216 (22.40)	< 5	< 5	< 5	120 (1.38)	15 (0.16)
	HS	< 5	< 5	< 5	< 5	< 5	< 5	9 (0.10)	< 5	
	MP	< 5	< 5	< 5	< 5	< 5	< 5	8 (0.09)	< 5	
	181 to 365 days	VTE	< 5	9 (0.06)	72 (7.47)	< 5	< 5	< 5	34 (0.39)	5 (0.05)
	DVT	< 5	< 5	39 (4.04)	< 5	< 5	< 5	20 (0.23)	< 5	
	PE	< 5	6 (0.04)	37 (3.84)	< 5	< 5	< 5	16 (0.18)	< 5	
	ATE	< 5	< 5	80 (8.30)	< 5	< 5	< 5	51 (0.59)	18 (0.19)	
	IS	< 5	< 5	36 (3.73)	< 5	< 5	< 5	24 (0.28)	9 (0.09)	
	TIA	< 5	< 5	19 (1.97)	< 5	< 5	< 5	11 (0.13)	< 5	
	MI	< 5	< 5	32 (3.32)	< 5	< 5	< 5	17 (0.20)	7 (0.07)	
	HF	5 (0.03)	< 5	324 (33.60)	< 5	< 5	< 5	62 (0.71)	13 (0.14)	
	HS	< 5	< 5	7 (0.73)	< 5	< 5	< 5	< 5	< 5	
	MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	
<b>Cohort 4</b>			<b>N = 2,027,763</b>	<b>N = 2,085,598</b>	<b>N = 147,545</b>	<b>N = 22,245</b>	<b>N = 469,876</b>	<b>N = 550,437</b>	<b>N = 1,061,634</b>	<b>N = 880,950</b>
0 to 30 days	VTE	334 (1.65)	19 (0.09)	116 (7.86)	< 5	36 (0.77)	7 (0.13)	350 (3.30)	38 (0.43)	
	DVT	55 (0.27)	6 (0.03)	22 (1.49)	< 5	6 (0.13)	< 5	106 (1.00)	14 (0.16)	
	PE	291 (1.44)	13 (0.06)	97 (6.57)	< 5	31 (0.66)	7 (0.13)	272 (2.56)	25 (0.28)	
	ATE	26 (0.13)	5 (0.02)	116 (7.86)	< 5	< 5	< 5	231 (2.18)	35 (0.40)	
	IS	< 5	< 5	69 (4.68)	< 5	< 5	< 5	115 (1.08)	17 (0.19)	
	TIA	6 (0.03)	< 5	18 (1.22)	< 5	< 5	< 5	26 (0.24)	< 5	
	MI	16 (0.08)	< 5	38 (2.58)	< 5	< 5	< 5	96 (0.90)	15 (0.17)	
	HF	28 (0.14)	< 5	364 (24.67)	< 5	< 5	< 5	362 (3.41)	28 (0.32)	
	HS	< 5	< 5	5 (0.34)	< 5	< 5	< 5	23 (0.22)	< 5	



Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
31 to 90 days	MP	12 (0.06)	< 5	7 (0.47)	< 5	< 5	< 5	26 (0.24)	9 (0.10)	
	VTE	58 (0.29)	11 (0.05)	54 (3.66)	< 5	5 (0.11)	< 5	91 (0.86)	12 (0.14)	
	DVT	21 (0.10)	< 5	32 (2.17)	< 5	< 5	< 5	61 (0.57)	7 (0.08)	
	PE	40 (0.20)	7 (0.03)	26 (1.76)	< 5	< 5	< 5	40 (0.38)	6 (0.07)	
	ATE	12 (0.06)	< 5	46 (3.12)	< 5	< 5	< 5	118 (1.11)	18 (0.20)	
	IS	< 5	< 5	24 (1.63)	< 5	< 5	< 5	52 (0.49)	7 (0.08)	
	TIA	< 5	< 5	6 (0.41)	< 5	< 5	< 5	33 (0.31)	7 (0.08)	
	MI	9 (0.04)	< 5	19 (1.29)	< 5	< 5	< 5	41 (0.39)	< 5	
	HF	14 (0.07)	8 (0.04)	176 (11.93)	< 5	< 5	< 5	142 (1.34)	17 (0.19)	
	HS	< 5	< 5	< 5	< 5	< 5	< 5	8 (0.08)	< 5	
	MP	7 (0.03)	< 5	5 (0.34)	< 5	< 5	< 5	10 (0.09)	< 5	
91 to 180 days	VTE	26 (0.13)	9 (0.04)	49 (3.32)	< 5	< 5	< 5	71 (0.67)	11 (0.12)	
	DVT	10 (0.05)	7 (0.03)	31 (2.10)	< 5	< 5	< 5	42 (0.40)	6 (0.07)	
	PE	17 (0.08)	< 5	19 (1.29)	< 5	< 5	< 5	32 (0.30)	6 (0.07)	
	ATE	< 5	5 (0.02)	41 (2.78)	< 5	< 5	< 5	128 (1.21)	21 (0.24)	
	IS	< 5	< 5	19 (1.29)	< 5	< 5	< 5	65 (0.61)	11 (0.12)	
	TIA	< 5	< 5	12 (0.81)	< 5	< 5	< 5	29 (0.27)	< 5	
	MI	< 5	< 5	14 (0.95)	< 5	< 5	< 5	37 (0.35)	7 (0.08)	
	HF	10 (0.05)	< 5	208 (14.10)	< 5	< 5	< 5	139 (1.31)	19 (0.22)	
	HS	< 5	< 5	< 5	< 5	< 5	< 5	14 (0.13)	< 5	
	MP	< 5	< 5	5 (0.34)	< 5	< 5	< 5	11 (0.10)	< 5	
	181 to 365 days	VTE	< 5	< 5	77 (5.22)	< 5	< 5	< 5	46 (0.43)	9 (0.10)
DVT		< 5	< 5	46 (3.12)	< 5	< 5	< 5	33 (0.31)	5 (0.06)	
PE		< 5	< 5	35 (2.37)	< 5	< 5	< 5	14 (0.13)	< 5	
ATE		< 5	< 5	73 (4.95)	< 5	< 5	< 5	54 (0.51)	22 (0.25)	
IS		< 5	< 5	33 (2.24)	< 5	< 5	< 5	27 (0.25)	15 (0.17)	
TIA		< 5	< 5	19 (1.29)	< 5	< 5	< 5	12 (0.11)	< 5	
MI		< 5	< 5	27 (1.83)	< 5	< 5	< 5	16 (0.15)	7 (0.08)	
HF		< 5	< 5	301 (20.40)	< 5	< 5	< 5	57 (0.54)	11 (0.12)	
HS		< 5	< 5	8 (0.54)	< 5	< 5	< 5	< 5	< 5	
MP		< 5	< 5	5 (0.34)	< 5	< 5	< 5	7 (0.07)	< 5	

VTE = Venous thromboembolism (DVT + PE), DVT = Deep vein thrombosis, PE = Pulmonary embolism, ATE = Arterial thrombosis/thromboembolism (IS + TIA + MI), IS = Ischemic stroke, TIA = Transient ischemic attack, MI = Myocardial infarction, HF = Heart failure, HS = Hemorrhagic stroke, MP = Myocarditis or Pericarditis

**Table S27: Number of records (and risk per 10,000 individuals) for post COVID-19 cardiac and thromboembolic complications, across cohorts and databases, stratified by exposure status (any COVID-19 vaccine). Only first outcome after COVID-19 captured.**

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
<b>Cohort 1</b>			<b>N = 346,674</b>	<b>N = 552,602</b>	<b>N = 23,982</b>	<b>N = 26,736</b>	<b>N = 169,100</b>	<b>N = 118,507</b>	<b>N = 223,962</b>	<b>N = 89,941</b>
0 to 30 days	VTE	93 (2.68)	117 (2.12)	77 (32.11)	45 (16.83)	8 (0.47)	8 (0.68)	74 (3.30)	96 (10.67)	
	DVT	22 (0.63)	27 (0.49)	12 (5.00)	14 (5.24)	< 5	< 5	19 (0.85)	29 (3.22)	
	PE	75 (2.16)	95 (1.72)	67 (27.94)	33 (12.34)	7 (0.41)	7 (0.59)	59 (2.63)	77 (8.56)	
	ATE	22 (0.63)	70 (1.27)	110 (45.87)	81 (30.30)	6 (0.35)	7 (0.59)	77 (3.44)	208 (23.13)	
	IS	8 (0.23)	5 (0.09)	64 (26.69)	37 (13.84)	< 5	< 5	45 (2.01)	116 (12.90)	
	TIA	< 5	18 (0.33)	20 (8.34)	18 (6.73)	< 5	< 5	7 (0.31)	41 (4.56)	
	MI	11 (0.32)	46 (0.83)	35 (14.59)	35 (13.09)	< 5	5 (0.42)	27 (1.21)	63 (7.00)	
	HF	59 (1.70)	198 (3.58)	395 (164.71)	299 (111.83)	10 (0.59)	9 (0.76)	302 (13.48)	640 (71.16)	
	HS	< 5	7 (0.13)	< 5	< 5	< 5	< 5	7 (0.31)	14 (1.56)	
	MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	
31 to 90 days	VTE	19 (0.55)	39 (0.71)	35 (14.59)	29 (10.85)	< 5	< 5	15 (0.67)	45 (5.00)	
	DVT	10 (0.29)	15 (0.27)	19 (7.92)	15 (5.61)	< 5	< 5	9 (0.40)	29 (3.22)	
	PE	9 (0.26)	25 (0.45)	20 (8.34)	14 (5.24)	< 5	< 5	6 (0.27)	20 (2.22)	
	ATE	5 (0.14)	43 (0.78)	29 (12.09)	44 (16.46)	< 5	< 5	39 (1.74)	127 (14.12)	
	IS	< 5	< 5	16 (6.67)	19 (7.11)	< 5	< 5	20 (0.89)	70 (7.78)	
	TIA	< 5	19 (0.34)	8 (3.34)	17 (6.36)	< 5	< 5	13 (0.58)	32 (3.56)	
	MI	< 5	20 (0.36)	10 (4.17)	11 (4.11)	< 5	< 5	9 (0.40)	29 (3.22)	
	HF	30 (0.87)	109 (1.97)	134 (55.88)	162 (60.59)	< 5	8 (0.68)	85 (3.80)	290 (32.24)	
	HS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	12 (1.33)	
	MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	
91 to 180 days	VTE	10 (0.29)	18 (0.33)	16 (6.67)	29 (10.85)	< 5	< 5	18 (0.80)	35 (3.89)	
	DVT	5 (0.14)	8 (0.14)	9 (3.75)	16 (5.98)	< 5	< 5	7 (0.31)	19 (2.11)	
	PE	5 (0.14)	10 (0.18)	9 (3.75)	15 (5.61)	< 5	< 5	11 (0.49)	18 (2.00)	
	ATE	11 (0.32)	28 (0.51)	28 (11.68)	45 (16.83)	< 5	6 (0.51)	25 (1.12)	104 (11.56)	
	IS	< 5	8 (0.14)	13 (5.42)	19 (7.11)	< 5	< 5	13 (0.58)	57 (6.34)	
	TIA	5 (0.14)	12 (0.22)	8 (3.34)	15 (5.61)	< 5	< 5	7 (0.31)	34 (3.78)	
	MI	5 (0.14)	8 (0.14)	9 (3.75)	16 (5.98)	< 5	5 (0.42)	6 (0.27)	23 (2.56)	
	HF	35 (1.01)	89 (1.61)	143 (59.63)	203 (75.93)	< 5	5 (0.42)	81 (3.62)	228 (25.35)	
	HS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	
	MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
	181 to 365 days	VTE	9 (0.26)	11 (0.20)	29 (12.09)	27 (10.10)	< 5	< 5	5 (0.22)	11 (1.22)
		DVT	< 5	6 (0.11)	10 (4.17)	17 (6.36)	< 5	< 5	< 5	7 (0.78)
		PE	5 (0.14)	5 (0.09)	24 (10.01)	11 (4.11)	< 5	< 5	< 5	< 5
		ATE	10 (0.29)	23 (0.42)	45 (18.76)	74 (27.68)	< 5	< 5	35 (1.56)	39 (4.34)
		IS	< 5	6 (0.11)	26 (10.84)	34 (12.72)	< 5	< 5	18 (0.80)	24 (2.67)
		TIA	6 (0.17)	7 (0.13)	15 (6.25)	29 (10.85)	< 5	< 5	9 (0.40)	9 (1.00)
		MI	< 5	11 (0.20)	10 (4.17)	17 (6.36)	< 5	< 5	8 (0.36)	7 (0.78)
		HF	36 (1.04)	53 (0.96)	213 (88.82)	292 (109.22)	< 5	6 (0.51)	75 (3.35)	117 (13.01)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	7 (0.78)
		MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
<b>Cohort 2</b>			<b>N = 1,975,726</b>	<b>N = 1,563,569</b>	<b>N = 34,317</b>	<b>N = 4,572</b>	<b>N = 583,399</b>	<b>N = 486,619</b>	<b>N = 433,151</b>	<b>N = 819,590</b>
	0 to 30 days	VTE	241 (1.22)	220 (1.41)	79 (23.02)	7 (15.31)	31 (0.53)	24 (0.49)	258 (5.96)	400 (4.88)
		DVT	41 (0.21)	65 (0.42)	12 (3.50)	< 5	8 (0.14)	5 (0.10)	63 (1.45)	165 (2.01)
		PE	204 (1.03)	165 (1.06)	69 (20.11)	5 (10.94)	24 (0.41)	19 (0.39)	213 (4.92)	269 (3.28)
		ATE	41 (0.21)	104 (0.67)	110 (32.05)	5 (10.94)	< 5	6 (0.12)	173 (3.99)	669 (8.16)
		IS	7 (0.04)	14 (0.09)	68 (19.82)	< 5	< 5	< 5	96 (2.22)	346 (4.22)
		TIA	8 (0.04)	24 (0.15)	18 (5.25)	< 5	< 5	< 5	17 (0.39)	122 (1.49)
		MI	26 (0.13)	68 (0.43)	35 (10.20)	< 5	< 5	6 (0.12)	64 (1.48)	239 (2.92)
		HF	45 (0.23)	146 (0.93)	364 (106.07)	23 (50.31)	5 (0.09)	13 (0.27)	378 (8.73)	1,331 (16.24)
		HS	6 (0.03)	5 (0.03)	< 5	< 5	< 5	< 5	18 (0.42)	77 (0.94)
		MP	12 (0.06)	7 (0.04)	< 5	< 5	< 5	< 5	14 (0.32)	37 (0.45)
	31 to 90 days	VTE	41 (0.21)	75 (0.48)	28 (8.16)	5 (10.94)	< 5	9 (0.18)	56 (1.29)	187 (2.28)
		DVT	23 (0.12)	32 (0.20)	15 (4.37)	5 (10.94)	< 5	5 (0.10)	30 (0.69)	119 (1.45)
		PE	22 (0.11)	45 (0.29)	16 (4.66)	< 5	< 5	< 5	31 (0.72)	87 (1.06)
		ATE	18 (0.09)	92 (0.59)	29 (8.45)	< 5	< 5	9 (0.18)	84 (1.94)	437 (5.33)
		IS	< 5	11 (0.07)	18 (5.25)	< 5	< 5	< 5	43 (0.99)	231 (2.82)
		TIA	< 5	33 (0.21)	< 5	< 5	< 5	6 (0.12)	23 (0.53)	115 (1.40)
		MI	13 (0.07)	50 (0.32)	11 (3.21)	< 5	< 5	< 5	25 (0.58)	113 (1.38)
		HF	27 (0.14)	99 (0.63)	137 (39.92)	19 (41.56)	< 5	7 (0.14)	132 (3.05)	622 (7.59)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	7 (0.16)	27 (0.33)
		MP	6 (0.03)	< 5	< 5	< 5	< 5	< 5	< 5	8 (0.10)
	91 to 180 days	VTE	25 (0.13)	37 (0.24)	21 (6.12)	6 (13.12)	6 (0.10)	< 5	53 (1.22)	109 (1.33)
		DVT	12 (0.06)	21 (0.13)	10 (2.91)	< 5	< 5	< 5	29 (0.67)	71 (0.87)
		PE	13 (0.07)	19 (0.12)	12 (3.50)	< 5	< 5	< 5	27 (0.62)	46 (0.56)

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP			
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated		
		ATE	15 (0.08)	43 (0.28)	31 (9.03)	< 5	< 5	< 5	81 (1.87)	394 (4.81)		
		IS	< 5	< 5	14 (4.08)	< 5	< 5	< 5	43 (0.99)	202 (2.46)		
		TIA	8 (0.04)	18 (0.12)	11 (3.21)	< 5	< 5	< 5	19 (0.44)	109 (1.33)		
		MI	8 (0.04)	25 (0.16)	8 (2.33)	< 5	< 5	< 5	22 (0.51)	104 (1.27)		
		HF	22 (0.11)	65 (0.42)	149 (43.42)	20 (43.74)	< 5	< 5	100 (2.31)	534 (6.52)		
		HS	< 5	< 5	< 5	< 5	< 5	< 5	7 (0.16)	35 (0.43)		
		MP	< 5	< 5	< 5	< 5	< 5	< 5	7 (0.16)	9 (0.11)		
	181 to 365 days	VTE	8 (0.04)	12 (0.08)	30 (8.74)	5 (10.94)	< 5	< 5	14 (0.32)	52 (0.63)		
		DVT	< 5	5 (0.03)	15 (4.37)	< 5	< 5	< 5	8 (0.18)	36 (0.44)		
		PE	< 5	8 (0.05)	18 (5.25)	< 5	< 5	< 5	7 (0.16)	19 (0.23)		
		ATE	10 (0.05)	17 (0.11)	44 (12.82)	< 5	< 5	< 5	53 (1.22)	151 (1.84)		
		IS	< 5	< 5	25 (7.29)	< 5	< 5	< 5	30 (0.69)	71 (0.87)		
		TIA	< 5	5 (0.03)	12 (3.50)	< 5	< 5	< 5	14 (0.32)	46 (0.56)		
		MI	6 (0.03)	10 (0.06)	11 (3.21)	< 5	< 5	< 5	11 (0.25)	45 (0.55)		
		HF	19 (0.10)	34 (0.22)	210 (61.19)	29 (63.43)	< 5	< 5	72 (1.66)	209 (2.55)		
		HS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	10 (0.12)		
		MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5		
		Cohort 3			<b>N = 1,510,401</b>	<b>N = 1,528,031</b>	<b>N = 96,423</b>	<b>N = 24,050</b>	<b>N = 417,996</b>	<b>N = 462,832</b>	<b>N = 869,497</b>	<b>N = 954,232</b>
			0 to 30 days	VTE	245 (1.62)	142 (0.93)	115 (11.93)	9 (3.74)	27 (0.65)	17 (0.37)	325 (3.74)	180 (1.89)
DVT	45 (0.30)			41 (0.27)	22 (2.28)	7 (2.91)	6 (0.14)	< 5	90 (1.04)	78 (0.82)		
PE	209 (1.38)			105 (0.69)	96 (9.96)	< 5	22 (0.53)	13 (0.28)	262 (3.01)	118 (1.24)		
ATE	29 (0.19)			49 (0.32)	119 (12.34)	12 (4.99)	< 5	12 (0.26)	213 (2.45)	275 (2.88)		
IS	< 5			5 (0.03)	70 (7.26)	9 (3.74)	< 5	< 5	102 (1.17)	130 (1.36)		
TIA	5 (0.03)			17 (0.11)	19 (1.97)	< 5	< 5	< 5	20 (0.23)	53 (0.56)		
MI	20 (0.13)			27 (0.18)	40 (4.15)	< 5	< 5	9 (0.19)	97 (1.12)	113 (1.18)		
HF	31 (0.21)			38 (0.25)	380 (39.41)	23 (9.56)	< 5	< 5	364 (4.19)	256 (2.68)		
HS	< 5			< 5	< 5	< 5	< 5	< 5	20 (0.23)	35 (0.37)		
MP	9 (0.06)			6 (0.04)	6 (0.62)	< 5	< 5	< 5	19 (0.22)	20 (0.21)		
31 to 90 days	VTE		41 (0.27)	46 (0.30)	45 (4.67)	10 (4.16)	< 5	6 (0.13)	81 (0.93)	90 (0.94)		
	DVT		19 (0.13)	27 (0.18)	25 (2.59)	7 (2.91)	< 5	< 5	54 (0.62)	60 (0.63)		
	PE		25 (0.17)	19 (0.12)	23 (2.39)	< 5	< 5	< 5	36 (0.41)	37 (0.39)		
	ATE		11 (0.07)	33 (0.22)	45 (4.67)	8 (3.33)	< 5	8 (0.17)	108 (1.24)	207 (2.17)		
	IS		< 5	< 5	22 (2.28)	< 5	< 5	< 5	54 (0.62)	87 (0.91)		
			TIA	< 5	14 (0.09)	7 (0.73)	< 5	< 5	27 (0.31)	35 (0.37)		

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
	91 to 180 days	MI	9 (0.06)	16 (0.10)	18 (1.87)	< 5	< 5	5 (0.11)	35 (0.40)	93 (0.97)
		HF	15 (0.10)	26 (0.17)	166 (17.22)	25 (10.40)	< 5	< 5	130 (1.50)	154 (1.61)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	7 (0.08)	19 (0.20)
		MP	8 (0.05)	8 (0.05)	< 5	< 5	< 5	< 5	8 (0.09)	11 (0.12)
		VTE	23 (0.15)	25 (0.16)	34 (3.53)	11 (4.57)	< 5	< 5	57 (0.66)	92 (0.96)
		DVT	10 (0.07)	15 (0.10)	20 (2.07)	7 (2.91)	< 5	< 5	33 (0.38)	61 (0.64)
		PE	14 (0.09)	13 (0.09)	15 (1.56)	< 5	< 5	< 5	28 (0.32)	34 (0.36)
		ATE	< 5	28 (0.18)	40 (4.15)	8 (3.33)	< 5	< 5	102 (1.17)	199 (2.09)
		IS	< 5	< 5	20 (2.07)	< 5	< 5	< 5	49 (0.56)	92 (0.96)
		TIA	< 5	9 (0.06)	13 (1.35)	< 5	< 5	< 5	20 (0.23)	47 (0.49)
		MI	< 5	18 (0.12)	13 (1.35)	< 5	< 5	< 5	35 (0.40)	69 (0.72)
		HF	11 (0.07)	12 (0.08)	194 (20.12)	27 (11.23)	< 5	< 5	110 (1.27)	133 (1.39)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	9 (0.10)	13 (0.14)
		MP	< 5	< 5	< 5	< 5	< 5	< 5	8 (0.09)	14 (0.15)
	181 to 365 days	VTE	< 5	9 (0.06)	50 (5.19)	16 (6.65)	< 5	< 5	31 (0.36)	19 (0.20)
	DVT	< 5	< 5	29 (3.01)	13 (5.41)	< 5	< 5	18 (0.21)	14 (0.15)	
	PE	< 5	6 (0.04)	24 (2.49)	< 5	< 5	< 5	15 (0.17)	6 (0.06)	
	ATE	< 5	< 5	66 (6.84)	7 (2.91)	< 5	< 5	42 (0.48)	58 (0.61)	
	IS	< 5	< 5	30 (3.11)	< 5	< 5	< 5	19 (0.22)	22 (0.23)	
	TIA	< 5	< 5	17 (1.76)	< 5	< 5	< 5	10 (0.12)	7 (0.07)	
	MI	< 5	< 5	24 (2.49)	< 5	< 5	< 5	14 (0.16)	32 (0.34)	
	HF	5 (0.03)	< 5	262 (27.17)	31 (12.89)	< 5	< 5	54 (0.62)	36 (0.38)	
	HS	< 5	< 5	7 (0.73)	< 5	< 5	< 5	< 5	< 5	
	MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	
<b>Cohort 4</b>			<b>N = 2,027,763</b>	<b>N = 2,085,598</b>	<b>N = 147,545</b>	<b>N = 22,245</b>	<b>N = 469,876</b>	<b>N = 550,437</b>	<b>N = 1,061,634</b>	<b>N = 880,950</b>
0 to 30 days	VTE	334 (1.65)	50 (0.24)	116 (7.86)	< 5	36 (0.77)	11 (0.20)	350 (3.30)	98 (1.11)	
	DVT	55 (0.27)	17 (0.08)	22 (1.49)	< 5	6 (0.13)	< 5	106 (1.00)	48 (0.54)	
	PE	291 (1.44)	34 (0.16)	97 (6.57)	< 5	31 (0.66)	8 (0.15)	272 (2.56)	55 (0.62)	
	ATE	26 (0.13)	8 (0.04)	116 (7.86)	10 (4.50)	< 5	< 5	231 (2.18)	95 (1.08)	
	IS	< 5	< 5	69 (4.68)	< 5	< 5	< 5	115 (1.08)	47 (0.53)	
	TIA	6 (0.03)	< 5	18 (1.22)	< 5	< 5	< 5	26 (0.24)	12 (0.14)	
	MI	16 (0.08)	< 5	38 (2.58)	< 5	< 5	< 5	96 (0.90)	39 (0.44)	
	HF	28 (0.14)	< 5	364 (24.67)	17 (7.64)	< 5	< 5	362 (3.41)	75 (0.85)	
	HS	< 5	< 5	5 (0.34)	< 5	< 5	< 5	23 (0.22)	13 (0.15)	

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
31 to 90 days		MP	12 (0.06)	8 (0.04)	7 (0.47)	< 5	< 5	< 5	26 (0.24)	17 (0.19)
		VTE	55 (0.27)	22 (0.11)	49 (3.32)	< 5	5 (0.11)	< 5	86 (0.81)	48 (0.54)
		DVT	20 (0.10)	12 (0.06)	29 (1.97)	< 5	< 5	< 5	57 (0.54)	32 (0.36)
		PE	38 (0.19)	10 (0.05)	23 (1.56)	< 5	< 5	< 5	38 (0.36)	17 (0.19)
		ATE	12 (0.06)	9 (0.04)	43 (2.91)	5 (2.25)	< 5	< 5	117 (1.10)	75 (0.85)
		IS	< 5	< 5	22 (1.49)	< 5	< 5	< 5	52 (0.49)	30 (0.34)
		TIA	< 5	< 5	6 (0.41)	< 5	< 5	< 5	33 (0.31)	23 (0.26)
		MI	9 (0.04)	7 (0.03)	17 (1.15)	< 5	< 5	< 5	40 (0.38)	25 (0.28)
		HF	14 (0.07)	9 (0.04)	162 (10.98)	13 (5.84)	< 5	< 5	135 (1.27)	47 (0.53)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	8 (0.08)	5 (0.06)
91 to 180 days		MP	7 (0.03)	< 5	< 5	< 5	< 5	< 5	10 (0.09)	11 (0.12)
		VTE	25 (0.12)	9 (0.04)	40 (2.71)	< 5	< 5	< 5	65 (0.61)	52 (0.59)
		DVT	9 (0.04)	7 (0.03)	25 (1.69)	< 5	< 5	< 5	39 (0.37)	33 (0.37)
		PE	17 (0.08)	< 5	16 (1.08)	< 5	< 5	< 5	29 (0.27)	22 (0.25)
		ATE	< 5	6 (0.03)	38 (2.58)	6 (2.70)	< 5	< 5	116 (1.09)	86 (0.98)
		IS	< 5	< 5	18 (1.22)	< 5	< 5	< 5	57 (0.54)	42 (0.48)
		TIA	< 5	< 5	12 (0.81)	< 5	< 5	< 5	26 (0.24)	17 (0.19)
		MI	< 5	< 5	12 (0.81)	< 5	< 5	< 5	35 (0.33)	27 (0.31)
		HF	10 (0.05)	< 5	187 (12.67)	18 (8.09)	< 5	< 5	127 (1.20)	54 (0.61)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	13 (0.12)	6 (0.07)
181 to 365 days		MP	< 5	< 5	< 5	< 5	< 5	< 5	11 (0.10)	6 (0.07)
		VTE	< 5	< 5	53 (3.59)	< 5	< 5	< 5	42 (0.40)	8 (0.09)
		DVT	< 5	< 5	33 (2.24)	< 5	< 5	< 5	30 (0.28)	6 (0.07)
		PE	< 5	< 5	23 (1.56)	< 5	< 5	< 5	13 (0.12)	< 5
		ATE	< 5	< 5	64 (4.34)	9 (4.05)	< 5	< 5	42 (0.40)	16 (0.18)
		IS	< 5	< 5	29 (1.97)	5 (2.25)	< 5	< 5	20 (0.19)	11 (0.12)
		TIA	< 5	< 5	19 (1.29)	< 5	< 5	< 5	10 (0.09)	< 5
		MI	< 5	< 5	21 (1.42)	< 5	< 5	< 5	13 (0.12)	5 (0.06)
		HF	< 5	< 5	243 (16.47)	12 (5.39)	< 5	< 5	47 (0.44)	11 (0.12)
		HS	< 5	< 5	8 (0.54)	< 5	< 5	< 5	< 5	< 5
	MP	< 5	< 5	< 5	< 5	< 5	< 5	7 (0.07)	< 5	

VTE = Venous thromboembolism (DVT + PE), DVT = Deep vein thrombosis, PE = Pulmonary embolism, ATE = Arterial thrombosis/thromboembolism (IS + TIA + MI), IS = Ischemic stroke, TIA = Transient ischemic attack, MI = Myocardial infarction, HF = Heart failure, HS = Hemorrhagic stroke, MP = Myocarditis or Pericarditis

**Table S28: Number of records (and risk per 10,000 individuals) for post COVID-19 cardiac and thromboembolic complications, across cohorts and databases, stratified by exposure status (ChAdOx1 vaccine).**

Cohort	Time window	Outcome	AURUM		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
Cohort 1			<b>N = 344,687</b>	<b>N = 219,804</b>	<b>N = 168,972</b>	<b>N = 82,406</b>		
	0 to 30 days	VTE	77 (2.23)	41 (1.87)	7 (0.41)	< 5		
		DVT	16 (0.46)	12 (0.55)	< 5	< 5		
		PE	64 (1.86)	31 (1.41)	6 (0.36)	< 5		
		ATE	18 (0.52)	25 (1.14)	7 (0.41)	6 (0.73)		
		IS	6 (0.17)	< 5	< 5	< 5		
		TIA	< 5	7 (0.32)	< 5	< 5		
		MI	9 (0.26)	17 (0.77)	5 (0.30)	< 5		
		HF	42 (1.22)	72 (3.28)	9 (0.53)	5 (0.61)		
		HS	< 5	< 5	< 5	< 5		
		MP	< 5	< 5	< 5	< 5		
	31 to 90 days	VTE	12 (0.35)	14 (0.64)	< 5	< 5		
		DVT	5 (0.15)	8 (0.36)	< 5	< 5		
		PE	7 (0.20)	7 (0.32)	< 5	< 5		
		ATE	6 (0.17)	20 (0.91)	< 5	< 5		
		IS	< 5	< 5	< 5	< 5		
		TIA	< 5	9 (0.41)	< 5	< 5		
		MI	5 (0.15)	9 (0.41)	< 5	< 5		
		HF	26 (0.75)	42 (1.91)	< 5	5 (0.61)		
		HS	< 5	< 5	< 5	< 5		
		MP	< 5	< 5	< 5	< 5		
	91 to 180 days	VTE	6 (0.17)	15 (0.68)	< 5	< 5		
		DVT	< 5	5 (0.23)	< 5	< 5		
		PE	< 5	10 (0.45)	< 5	< 5		
		ATE	10 (0.29)	10 (0.45)	< 5	6 (0.73)		
		IS	< 5	< 5	< 5	< 5		
		TIA	5 (0.15)	6 (0.27)	< 5	< 5		
		MI	< 5	< 5	< 5	5 (0.61)		
		HF	31 (0.90)	38 (1.73)	< 5	< 5		
		HS	< 5	< 5	< 5	< 5		
		MP	< 5	< 5	< 5	< 5		

Cohort	Time window	Outcome	AURUM		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
	181 to 365 days	VTE	5 (0.15)	< 5	< 5	< 5		
		DVT	< 5	< 5	< 5	< 5		
		PE	< 5	< 5	< 5	< 5		
		ATE	9 (0.26)	9 (0.41)	< 5	< 5		
		IS	< 5	< 5	< 5	< 5		
		TIA	< 5	< 5	< 5	< 5		
		MI	< 5	< 5	< 5	< 5		
		HF	35 (1.02)	20 (0.91)	< 5	5 (0.61)		
		HS	< 5	< 5	< 5	< 5		
		MP	< 5	< 5	< 5	< 5		
<b>Cohort 2</b>			<b>N = 1,975,770</b>	<b>N = 969,262</b>	<b>N = 582,791</b>	<b>N = 302,999</b>	<b>N = 433,636</b>	<b>N = 323,204</b>
	0 to 30 days	VTE	243 (1.23)	158 (1.63)	33 (0.57)	19 (0.63)	262 (6.04)	90 (2.78)
		DVT	42 (0.21)	47 (0.48)	8 (0.14)	< 5	65 (1.50)	45 (1.39)
		PE	206 (1.04)	120 (1.24)	26 (0.45)	15 (0.50)	218 (5.03)	55 (1.70)
		ATE	38 (0.19)	75 (0.77)	< 5	< 5	177 (4.08)	131 (4.05)
		IS	6 (0.03)	12 (0.12)	< 5	< 5	97 (2.24)	52 (1.61)
		TIA	7 (0.04)	13 (0.13)	< 5	< 5	17 (0.39)	23 (0.71)
		MI	25 (0.13)	52 (0.54)	< 5	< 5	67 (1.55)	62 (1.92)
		HF	46 (0.23)	103 (1.06)	5 (0.09)	11 (0.36)	379 (8.74)	123 (3.81)
		HS	5 (0.03)	< 5	< 5	< 5	21 (0.48)	7 (0.22)
		MP	11 (0.06)	6 (0.06)	< 5	< 5	15 (0.35)	10 (0.31)
	31 to 90 days	VTE	49 (0.25)	55 (0.57)	< 5	9 (0.30)	60 (1.38)	36 (1.11)
		DVT	25 (0.13)	25 (0.26)	< 5	5 (0.17)	32 (0.74)	25 (0.77)
		PE	27 (0.14)	32 (0.33)	< 5	< 5	34 (0.78)	18 (0.56)
		ATE	16 (0.08)	57 (0.59)	< 5	5 (0.17)	86 (1.98)	107 (3.31)
		IS	< 5	6 (0.06)	< 5	< 5	42 (0.97)	58 (1.79)
		TIA	< 5	25 (0.26)	< 5	< 5	23 (0.53)	24 (0.74)
		MI	11 (0.06)	28 (0.29)	< 5	< 5	28 (0.65)	27 (0.84)
		HF	24 (0.12)	68 (0.70)	< 5	7 (0.23)	140 (3.23)	62 (1.92)
		HS	< 5	< 5	< 5	< 5	7 (0.16)	7 (0.22)
		MP	6 (0.03)	< 5	< 5	< 5	< 5	< 5
	91 to 180 days	VTE	25 (0.13)	30 (0.31)	< 5	< 5	58 (1.34)	23 (0.71)
		DVT	11 (0.06)	16 (0.17)	< 5	< 5	31 (0.71)	16 (0.50)
		PE	14 (0.07)	16 (0.17)	< 5	< 5	29 (0.67)	8 (0.25)



Cohort	Time window	Outcome	AURUM		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
		ATE	12 (0.06)	28 (0.29)	< 5	< 5	94 (2.17)	106 (3.28)
		IS	< 5	< 5	< 5	< 5	51 (1.18)	40 (1.24)
		TIA	7 (0.04)	13 (0.13)	< 5	< 5	21 (0.48)	32 (0.99)
		MI	6 (0.03)	15 (0.15)	< 5	< 5	25 (0.58)	37 (1.14)
		HF	16 (0.08)	44 (0.45)	< 5	< 5	115 (2.65)	60 (1.86)
		HS	< 5	< 5	< 5	< 5	8 (0.18)	< 5
		MP	< 5	< 5	< 5	< 5	8 (0.18)	< 5
	181 to 365 days	VTE	14 (0.07)	5 (0.05)	< 5	< 5	18 (0.42)	16 (0.50)
		DVT	< 5	< 5	< 5	< 5	10 (0.23)	13 (0.40)
		PE	10 (0.05)	< 5	< 5	< 5	9 (0.21)	< 5
		ATE	11 (0.06)	11 (0.11)	< 5	< 5	71 (1.64)	46 (1.42)
		IS	< 5	< 5	< 5	< 5	38 (0.88)	21 (0.65)
		TIA	< 5	< 5	< 5	< 5	20 (0.46)	13 (0.40)
		MI	8 (0.04)	7 (0.07)	< 5	< 5	15 (0.35)	16 (0.50)
		HF	18 (0.09)	23 (0.24)	< 5	< 5	81 (1.87)	26 (0.80)
		HS	< 5	< 5	< 5	< 5	5 (0.12)	< 5
		MP	< 5	< 5	< 5	< 5	< 5	< 5
<b>Cohort 3</b>			<b>N = 1,510,493</b>	<b>N = 1,473,602</b>	<b>N = 418,184</b>	<b>N = 423,876</b>	<b>N = 873,400</b>	<b>N = 84,204</b>
	0 to 30 days	VTE	244 (1.62)	139 (0.94)	28 (0.67)	16 (0.38)	332 (3.80)	27 (3.21)
		DVT	44 (0.29)	41 (0.28)	6 (0.14)	< 5	95 (1.09)	9 (1.07)
		PE	209 (1.38)	101 (0.69)	23 (0.55)	12 (0.28)	266 (3.05)	22 (2.61)
		ATE	28 (0.19)	47 (0.32)	< 5	12 (0.28)	216 (2.47)	32 (3.80)
		IS	< 5	5 (0.03)	< 5	< 5	103 (1.18)	13 (1.54)
		TIA	5 (0.03)	16 (0.11)	< 5	< 5	22 (0.25)	5 (0.59)
		MI	19 (0.13)	26 (0.18)	< 5	9 (0.21)	97 (1.11)	16 (1.90)
		HF	30 (0.20)	28 (0.19)	< 5	< 5	372 (4.26)	51 (6.06)
		HS	< 5	< 5	< 5	< 5	20 (0.23)	< 5
		MP	9 (0.06)	6 (0.04)	< 5	< 5	20 (0.23)	6 (0.71)
	31 to 90 days	VTE	46 (0.30)	44 (0.30)	< 5	7 (0.17)	85 (0.97)	9 (1.07)
		DVT	21 (0.14)	26 (0.18)	< 5	< 5	57 (0.65)	< 5
		PE	28 (0.19)	18 (0.12)	< 5	< 5	38 (0.44)	6 (0.71)
		ATE	11 (0.07)	31 (0.21)	< 5	7 (0.17)	109 (1.25)	25 (2.97)
		IS	< 5	< 5	< 5	< 5	52 (0.60)	11 (1.31)
		TIA	< 5	13 (0.09)	< 5	< 5	27 (0.31)	< 5

Cohort	Time window	Outcome	AURUM		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
		MI	9 (0.06)	16 (0.11)	< 5	< 5	38 (0.44)	10 (1.19)
		HF	14 (0.09)	23 (0.16)	< 5	< 5	142 (1.63)	25 (2.97)
		HS	< 5	< 5	< 5	< 5	7 (0.08)	< 5
		MP	8 (0.05)	7 (0.05)	< 5	< 5	9 (0.10)	< 5
	91 to 180 days	VTE	24 (0.16)	26 (0.18)	< 5	< 5	65 (0.74)	14 (1.66)
		DVT	11 (0.07)	15 (0.10)	< 5	< 5	36 (0.41)	7 (0.83)
		PE	14 (0.09)	14 (0.10)	< 5	< 5	33 (0.38)	8 (0.95)
		ATE	< 5	26 (0.18)	< 5	< 5	115 (1.32)	30 (3.56)
		IS	< 5	< 5	< 5	< 5	58 (0.66)	14 (1.66)
		TIA	< 5	8 (0.05)	< 5	< 5	22 (0.25)	10 (1.19)
		MI	< 5	17 (0.12)	< 5	< 5	38 (0.44)	8 (0.95)
		HF	10 (0.07)	12 (0.08)	< 5	< 5	122 (1.40)	12 (1.43)
		HS	< 5	< 5	< 5	< 5	9 (0.10)	< 5
		MP	< 5	< 5	< 5	< 5	8 (0.09)	< 5
		181 to 365 days	VTE	< 5	11 (0.07)	< 5	< 5	35 (0.40)
	DVT		< 5	5 (0.03)	< 5	< 5	21 (0.24)	< 5
	PE		< 5	7 (0.05)	< 5	< 5	16 (0.18)	5 (0.59)
	ATE		< 5	< 5	< 5	< 5	57 (0.65)	15 (1.78)
	IS		< 5	< 5	< 5	< 5	26 (0.30)	6 (0.71)
	TIA		< 5	< 5	< 5	< 5	12 (0.14)	< 5
	MI		< 5	< 5	< 5	< 5	20 (0.23)	8 (0.95)
	HF		< 5	< 5	< 5	< 5	64 (0.73)	6 (0.71)
	HS		< 5	< 5	< 5	< 5	< 5	< 5
	MP		< 5	< 5	< 5	< 5	< 5	< 5
	<b>Cohort 4</b>		<b>N = 2,066,318</b>	<b>N = 542,670</b>	<b>N = 485,154</b>	<b>N = 147,744</b>		
0 to 30 days	VTE	346 (1.67)	27 (0.50)	38 (0.78)	8 (0.54)			
	DVT	56 (0.27)	7 (0.13)	6 (0.12)	< 5			
	PE	302 (1.46)	21 (0.39)	33 (0.68)	6 (0.41)			
	ATE	26 (0.13)	5 (0.09)	< 5	< 5			
	IS	< 5	< 5	< 5	< 5			
	TIA	5 (0.02)	< 5	< 5	< 5			
	MI	17 (0.08)	< 5	< 5	< 5			
	HF	28 (0.14)	< 5	< 5	< 5			
	HS	< 5	< 5	< 5	< 5			

Cohort	Time window	Outcome	AURUM		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
		MP	14 (0.07)	< 5	< 5	< 5		
	31 to 90 days	VTE	60 (0.29)	14 (0.26)	< 5	< 5		
		DVT	23 (0.11)	8 (0.15)	< 5	< 5		
		PE	40 (0.19)	6 (0.11)	< 5	< 5		
		ATE	13 (0.06)	< 5	< 5	< 5		
		IS	< 5	< 5	< 5	< 5		
		TIA	< 5	< 5	< 5	< 5		
		MI	9 (0.04)	< 5	< 5	< 5		
		HF	14 (0.07)	< 5	< 5	< 5		
		HS	< 5	< 5	< 5	< 5		
		MP	7 (0.03)	< 5	< 5	< 5		
		91 to 180 days	VTE	29 (0.14)	< 5	< 5	< 5	
	DVT		10 (0.05)	< 5	< 5	< 5		
	PE		20 (0.10)	< 5	< 5	< 5		
	ATE		< 5	< 5	< 5	< 5		
	IS		< 5	< 5	< 5	< 5		
	TIA		< 5	< 5	< 5	< 5		
	MI		< 5	< 5	< 5	< 5		
	HF		10 (0.05)	< 5	< 5	< 5		
	HS		< 5	< 5	< 5	< 5		
	MP		< 5	< 5	< 5	< 5		
	181 to 365 days		VTE	< 5	< 5	< 5	< 5	
		DVT	< 5	< 5	< 5	< 5		
		PE	< 5	< 5	< 5	< 5		
		ATE	< 5	< 5	< 5	< 5		
		IS	< 5	< 5	< 5	< 5		
		TIA	< 5	< 5	< 5	< 5		
		MI	< 5	< 5	< 5	< 5		
		HF	< 5	< 5	< 5	< 5		
		HS	< 5	< 5	< 5	< 5		
		MP	< 5	< 5	< 5	< 5		

VTE = Venous thromboembolism (DVT + PE), DVT = Deep vein thrombosis, PE = Pulmonary embolism, ATE = Arterial thrombosis/thromboembolism (IS + TIA + MI), IS = Ischemic stroke, TIA = Transient ischemic attack, MI = Myocardial infarction, HF = Heart failure, HS = Hemorrhagic stroke, MP = Myocarditis or Pericarditis

**Table S29: Number of records (and risk per 10,000 individuals) for post COVID-19 cardiac and thromboembolic complications, across cohorts and databases, stratified by exposure status (ChAdOx1 vaccine). Follow-up ends at first vaccine dose after index date.**

Cohort	Time window	Outcome	AURUM		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
Cohort 1			<b>N = 344,687</b>	<b>N = 219,804</b>	<b>N = 168,972</b>	<b>N = 82,406</b>		
	0 to 30 days	VTE	77 (2.23)	14 (0.64)	7 (0.41)	< 5		
		DVT	16 (0.46)	< 5	< 5	< 5		
		PE	64 (1.86)	13 (0.59)	6 (0.36)	< 5		
		ATE	18 (0.52)	10 (0.45)	7 (0.41)	< 5		
		IS	6 (0.17)	< 5	< 5	< 5		
		TIA	< 5	< 5	< 5	< 5		
		MI	9 (0.26)	6 (0.27)	5 (0.30)	< 5		
		HF	42 (1.22)	28 (1.27)	9 (0.53)	< 5		
		HS	< 5	< 5	< 5	< 5		
		MP	< 5	< 5	< 5	< 5		
		31 to 90 days	VTE	12 (0.35)	5 (0.23)	< 5	< 5	
	DVT		5 (0.15)	< 5	< 5	< 5		
	PE		7 (0.20)	< 5	< 5	< 5		
	ATE		6 (0.17)	8 (0.36)	< 5	< 5		
	IS		< 5	< 5	< 5	< 5		
	TIA		< 5	< 5	< 5	< 5		
	MI		5 (0.15)	< 5	< 5	< 5		
	HF		26 (0.75)	20 (0.91)	< 5	< 5		
	HS		< 5	< 5	< 5	< 5		
	MP		< 5	< 5	< 5	< 5		
	91 to 180 days		VTE	6 (0.17)	5 (0.23)	< 5	< 5	
		DVT	< 5	< 5	< 5	< 5		
		PE	< 5	< 5	< 5	< 5		
		ATE	10 (0.29)	< 5	< 5	< 5		
		IS	< 5	< 5	< 5	< 5		
		TIA	5 (0.15)	< 5	< 5	< 5		
		MI	< 5	< 5	< 5	< 5		
		HF	31 (0.90)	19 (0.86)	< 5	< 5		
		HS	< 5	< 5	< 5	< 5		
		MP	< 5	< 5	< 5	< 5		

Cohort	Time window	Outcome	AURUM		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
	181 to 365 days	VTE	5 (0.15)	< 5	< 5	< 5		
		DVT	< 5	< 5	< 5	< 5		
		PE	< 5	< 5	< 5	< 5		
		ATE	9 (0.26)	8 (0.36)	< 5	< 5		
		IS	< 5	< 5	< 5	< 5		
		TIA	< 5	< 5	< 5	< 5		
		MI	< 5	< 5	< 5	< 5		
		HF	35 (1.02)	18 (0.82)	< 5	5 (0.61)		
		HS	< 5	< 5	< 5	< 5		
		MP	< 5	< 5	< 5	< 5		
<b>Cohort 2</b>			<b>N = 1,975,770</b>	<b>N = 969,262</b>	<b>N = 582,791</b>	<b>N = 302,999</b>	<b>N = 433,636</b>	<b>N = 323,204</b>
	0 to 30 days	VTE	243 (1.23)	40 (0.41)	33 (0.57)	< 5	262 (6.04)	9 (0.28)
		DVT	42 (0.21)	13 (0.13)	8 (0.14)	< 5	65 (1.50)	5 (0.15)
		PE	206 (1.04)	30 (0.31)	26 (0.45)	< 5	218 (5.03)	6 (0.19)
		ATE	38 (0.19)	11 (0.11)	< 5	< 5	177 (4.08)	6 (0.19)
		IS	6 (0.03)	< 5	< 5	< 5	97 (2.24)	< 5
		TIA	7 (0.04)	< 5	< 5	< 5	17 (0.39)	< 5
		MI	25 (0.13)	9 (0.09)	< 5	< 5	67 (1.55)	< 5
		HF	46 (0.23)	32 (0.33)	5 (0.09)	< 5	379 (8.74)	12 (0.37)
		HS	5 (0.03)	< 5	< 5	< 5	21 (0.48)	< 5
		MP	11 (0.06)	< 5	< 5	< 5	15 (0.35)	< 5
	31 to 90 days	VTE	49 (0.25)	8 (0.08)	< 5	< 5	60 (1.38)	< 5
		DVT	25 (0.13)	5 (0.05)	< 5	< 5	32 (0.74)	< 5
		PE	27 (0.14)	< 5	< 5	< 5	34 (0.78)	< 5
		ATE	16 (0.08)	9 (0.09)	< 5	< 5	86 (1.98)	6 (0.19)
		IS	< 5	< 5	< 5	< 5	42 (0.97)	< 5
		TIA	< 5	< 5	< 5	< 5	23 (0.53)	< 5
		MI	11 (0.06)	6 (0.06)	< 5	< 5	28 (0.65)	< 5
		HF	24 (0.12)	13 (0.13)	< 5	< 5	140 (3.23)	7 (0.22)
		HS	< 5	< 5	< 5	< 5	7 (0.16)	< 5
		MP	6 (0.03)	< 5	< 5	< 5	< 5	< 5
	91 to 180 days	VTE	25 (0.13)	12 (0.12)	< 5	< 5	58 (1.34)	< 5
		DVT	11 (0.06)	7 (0.07)	< 5	< 5	31 (0.71)	< 5
		PE	14 (0.07)	5 (0.05)	< 5	< 5	29 (0.67)	< 5

Cohort	Time window	Outcome	AURUM		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
		ATE	12 (0.06)	10 (0.10)	< 5	< 5	94 (2.17)	6 (0.19)
		IS	< 5	< 5	< 5	< 5	51 (1.18)	< 5
		TIA	7 (0.04)	< 5	< 5	< 5	21 (0.48)	< 5
		MI	6 (0.03)	6 (0.06)	< 5	< 5	25 (0.58)	< 5
		HF	16 (0.08)	18 (0.19)	< 5	< 5	115 (2.65)	< 5
		HS	< 5	< 5	< 5	< 5	8 (0.18)	< 5
		MP	< 5	< 5	< 5	< 5	8 (0.18)	< 5
	181 to 365 days	VTE	14 (0.07)	5 (0.05)	< 5	< 5	18 (0.42)	9 (0.28)
		DVT	< 5	< 5	< 5	< 5	10 (0.23)	7 (0.22)
		PE	10 (0.05)	< 5	< 5	< 5	9 (0.21)	< 5
		ATE	11 (0.06)	10 (0.10)	< 5	< 5	71 (1.64)	10 (0.31)
		IS	< 5	< 5	< 5	< 5	38 (0.88)	< 5
		TIA	< 5	< 5	< 5	< 5	20 (0.46)	< 5
		MI	8 (0.04)	6 (0.06)	< 5	< 5	15 (0.35)	5 (0.15)
		HF	18 (0.09)	20 (0.21)	< 5	< 5	81 (1.87)	9 (0.28)
		HS	< 5	< 5	< 5	< 5	5 (0.12)	< 5
		MP	< 5	< 5	< 5	< 5	< 5	< 5
<b>Cohort 3</b>			<b>N = 1,510,493</b>	<b>N = 1,473,602</b>	<b>N = 418,184</b>	<b>N = 423,876</b>	<b>N = 873,400</b>	<b>N = 84,204</b>
	0 to 30 days	VTE	244 (1.62)	23 (0.16)	28 (0.67)	< 5	332 (3.80)	5 (0.59)
		DVT	44 (0.29)	< 5	6 (0.14)	< 5	95 (1.09)	< 5
		PE	209 (1.38)	19 (0.13)	23 (0.55)	< 5	266 (3.05)	< 5
		ATE	28 (0.19)	8 (0.05)	< 5	< 5	216 (2.47)	< 5
		IS	< 5	< 5	< 5	< 5	103 (1.18)	< 5
		TIA	5 (0.03)	< 5	< 5	< 5	22 (0.25)	< 5
		MI	19 (0.13)	7 (0.05)	< 5	< 5	97 (1.11)	< 5
		HF	30 (0.20)	11 (0.07)	< 5	< 5	372 (4.26)	5 (0.59)
		HS	< 5	< 5	< 5	< 5	20 (0.23)	< 5
		MP	9 (0.06)	< 5	< 5	< 5	20 (0.23)	< 5
	31 to 90 days	VTE	46 (0.30)	< 5	< 5	< 5	85 (0.97)	< 5
		DVT	21 (0.14)	< 5	< 5	< 5	57 (0.65)	< 5
		PE	28 (0.19)	< 5	< 5	< 5	38 (0.44)	< 5
		ATE	11 (0.07)	6 (0.04)	< 5	< 5	109 (1.25)	< 5
		IS	< 5	< 5	< 5	< 5	52 (0.60)	< 5
		TIA	< 5	< 5	< 5	27 (0.31)	< 5	

Cohort	Time window	Outcome	AURUM		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
	91 to 180 days	MI	9 (0.06)	< 5	< 5	< 5	38 (0.44)	< 5
		HF	14 (0.09)	5 (0.03)	< 5	< 5	142 (1.63)	< 5
		HS	< 5	< 5	< 5	< 5	7 (0.08)	< 5
		MP	8 (0.05)	< 5	< 5	< 5	9 (0.10)	< 5
		VTE	24 (0.16)	8 (0.05)	< 5	< 5	65 (0.74)	< 5
		DVT	11 (0.07)	6 (0.04)	< 5	< 5	36 (0.41)	< 5
		PE	14 (0.09)	< 5	< 5	< 5	33 (0.38)	< 5
		ATE	< 5	7 (0.05)	< 5	< 5	115 (1.32)	6 (0.71)
		IS	< 5	< 5	< 5	< 5	58 (0.66)	5 (0.59)
		TIA	< 5	< 5	< 5	< 5	22 (0.25)	< 5
		MI	< 5	< 5	< 5	< 5	38 (0.44)	< 5
		HF	10 (0.07)	< 5	< 5	< 5	122 (1.40)	< 5
		HS	< 5	< 5	< 5	< 5	9 (0.10)	< 5
		MP	< 5	< 5	< 5	< 5	8 (0.09)	< 5
	181 to 365 days	VTE	< 5	9 (0.06)	< 5	< 5	35 (0.40)	< 5
	DVT	< 5	< 5	< 5	< 5	21 (0.24)	< 5	
	PE	< 5	6 (0.04)	< 5	< 5	16 (0.18)	< 5	
	ATE	< 5	< 5	< 5	< 5	57 (0.65)	8 (0.95)	
	IS	< 5	< 5	< 5	< 5	26 (0.30)	< 5	
	TIA	< 5	< 5	< 5	< 5	12 (0.14)	< 5	
	MI	< 5	< 5	< 5	< 5	20 (0.23)	< 5	
	HF	< 5	< 5	< 5	< 5	64 (0.73)	5 (0.59)	
	HS	< 5	< 5	< 5	< 5	< 5	< 5	
	MP	< 5	< 5	< 5	< 5	< 5	< 5	
<b>Cohort 4</b>			<b>N = 2,066,318</b>	<b>N = 542,670</b>	<b>N = 485,154</b>	<b>N = 147,744</b>		
0 to 30 days	VTE	346 (1.67)	8 (0.15)	38 (0.78)	6 (0.41)			
	DVT	56 (0.27)	< 5	6 (0.12)	< 5			
	PE	302 (1.46)	7 (0.13)	33 (0.68)	6 (0.41)			
	ATE	26 (0.13)	< 5	< 5	< 5			
	IS	< 5	< 5	< 5	< 5			
	TIA	5 (0.02)	< 5	< 5	< 5			
	MI	17 (0.08)	< 5	< 5	< 5			
	HF	28 (0.14)	< 5	< 5	< 5			
	HS	< 5	< 5	< 5	< 5			

Cohort	Time window	Outcome	AURUM		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
		MP	14 (0.07)	< 5	< 5	< 5		
	31 to 90 days	VTE	60 (0.29)	8 (0.15)	< 5	< 5		
		DVT	23 (0.11)	< 5	< 5	< 5		
		PE	40 (0.19)	5 (0.09)	< 5	< 5		
		ATE	13 (0.06)	< 5	< 5	< 5		
		IS	< 5	< 5	< 5	< 5		
		TIA	< 5	< 5	< 5	< 5		
		MI	9 (0.04)	< 5	< 5	< 5		
		HF	14 (0.07)	< 5	< 5	< 5		
		HS	< 5	< 5	< 5	< 5		
		MP	7 (0.03)	< 5	< 5	< 5		
		91 to 180 days	VTE	29 (0.14)	< 5	< 5	< 5	
	DVT		10 (0.05)	< 5	< 5	< 5		
	PE		20 (0.10)	< 5	< 5	< 5		
	ATE		< 5	< 5	< 5	< 5		
	IS		< 5	< 5	< 5	< 5		
	TIA		< 5	< 5	< 5	< 5		
	MI		< 5	< 5	< 5	< 5		
	HF		10 (0.05)	< 5	< 5	< 5		
	HS		< 5	< 5	< 5	< 5		
	MP		< 5	< 5	< 5	< 5		
	181 to 365 days		VTE	< 5	< 5	< 5	< 5	
		DVT	< 5	< 5	< 5	< 5		
		PE	< 5	< 5	< 5	< 5		
		ATE	< 5	< 5	< 5	< 5		
		IS	< 5	< 5	< 5	< 5		
		TIA	< 5	< 5	< 5	< 5		
		MI	< 5	< 5	< 5	< 5		
		HF	< 5	< 5	< 5	< 5		
		HS	< 5	< 5	< 5	< 5		
	MP	< 5	< 5	< 5	< 5			

VTE = Venous thromboembolism (DVT + PE), DVT = Deep vein thrombosis, PE = Pulmonary embolism, ATE = Arterial thrombosis/thromboembolism (IS + TIA + MI), IS = Ischemic stroke, TIA = Transient ischemic attack, MI = Myocardial infarction, HF = Heart failure, HS = Hemorrhagic stroke, MP = Myocarditis or Pericarditis



**Table S30: Number of records (and risk per 10,000 individuals) for post COVID-19 cardiac and thromboembolic complications, across cohorts and databases, stratified by exposure status (ChAdOx1 vaccine). Only first outcome after COVID-19 captured.**

Cohort	Time window	Outcome	AURUM		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
<b>Cohort 1</b>			<b>N = 344,687</b>	<b>N = 219,804</b>	<b>N = 168,972</b>	<b>N = 82,406</b>		
	<b>0 to 30 days</b>	<b>VTE</b>	77 (2.23)	41 (1.87)	7 (0.41)	< 5		
		<b>DVT</b>	16 (0.46)	12 (0.55)	< 5	< 5		
		<b>PE</b>	64 (1.86)	31 (1.41)	6 (0.36)	< 5		
		<b>ATE</b>	18 (0.52)	25 (1.14)	7 (0.41)	6 (0.73)		
		<b>IS</b>	6 (0.17)	< 5	< 5	< 5		
		<b>TIA</b>	< 5	7 (0.32)	< 5	< 5		
		<b>MI</b>	9 (0.26)	17 (0.77)	5 (0.30)	< 5		
		<b>HF</b>	42 (1.22)	72 (3.28)	9 (0.53)	5 (0.61)		
		<b>HS</b>	< 5	< 5	< 5	< 5		
		<b>MP</b>	< 5	< 5	< 5	< 5		
		<b>31 to 90 days</b>	<b>VTE</b>	12 (0.35)	14 (0.64)	< 5	< 5	
	<b>DVT</b>		5 (0.15)	8 (0.36)	< 5	< 5		
	<b>PE</b>		7 (0.20)	7 (0.32)	< 5	< 5		
	<b>ATE</b>		6 (0.17)	20 (0.91)	< 5	< 5		
	<b>IS</b>		< 5	< 5	< 5	< 5		
	<b>TIA</b>		< 5	9 (0.41)	< 5	< 5		
	<b>MI</b>		5 (0.15)	9 (0.41)	< 5	< 5		
	<b>HF</b>		26 (0.75)	39 (1.77)	< 5	5 (0.61)		
	<b>HS</b>		< 5	< 5	< 5	< 5		
	<b>MP</b>		< 5	< 5	< 5	< 5		
	<b>91 to 180 days</b>		<b>VTE</b>	6 (0.17)	15 (0.68)	< 5	< 5	
		<b>DVT</b>	< 5	5 (0.23)	< 5	< 5		
		<b>PE</b>	< 5	10 (0.45)	< 5	< 5		
		<b>ATE</b>	10 (0.29)	10 (0.45)	< 5	6 (0.73)		
		<b>IS</b>	< 5	< 5	< 5	< 5		
		<b>TIA</b>	5 (0.15)	6 (0.27)	< 5	< 5		
		<b>MI</b>	< 5	< 5	< 5	5 (0.61)		
		<b>HF</b>	28 (0.81)	35 (1.59)	< 5	< 5		
		<b>HS</b>	< 5	< 5	< 5	< 5		
		<b>MP</b>	< 5	< 5	< 5	< 5		

Cohort	Time window	Outcome	AURUM		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
	181 to 365 days	VTE	< 5	< 5	< 5	< 5		
		DVT	< 5	< 5	< 5	< 5		
		PE	< 5	< 5	< 5	< 5		
		ATE	9 (0.26)	9 (0.41)	< 5	< 5		
		IS	< 5	< 5	< 5	< 5		
		TIA	< 5	< 5	< 5	< 5		
		MI	< 5	< 5	< 5	< 5		
		HF	32 (0.93)	18 (0.82)	< 5	5 (0.61)		
		HS	< 5	< 5	< 5	< 5		
		MP	< 5	< 5	< 5	< 5		
<b>Cohort 2</b>			<b>N = 1,975,770</b>	<b>N = 969,262</b>	<b>N = 582,791</b>	<b>N = 302,999</b>	<b>N = 433,636</b>	<b>N = 323,204</b>
	0 to 30 days	VTE	243 (1.23)	158 (1.63)	33 (0.57)	19 (0.63)	262 (6.04)	90 (2.78)
		DVT	42 (0.21)	47 (0.48)	8 (0.14)	< 5	65 (1.50)	45 (1.39)
		PE	206 (1.04)	120 (1.24)	26 (0.45)	15 (0.50)	218 (5.03)	55 (1.70)
		ATE	38 (0.19)	75 (0.77)	< 5	< 5	177 (4.08)	131 (4.05)
		IS	6 (0.03)	12 (0.12)	< 5	< 5	97 (2.24)	52 (1.61)
		TIA	7 (0.04)	13 (0.13)	< 5	< 5	17 (0.39)	23 (0.71)
		MI	25 (0.13)	52 (0.54)	< 5	< 5	67 (1.55)	62 (1.92)
		HF	46 (0.23)	103 (1.06)	5 (0.09)	11 (0.36)	379 (8.74)	123 (3.81)
		HS	5 (0.03)	< 5	< 5	< 5	21 (0.48)	7 (0.22)
		MP	11 (0.06)	6 (0.06)	< 5	< 5	15 (0.35)	10 (0.31)
	31 to 90 days	VTE	46 (0.23)	54 (0.56)	< 5	9 (0.30)	57 (1.31)	34 (1.05)
		DVT	24 (0.12)	25 (0.26)	< 5	5 (0.17)	30 (0.69)	23 (0.71)
		PE	25 (0.13)	31 (0.32)	< 5	< 5	32 (0.74)	16 (0.50)
		ATE	16 (0.08)	56 (0.58)	< 5	5 (0.17)	84 (1.94)	106 (3.28)
		IS	< 5	6 (0.06)	< 5	< 5	42 (0.97)	57 (1.76)
		TIA	< 5	24 (0.25)	< 5	< 5	23 (0.53)	24 (0.74)
		MI	11 (0.06)	28 (0.29)	< 5	< 5	26 (0.60)	27 (0.84)
		HF	24 (0.12)	65 (0.67)	< 5	7 (0.23)	134 (3.09)	61 (1.89)
		HS	< 5	< 5	< 5	< 5	7 (0.16)	7 (0.22)
		MP	6 (0.03)	< 5	< 5	< 5	< 5	< 5
	91 to 180 days	VTE	22 (0.11)	28 (0.29)	< 5	< 5	52 (1.20)	21 (0.65)
		DVT	10 (0.05)	15 (0.15)	< 5	< 5	28 (0.65)	16 (0.50)
		PE	12 (0.06)	15 (0.15)	< 5	< 5	26 (0.60)	6 (0.19)

Cohort	Time window	Outcome	AURUM		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
		ATE	11 (0.06)	28 (0.29)	< 5	< 5	83 (1.91)	106 (3.28)
		IS	< 5	< 5	< 5	< 5	45 (1.04)	40 (1.24)
		TIA	7 (0.04)	13 (0.13)	< 5	< 5	20 (0.46)	32 (0.99)
		MI	5 (0.03)	15 (0.15)	< 5	< 5	21 (0.48)	37 (1.14)
		HF	16 (0.08)	41 (0.42)	< 5	< 5	105 (2.42)	54 (1.67)
		HS	< 5	< 5	< 5	< 5	7 (0.16)	< 5
		MP	< 5	< 5	< 5	< 5	7 (0.16)	< 5
	181 to 365 days	VTE	14 (0.07)	< 5	< 5	< 5	17 (0.39)	14 (0.43)
		DVT	< 5	< 5	< 5	< 5	9 (0.21)	12 (0.37)
		PE	10 (0.05)	< 5	< 5	< 5	9 (0.21)	< 5
		ATE	10 (0.05)	10 (0.10)	< 5	< 5	61 (1.41)	40 (1.24)
		IS	< 5	< 5	< 5	< 5	33 (0.76)	19 (0.59)
		TIA	< 5	< 5	< 5	< 5	18 (0.42)	12 (0.37)
		MI	7 (0.04)	6 (0.06)	< 5	< 5	12 (0.28)	13 (0.40)
		HF	17 (0.09)	22 (0.23)	< 5	< 5	70 (1.61)	25 (0.77)
		HS	< 5	< 5	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5	< 5	< 5
<b>Cohort 3</b>			<b>N = 1,510,493</b>	<b>N = 1,473,602</b>	<b>N = 418,184</b>	<b>N = 423,876</b>	<b>N = 873,400</b>	<b>N = 84,204</b>
	0 to 30 days	VTE	244 (1.62)	139 (0.94)	28 (0.67)	16 (0.38)	332 (3.80)	27 (3.21)
		DVT	44 (0.29)	41 (0.28)	6 (0.14)	< 5	95 (1.09)	9 (1.07)
		PE	209 (1.38)	101 (0.69)	23 (0.55)	12 (0.28)	266 (3.05)	22 (2.61)
		ATE	28 (0.19)	47 (0.32)	< 5	12 (0.28)	216 (2.47)	32 (3.80)
		IS	< 5	5 (0.03)	< 5	< 5	103 (1.18)	13 (1.54)
		TIA	5 (0.03)	16 (0.11)	< 5	< 5	22 (0.25)	5 (0.59)
		MI	19 (0.13)	26 (0.18)	< 5	9 (0.21)	97 (1.11)	16 (1.90)
		HF	30 (0.20)	28 (0.19)	< 5	< 5	372 (4.26)	51 (6.06)
		HS	< 5	< 5	< 5	< 5	20 (0.23)	< 5
		MP	9 (0.06)	6 (0.04)	< 5	< 5	20 (0.23)	6 (0.71)
	31 to 90 days	VTE	43 (0.28)	44 (0.30)	< 5	6 (0.14)	81 (0.93)	9 (1.07)
		DVT	20 (0.13)	26 (0.18)	< 5	< 5	54 (0.62)	< 5
		PE	26 (0.17)	18 (0.12)	< 5	< 5	36 (0.41)	6 (0.71)
		ATE	11 (0.07)	31 (0.21)	< 5	7 (0.17)	108 (1.24)	25 (2.97)
		IS	< 5	< 5	< 5	< 5	52 (0.60)	11 (1.31)
		TIA	< 5	13 (0.09)	< 5	< 5	27 (0.31)	< 5

Cohort	Time window	Outcome	AURUM		GOLD		SIDIAP		
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	
	91 to 180 days	MI	9 (0.06)	16 (0.11)	< 5	< 5	37 (0.42)	10 (1.19)	
		HF	14 (0.09)	23 (0.16)	< 5	< 5	135 (1.55)	25 (2.97)	
		HS	< 5	< 5	< 5	< 5	7 (0.08)	< 5	
		MP	8 (0.05)	7 (0.05)	< 5	< 5	9 (0.10)	< 5	
		VTE	23 (0.15)	25 (0.17)	< 5	< 5	58 (0.66)	13 (1.54)	
		DVT	10 (0.07)	15 (0.10)	< 5	< 5	33 (0.38)	7 (0.83)	
		PE	14 (0.09)	13 (0.09)	< 5	< 5	29 (0.33)	7 (0.83)	
		ATE	< 5	26 (0.18)	< 5	< 5	104 (1.19)	28 (3.33)	
		IS	< 5	< 5	< 5	< 5	50 (0.57)	12 (1.43)	
		TIA	< 5	8 (0.05)	< 5	< 5	20 (0.23)	10 (1.19)	
		MI	< 5	17 (0.12)	< 5	< 5	36 (0.41)	8 (0.95)	
		HF	10 (0.07)	10 (0.07)	< 5	< 5	111 (1.27)	12 (1.43)	
		HS	< 5	< 5	< 5	< 5	9 (0.10)	< 5	
		MP	< 5	< 5	< 5	< 5	8 (0.09)	< 5	
	181 to 365 days	VTE	< 5	9 (0.06)	< 5	< 5	31 (0.35)	< 5	
	DVT	< 5	< 5	< 5	< 5	18 (0.21)	< 5		
	PE	< 5	6 (0.04)	< 5	< 5	15 (0.17)	< 5		
	ATE	< 5	< 5	< 5	< 5	48 (0.55)	15 (1.78)		
	IS	< 5	< 5	< 5	< 5	21 (0.24)	6 (0.71)		
	TIA	< 5	< 5	< 5	< 5	11 (0.13)	< 5		
	MI	< 5	< 5	< 5	< 5	17 (0.19)	8 (0.95)		
	HF	< 5	< 5	< 5	< 5	55 (0.63)	6 (0.71)		
	HS	< 5	< 5	< 5	< 5	< 5	< 5		
	MP	< 5	< 5	< 5	< 5	< 5	< 5		
	<b>Cohort 4</b>			<b>N = 2,066,318</b>	<b>N = 542,670</b>	<b>N = 485,154</b>	<b>N = 147,744</b>		
	0 to 30 days	VTE	346 (1.67)	27 (0.50)	38 (0.78)	8 (0.54)			
DVT		56 (0.27)	7 (0.13)	6 (0.12)	< 5				
PE		302 (1.46)	21 (0.39)	33 (0.68)	6 (0.41)				
ATE		26 (0.13)	5 (0.09)	< 5	< 5				
IS		< 5	< 5	< 5	< 5				
TIA		5 (0.02)	< 5	< 5	< 5				
MI		17 (0.08)	< 5	< 5	< 5				
HF		28 (0.14)	< 5	< 5	< 5				
HS		< 5	< 5	< 5	< 5				

Cohort	Time window	Outcome	AURUM		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
		MP	14 (0.07)	< 5	< 5	< 5		
	31 to 90 days	VTE	57 (0.28)	14 (0.26)	< 5	< 5		
		DVT	22 (0.11)	8 (0.15)	< 5	< 5		
		PE	38 (0.18)	6 (0.11)	< 5	< 5		
		ATE	13 (0.06)	< 5	< 5	< 5		
		IS	< 5	< 5	< 5	< 5		
		TIA	< 5	< 5	< 5	< 5		
		MI	9 (0.04)	< 5	< 5	< 5		
		HF	14 (0.07)	< 5	< 5	< 5		
		HS	< 5	< 5	< 5	< 5		
		MP	7 (0.03)	< 5	< 5	< 5		
		91 to 180 days	VTE	28 (0.14)	< 5	< 5	< 5	
	DVT		9 (0.04)	< 5	< 5	< 5		
	PE		20 (0.10)	< 5	< 5	< 5		
	ATE		< 5	< 5	< 5	< 5		
	IS		< 5	< 5	< 5	< 5		
	TIA		< 5	< 5	< 5	< 5		
	MI		< 5	< 5	< 5	< 5		
	HF		10 (0.05)	< 5	< 5	< 5		
	HS		< 5	< 5	< 5	< 5		
	MP		< 5	< 5	< 5	< 5		
	181 to 365 days		VTE	< 5	< 5	< 5	< 5	
		DVT	< 5	< 5	< 5	< 5		
		PE	< 5	< 5	< 5	< 5		
		ATE	< 5	< 5	< 5	< 5		
		IS	< 5	< 5	< 5	< 5		
		TIA	< 5	< 5	< 5	< 5		
		MI	< 5	< 5	< 5	< 5		
		HF	< 5	< 5	< 5	< 5		
		HS	< 5	< 5	< 5	< 5		
		MP	< 5	< 5	< 5	< 5		

VTE = Venous thromboembolism (DVT + PE), DVT = Deep vein thrombosis, PE = Pulmonary embolism, ATE = Arterial thrombosis/thromboembolism (IS + TIA + MI), IS = Ischemic stroke, TIA = Transient ischemic attack, MI = Myocardial infarction, HF = Heart failure, HS = Hemorrhagic stroke, MP = Myocarditis or Pericarditis

**Table S31: Number of records (and risk per 10,000 individuals) for post COVID-19 cardiac and thromboembolic complications, across cohorts and databases, stratified by exposure status (BNT162b2 vaccine).**

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
<b>Cohort 1</b>			<b>N = 348,052</b>	<b>N = 332,790</b>	<b>N = 24,073</b>	<b>N = 19,686</b>	<b>N = 169,459</b>	<b>N = 32,755</b>	<b>N = 223,960</b>	<b>N = 88,896</b>
0 to 30 days	VTE	106 (3.05)	76 (2.28)	76 (31.57)	40 (20.32)	8 (0.47)	< 5	75 (3.35)	94 (10.57)	
	DVT	21 (0.60)	15 (0.45)	14 (5.82)	13 (6.60)	< 5	< 5	20 (0.89)	29 (3.26)	
	PE	90 (2.59)	64 (1.92)	64 (26.59)	28 (14.22)	6 (0.35)	< 5	60 (2.68)	75 (8.44)	
	ATE	27 (0.78)	45 (1.35)	114 (47.36)	61 (30.99)	6 (0.35)	< 5	79 (3.53)	206 (23.17)	
	IS	9 (0.26)	5 (0.15)	68 (28.25)	26 (13.21)	< 5	< 5	46 (2.05)	116 (13.05)	
	TIA	5 (0.14)	11 (0.33)	22 (9.14)	15 (7.62)	< 5	< 5	7 (0.31)	41 (4.61)	
	MI	14 (0.40)	29 (0.87)	34 (14.12)	27 (13.72)	< 5	< 5	28 (1.25)	61 (6.86)	
	HF	59 (1.70)	126 (3.79)	393 (163.25)	231 (117.34)	9 (0.53)	< 5	299 (13.35)	634 (71.32)	
	HS	< 5	< 5	< 5	< 5	< 5	< 5	7 (0.31)	14 (1.57)	
	MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	
31 to 90 days	VTE	18 (0.52)	26 (0.78)	40 (16.62)	24 (12.19)	< 5	< 5	16 (0.71)	44 (4.95)	
	DVT	9 (0.26)	7 (0.21)	19 (7.89)	14 (7.11)	< 5	< 5	10 (0.45)	29 (3.26)	
	PE	9 (0.26)	19 (0.57)	24 (9.97)	10 (5.08)	< 5	< 5	6 (0.27)	19 (2.14)	
	ATE	9 (0.26)	23 (0.69)	31 (12.88)	35 (17.78)	< 5	< 5	41 (1.83)	128 (14.40)	
	IS	< 5	< 5	18 (7.48)	14 (7.11)	< 5	< 5	20 (0.89)	71 (7.99)	
	TIA	5 (0.14)	10 (0.30)	7 (2.91)	14 (7.11)	< 5	< 5	13 (0.58)	32 (3.60)	
	MI	5 (0.14)	11 (0.33)	11 (4.57)	10 (5.08)	< 5	< 5	11 (0.49)	29 (3.26)	
	HF	32 (0.92)	71 (2.13)	151 (62.73)	141 (71.62)	< 5	< 5	87 (3.88)	296 (33.30)	
	HS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	13 (1.46)	
	MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	
91 to 180 days	VTE	10 (0.29)	6 (0.18)	19 (7.89)	27 (13.72)	< 5	< 5	21 (0.94)	40 (4.50)	
	DVT	< 5	< 5	11 (4.57)	14 (7.11)	< 5	< 5	9 (0.40)	23 (2.59)	
	PE	6 (0.17)	< 5	9 (3.74)	14 (7.11)	< 5	< 5	12 (0.54)	20 (2.25)	
	ATE	15 (0.43)	18 (0.54)	31 (12.88)	40 (20.32)	< 5	< 5	31 (1.38)	110 (12.37)	
	IS	< 5	6 (0.18)	16 (6.65)	17 (8.64)	< 5	< 5	17 (0.76)	59 (6.64)	
	TIA	8 (0.23)	6 (0.18)	8 (3.32)	11 (5.59)	< 5	< 5	8 (0.36)	34 (3.82)	
	MI	5 (0.14)	6 (0.18)	8 (3.32)	16 (8.13)	< 5	< 5	7 (0.31)	26 (2.92)	
	HF	43 (1.24)	57 (1.71)	166 (68.96)	169 (85.85)	< 5	< 5	87 (3.88)	249 (28.01)	
	HS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	
	MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
	181 to 365 days	VTE	14 (0.40)	10 (0.30)	43 (17.86)	31 (15.75)	< 5	< 5	10 (0.45)	12 (1.35)
		DVT	< 5	6 (0.18)	16 (6.65)	18 (9.14)	< 5	< 5	5 (0.22)	8 (0.90)
		PE	11 (0.32)	< 5	31 (12.88)	14 (7.11)	< 5	< 5	5 (0.22)	< 5
		ATE	15 (0.43)	14 (0.42)	57 (23.68)	62 (31.49)	< 5	< 5	41 (1.83)	52 (5.85)
		IS	< 5	< 5	32 (13.29)	30 (15.24)	< 5	< 5	20 (0.89)	33 (3.71)
		TIA	10 (0.29)	< 5	16 (6.65)	24 (12.19)	< 5	< 5	11 (0.49)	13 (1.46)
		MI	< 5	7 (0.21)	14 (5.82)	16 (8.13)	< 5	< 5	10 (0.45)	8 (0.90)
		HF	52 (1.49)	38 (1.14)	278 (115.48)	244 (123.95)	< 5	< 5	82 (3.66)	149 (16.76)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	9 (1.01)
		MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
<b>Cohort 2</b>			<b>N = 1,976,163</b>	<b>N = 594,262</b>			<b>N = 584,309</b>	<b>N = 180,670</b>	<b>N = 433,111</b>	<b>N = 445,581</b>
	0 to 30 days	VTE	240 (1.21)	62 (1.04)			29 (0.50)	5 (0.28)	259 (5.98)	265 (5.95)
		DVT	39 (0.20)	18 (0.30)			7 (0.12)	< 5	63 (1.45)	96 (2.15)
		PE	205 (1.04)	45 (0.76)			23 (0.39)	< 5	215 (4.96)	189 (4.24)
		ATE	39 (0.20)	29 (0.49)			< 5	< 5	172 (3.97)	489 (10.97)
		IS	7 (0.04)	< 5			< 5	< 5	94 (2.17)	267 (5.99)
		TIA	6 (0.03)	11 (0.19)			< 5	< 5	17 (0.39)	90 (2.02)
		MI	26 (0.13)	16 (0.27)			< 5	< 5	65 (1.50)	163 (3.66)
		HF	50 (0.25)	43 (0.72)			6 (0.10)	< 5	380 (8.77)	1,137 (25.52)
		HS	6 (0.03)	< 5			< 5	< 5	18 (0.42)	61 (1.37)
		MP	11 (0.06)	< 5			< 5	< 5	14 (0.32)	22 (0.49)
	31 to 90 days	VTE	49 (0.25)	21 (0.35)			< 5	< 5	60 (1.39)	128 (2.87)
		DVT	26 (0.13)	7 (0.12)			< 5	< 5	33 (0.76)	81 (1.82)
		PE	26 (0.13)	14 (0.24)			< 5	< 5	34 (0.79)	56 (1.26)
		ATE	17 (0.09)	36 (0.61)			< 5	< 5	86 (1.99)	313 (7.02)
		IS	< 5	5 (0.08)			< 5	< 5	43 (0.99)	167 (3.75)
		TIA	< 5	9 (0.15)			< 5	< 5	24 (0.55)	86 (1.93)
		MI	11 (0.06)	22 (0.37)			< 5	< 5	26 (0.60)	80 (1.80)
		HF	27 (0.14)	35 (0.59)			< 5	< 5	137 (3.16)	554 (12.43)
		HS	< 5	< 5			< 5	< 5	7 (0.16)	19 (0.43)
		MP	6 (0.03)	< 5			< 5	< 5	< 5	< 5
	91 to 180 days	VTE	28 (0.14)	10 (0.17)			5 (0.09)	< 5	59 (1.36)	96 (2.15)
		DVT	12 (0.06)	6 (0.10)			< 5	< 5	32 (0.74)	59 (1.32)
		PE	16 (0.08)	5 (0.08)			< 5	< 5	30 (0.69)	45 (1.01)

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
		<b>ATE</b>	14 (0.07)	15 (0.25)			< 5	< 5	90 (2.08)	287 (6.44)
		<b>IS</b>	< 5	< 5			< 5	< 5	49 (1.13)	168 (3.77)
		<b>TIA</b>	7 (0.04)	5 (0.08)			< 5	< 5	21 (0.48)	76 (1.71)
		<b>MI</b>	8 (0.04)	10 (0.17)			< 5	< 5	23 (0.53)	63 (1.41)
		<b>HF</b>	19 (0.10)	25 (0.42)			< 5	< 5	110 (2.54)	472 (10.59)
		<b>HS</b>	< 5	< 5			< 5	< 5	7 (0.16)	34 (0.76)
		<b>MP</b>	< 5	< 5			< 5	< 5	7 (0.16)	< 5
	<b>181 to 365 days</b>	<b>VTE</b>	10 (0.05)	8 (0.13)			< 5	< 5	16 (0.37)	40 (0.90)
		<b>DVT</b>	< 5	< 5			< 5	< 5	10 (0.23)	26 (0.58)
		<b>PE</b>	8 (0.04)	7 (0.12)			< 5	< 5	8 (0.18)	16 (0.36)
		<b>ATE</b>	12 (0.06)	7 (0.12)			< 5	< 5	59 (1.36)	123 (2.76)
		<b>IS</b>	< 5	< 5			< 5	< 5	29 (0.67)	58 (1.30)
		<b>TIA</b>	< 5	< 5			< 5	< 5	18 (0.42)	39 (0.88)
		<b>MI</b>	9 (0.05)	< 5			< 5	< 5	14 (0.32)	32 (0.72)
		<b>HF</b>	23 (0.12)	12 (0.20)			< 5	< 5	73 (1.69)	212 (4.76)
		<b>HS</b>	< 5	< 5			< 5	< 5	6 (0.14)	12 (0.27)
		<b>MP</b>	< 5	< 5			< 5	< 5	< 5	< 5
<b>Cohort 3</b>			<b>N = 1,510,323</b>	<b>N = 54,102</b>			<b>N = 416,549</b>	<b>N = 36,748</b>	<b>N = 869,109</b>	<b>N = 706,435</b>
	<b>0 to 30 days</b>	<b>VTE</b>	244 (1.62)	< 5			28 (0.67)	< 5	321 (3.69)	114 (1.61)
		<b>DVT</b>	44 (0.29)	< 5			6 (0.14)	< 5	89 (1.02)	51 (0.72)
		<b>PE</b>	209 (1.38)	< 5			23 (0.55)	< 5	259 (2.98)	71 (1.01)
		<b>ATE</b>	29 (0.19)	< 5			< 5	< 5	211 (2.43)	197 (2.79)
		<b>IS</b>	< 5	< 5			< 5	< 5	102 (1.17)	95 (1.34)
		<b>TIA</b>	5 (0.03)	< 5			< 5	< 5	20 (0.23)	42 (0.59)
		<b>MI</b>	20 (0.13)	< 5			< 5	< 5	95 (1.09)	78 (1.10)
		<b>HF</b>	30 (0.20)	10 (1.85)			< 5	< 5	366 (4.21)	163 (2.31)
		<b>HS</b>	< 5	< 5			< 5	< 5	20 (0.23)	26 (0.37)
		<b>MP</b>	9 (0.06)	< 5			< 5	< 5	19 (0.22)	13 (0.18)
	<b>31 to 90 days</b>	<b>VTE</b>	44 (0.29)	< 5			< 5	< 5	84 (0.97)	65 (0.92)
		<b>DVT</b>	20 (0.13)	< 5			< 5	< 5	56 (0.64)	47 (0.67)
		<b>PE</b>	27 (0.18)	< 5			< 5	< 5	38 (0.44)	23 (0.33)
		<b>ATE</b>	11 (0.07)	< 5			< 5	< 5	107 (1.23)	144 (2.04)
		<b>IS</b>	< 5	< 5			< 5	< 5	53 (0.61)	55 (0.78)
		<b>TIA</b>	< 5	< 5			< 5	< 5	27 (0.31)	28 (0.40)



Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
	91 to 180 days	MI	9 (0.06)	< 5			< 5	< 5	35 (0.40)	69 (0.98)
		HF	15 (0.10)	< 5			< 5	< 5	139 (1.60)	111 (1.57)
		HS	< 5	< 5			< 5	< 5	7 (0.08)	14 (0.20)
		MP	8 (0.05)	< 5			< 5	< 5	8 (0.09)	9 (0.13)
		VTE	24 (0.16)	< 5			< 5	< 5	63 (0.72)	71 (1.01)
		DVT	11 (0.07)	< 5			< 5	< 5	35 (0.40)	45 (0.64)
		PE	14 (0.09)	< 5			< 5	< 5	32 (0.37)	27 (0.38)
		ATE	< 5	< 5			< 5	< 5	112 (1.29)	141 (2.00)
		IS	< 5	< 5			< 5	< 5	57 (0.66)	65 (0.92)
		TIA	< 5	< 5			< 5	< 5	22 (0.25)	29 (0.41)
		MI	< 5	< 5			< 5	< 5	36 (0.41)	53 (0.75)
		HF	10 (0.07)	< 5			< 5	< 5	121 (1.39)	100 (1.42)
		HS	< 5	< 5			< 5	< 5	9 (0.10)	10 (0.14)
		MP	< 5	< 5			< 5	< 5	7 (0.08)	9 (0.13)
	181 to 365 days	VTE	< 5	< 5			< 5	< 5	36 (0.41)	17 (0.24)
	DVT	< 5	< 5			< 5	< 5	22 (0.25)	14 (0.20)	
	PE	< 5	< 5			< 5	< 5	16 (0.18)	< 5	
	ATE	< 5	< 5			< 5	< 5	48 (0.55)	45 (0.64)	
	IS	< 5	< 5			< 5	< 5	23 (0.26)	17 (0.24)	
	TIA	< 5	< 5			< 5	< 5	9 (0.10)	7 (0.10)	
	MI	< 5	< 5			< 5	< 5	17 (0.20)	24 (0.34)	
	HF	5 (0.03)	< 5			< 5	< 5	61 (0.70)	31 (0.44)	
	HS	< 5	< 5			< 5	< 5	< 5	< 5	
	MP	< 5	< 5			< 5	< 5	< 5	< 5	
<b>Cohort 4</b>			<b>N = 2,014,161</b>	<b>N = 1,335,671</b>	<b>N = 147,553</b>	<b>N = 15,683</b>	<b>N = 465,326</b>	<b>N = 365,096</b>	<b>N = 1,068,043</b>	<b>N = 580,329</b>
0 to 30 days	VTE	328 (1.63)	20 (0.15)	116 (7.86)	< 5	36 (0.77)	< 5	350 (3.28)	66 (1.14)	
	DVT	52 (0.26)	9 (0.07)	22 (1.49)	< 5	6 (0.13)	< 5	107 (1.00)	35 (0.60)	
	PE	287 (1.42)	11 (0.08)	97 (6.57)	< 5	31 (0.67)	< 5	271 (2.54)	35 (0.60)	
	ATE	25 (0.12)	< 5	116 (7.86)	< 5	< 5	< 5	233 (2.18)	55 (0.95)	
	IS	< 5	< 5	69 (4.68)	< 5	< 5	< 5	114 (1.07)	29 (0.50)	
	TIA	6 (0.03)	< 5	18 (1.22)	< 5	< 5	< 5	28 (0.26)	7 (0.12)	
	MI	15 (0.07)	< 5	38 (2.58)	< 5	< 5	< 5	97 (0.91)	20 (0.34)	
	HF	26 (0.13)	< 5	362 (24.53)	8 (5.10)	< 5	< 5	369 (3.45)	44 (0.76)	
	HS	< 5	< 5	5 (0.34)	< 5	< 5	< 5	24 (0.22)	7 (0.12)	

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
31 to 90 days	MP	13 (0.06)	< 5	7 (0.47)	< 5	< 5	< 5	26 (0.24)	11 (0.19)	
	VTE	56 (0.28)	7 (0.05)	54 (3.66)	< 5	< 5	< 5	93 (0.87)	33 (0.57)	
	DVT	20 (0.10)	< 5	32 (2.17)	< 5	< 5	< 5	62 (0.58)	23 (0.40)	
	PE	39 (0.19)	< 5	26 (1.76)	< 5	< 5	< 5	41 (0.38)	11 (0.19)	
	ATE	13 (0.06)	< 5	46 (3.12)	< 5	< 5	< 5	115 (1.08)	51 (0.88)	
	IS	< 5	< 5	24 (1.63)	< 5	< 5	< 5	51 (0.48)	21 (0.36)	
	TIA	< 5	< 5	6 (0.41)	< 5	< 5	< 5	31 (0.29)	12 (0.21)	
	MI	9 (0.04)	< 5	19 (1.29)	< 5	< 5	< 5	41 (0.38)	21 (0.36)	
	HF	14 (0.07)	6 (0.04)	174 (11.79)	5 (3.19)	< 5	< 5	143 (1.34)	28 (0.48)	
	HS	< 5	< 5	< 5	< 5	< 5	< 5	10 (0.09)	5 (0.09)	
	MP	7 (0.03)	< 5	5 (0.34)	< 5	< 5	< 5	12 (0.11)	8 (0.14)	
91 to 180 days	VTE	24 (0.12)	9 (0.07)	49 (3.32)	< 5	< 5	< 5	77 (0.72)	45 (0.78)	
	DVT	11 (0.05)	7 (0.05)	31 (2.10)	< 5	< 5	< 5	42 (0.39)	28 (0.48)	
	PE	14 (0.07)	< 5	19 (1.29)	< 5	< 5	< 5	38 (0.36)	20 (0.34)	
	ATE	< 5	< 5	41 (2.78)	< 5	< 5	< 5	134 (1.25)	71 (1.22)	
	IS	< 5	< 5	19 (1.29)	< 5	< 5	< 5	66 (0.62)	37 (0.64)	
	TIA	< 5	< 5	12 (0.81)	< 5	< 5	< 5	31 (0.29)	14 (0.24)	
	MI	< 5	< 5	14 (0.95)	< 5	< 5	< 5	40 (0.37)	20 (0.34)	
	HF	9 (0.04)	< 5	208 (14.10)	< 5	< 5	< 5	145 (1.36)	35 (0.60)	
	HS	< 5	< 5	< 5	< 5	< 5	< 5	15 (0.14)	< 5	
	MP	< 5	< 5	5 (0.34)	< 5	< 5	< 5	13 (0.12)	< 5	
	181 to 365 days	VTE	< 5	< 5	77 (5.22)	5 (3.19)	< 5	< 5	52 (0.49)	10 (0.17)
DVT		< 5	< 5	46 (3.12)	< 5	< 5	< 5	36 (0.34)	8 (0.14)	
PE		< 5	< 5	35 (2.37)	< 5	< 5	< 5	18 (0.17)	< 5	
ATE		< 5	< 5	72 (4.88)	< 5	< 5	< 5	52 (0.49)	21 (0.36)	
IS		< 5	< 5	33 (2.24)	< 5	< 5	< 5	28 (0.26)	11 (0.19)	
TIA		< 5	< 5	18 (1.22)	< 5	< 5	< 5	10 (0.09)	< 5	
MI		< 5	< 5	27 (1.83)	< 5	< 5	< 5	15 (0.14)	9 (0.16)	
HF		< 5	< 5	298 (20.20)	5 (3.19)	< 5	< 5	58 (0.54)	8 (0.14)	
HS		< 5	< 5	8 (0.54)	< 5	< 5	< 5	5 (0.05)	< 5	
MP		< 5	< 5	5 (0.34)	< 5	< 5	< 5	6 (0.06)	< 5	

VTE = Venous thromboembolism (DVT + PE), DVT = Deep vein thrombosis, PE = Pulmonary embolism, ATE = Arterial thrombosis/thromboembolism (IS + TIA + MI), IS = Ischemic stroke, TIA = Transient ischemic attack, MI = Myocardial infarction, HF = Heart failure, HS = Hemorrhagic stroke, MP = Myocarditis or Pericarditis

**Table S32: Number of records (and risk per 10,000 individuals) for post COVID-19 cardiac and thromboembolic complications, across cohorts and databases, stratified by exposure status (BNT162b2 vaccine). Follow-up ends at first vaccine dose after index date.**

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
<b>Cohort 1</b>			<b>N = 348,052</b>	<b>N = 332,790</b>	<b>N = 24,073</b>	<b>N = 19,686</b>	<b>N = 169,459</b>	<b>N = 32,755</b>	<b>N = 223,960</b>	<b>N = 88,896</b>
	<b>0 to 30 days</b>	<b>VTE</b>	106 (3.05)	31 (0.93)	76 (31.57)	< 5	8 (0.47)	< 5	75 (3.35)	< 5
		<b>DVT</b>	21 (0.60)	8 (0.24)	14 (5.82)	< 5	< 5	< 5	20 (0.89)	< 5
		<b>PE</b>	90 (2.59)	24 (0.72)	64 (26.59)	< 5	6 (0.35)	< 5	60 (2.68)	< 5
		<b>ATE</b>	27 (0.78)	18 (0.54)	114 (47.36)	< 5	6 (0.35)	< 5	79 (3.53)	5 (0.56)
		<b>IS</b>	9 (0.26)	< 5	68 (28.25)	< 5	< 5	< 5	46 (2.05)	< 5
		<b>TIA</b>	5 (0.14)	< 5	22 (9.14)	< 5	< 5	< 5	7 (0.31)	< 5
		<b>MI</b>	14 (0.40)	14 (0.42)	34 (14.12)	< 5	< 5	< 5	28 (1.25)	< 5
		<b>HF</b>	59 (1.70)	45 (1.35)	393 (163.25)	20 (10.16)	9 (0.53)	< 5	299 (13.35)	23 (2.59)
		<b>HS</b>	< 5	< 5	< 5	< 5	< 5	< 5	7 (0.31)	< 5
		<b>MP</b>	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
	<b>31 to 90 days</b>	<b>VTE</b>	18 (0.52)	15 (0.45)	40 (16.62)	< 5	< 5	< 5	16 (0.71)	< 5
		<b>DVT</b>	9 (0.26)	< 5	19 (7.89)	< 5	< 5	< 5	10 (0.45)	< 5
		<b>PE</b>	9 (0.26)	11 (0.33)	24 (9.97)	< 5	< 5	< 5	6 (0.27)	< 5
		<b>ATE</b>	9 (0.26)	8 (0.24)	31 (12.88)	< 5	< 5	< 5	41 (1.83)	5 (0.56)
		<b>IS</b>	< 5	< 5	18 (7.48)	< 5	< 5	< 5	20 (0.89)	< 5
		<b>TIA</b>	5 (0.14)	< 5	7 (2.91)	< 5	< 5	< 5	13 (0.58)	< 5
		<b>MI</b>	5 (0.14)	< 5	11 (4.57)	< 5	< 5	< 5	11 (0.49)	< 5
		<b>HF</b>	32 (0.92)	36 (1.08)	151 (62.73)	11 (5.59)	< 5	< 5	87 (3.88)	8 (0.90)
		<b>HS</b>	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
		<b>MP</b>	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
	<b>91 to 180 days</b>	<b>VTE</b>	10 (0.29)	< 5	19 (7.89)	< 5	< 5	< 5	21 (0.94)	< 5
		<b>DVT</b>	< 5	< 5	11 (4.57)	< 5	< 5	< 5	9 (0.40)	< 5
		<b>PE</b>	6 (0.17)	< 5	9 (3.74)	< 5	< 5	< 5	12 (0.54)	< 5
		<b>ATE</b>	15 (0.43)	10 (0.30)	31 (12.88)	< 5	< 5	< 5	31 (1.38)	< 5
		<b>IS</b>	< 5	< 5	16 (6.65)	< 5	< 5	< 5	17 (0.76)	< 5
		<b>TIA</b>	8 (0.23)	< 5	8 (3.32)	< 5	< 5	< 5	8 (0.36)	< 5
		<b>MI</b>	5 (0.14)	< 5	8 (3.32)	< 5	< 5	< 5	7 (0.31)	< 5
		<b>HF</b>	43 (1.24)	32 (0.96)	166 (68.96)	14 (7.11)	< 5	< 5	87 (3.88)	6 (0.67)
		<b>HS</b>	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
		<b>MP</b>	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
	181 to 365 days	VTE	14 (0.40)	7 (0.21)	43 (17.86)	6 (3.05)	< 5	< 5	10 (0.45)	< 5
		DVT	< 5	< 5	16 (6.65)	< 5	< 5	< 5	5 (0.22)	< 5
		PE	11 (0.32)	< 5	31 (12.88)	< 5	< 5	< 5	5 (0.22)	< 5
		ATE	15 (0.43)	11 (0.33)	57 (23.68)	10 (5.08)	< 5	< 5	41 (1.83)	8 (0.90)
		IS	< 5	< 5	32 (13.29)	9 (4.57)	< 5	< 5	20 (0.89)	5 (0.56)
		TIA	10 (0.29)	< 5	16 (6.65)	< 5	< 5	< 5	11 (0.49)	< 5
		MI	< 5	6 (0.18)	14 (5.82)	< 5	< 5	< 5	10 (0.45)	< 5
		HF	52 (1.49)	35 (1.05)	278 (115.48)	37 (18.80)	< 5	< 5	82 (3.66)	20 (2.25)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
<b>Cohort 2</b>			<b>N = 1,976,163</b>	<b>N = 594,262</b>			<b>N = 584,309</b>	<b>N = 180,670</b>	<b>N = 433,111</b>	<b>N = 445,581</b>
	0 to 30 days	VTE	240 (1.21)	14 (0.24)			29 (0.50)	< 5	259 (5.98)	14 (0.31)
		DVT	39 (0.20)	6 (0.10)			7 (0.12)	< 5	63 (1.45)	< 5
		PE	205 (1.04)	8 (0.13)			23 (0.39)	< 5	215 (4.96)	12 (0.27)
		ATE	39 (0.20)	14 (0.24)			< 5	< 5	172 (3.97)	16 (0.36)
		IS	7 (0.04)	< 5			< 5	< 5	94 (2.17)	8 (0.18)
		TIA	6 (0.03)	< 5			< 5	< 5	17 (0.39)	< 5
		MI	26 (0.13)	8 (0.13)			< 5	< 5	65 (1.50)	5 (0.11)
		HF	50 (0.25)	15 (0.25)			6 (0.10)	< 5	380 (8.77)	56 (1.26)
		HS	6 (0.03)	< 5			< 5	< 5	18 (0.42)	< 5
		MP	11 (0.06)	< 5			< 5	< 5	14 (0.32)	< 5
	31 to 90 days	VTE	49 (0.25)	5 (0.08)			< 5	< 5	60 (1.39)	6 (0.13)
		DVT	26 (0.13)	< 5			< 5	< 5	33 (0.76)	< 5
		PE	26 (0.13)	< 5			< 5	< 5	34 (0.79)	< 5
ATE		17 (0.09)	9 (0.15)			< 5	< 5	86 (1.99)	7 (0.16)	
91 to 180 days	VTE	28 (0.14)	< 5			5 (0.09)	< 5	59 (1.36)	< 5	
	DVT	12 (0.06)	< 5			< 5	< 5	32 (0.74)	< 5	
	PE	16 (0.08)	< 5			< 5	< 5	30 (0.69)	< 5	

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP			
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated		
		ATE	14 (0.07)	5 (0.08)			< 5	< 5	90 (2.08)	10 (0.22)		
		IS	< 5	< 5			< 5	< 5	49 (1.13)	5 (0.11)		
		TIA	7 (0.04)	< 5			< 5	< 5	21 (0.48)	< 5		
		MI	8 (0.04)	< 5			< 5	< 5	23 (0.53)	< 5		
		HF	19 (0.10)	9 (0.15)			< 5	< 5	110 (2.54)	25 (0.56)		
		HS	< 5	< 5			< 5	< 5	7 (0.16)	< 5		
		MP	< 5	< 5			< 5	< 5	7 (0.16)	< 5		
	181 to 365 days	VTE	10 (0.05)	7 (0.12)			< 5	< 5	16 (0.37)	10 (0.22)		
		DVT	< 5	< 5			< 5	< 5	10 (0.23)	6 (0.13)		
		PE	8 (0.04)	5 (0.08)			< 5	< 5	8 (0.18)	< 5		
		ATE	12 (0.06)	6 (0.10)			< 5	< 5	59 (1.36)	19 (0.43)		
		IS	< 5	< 5			< 5	< 5	29 (0.67)	9 (0.20)		
		TIA	< 5	< 5			< 5	< 5	18 (0.42)	5 (0.11)		
		MI	9 (0.05)	< 5			< 5	< 5	14 (0.32)	5 (0.11)		
		HF	23 (0.12)	11 (0.19)			< 5	< 5	73 (1.69)	27 (0.61)		
		HS	< 5	< 5			< 5	< 5	6 (0.14)	< 5		
		MP	< 5	< 5			< 5	< 5	< 5	< 5		
		<b>Cohort 3</b>			<b>N = 1,510,323</b>	<b>N = 54,102</b>			<b>N = 416,549</b>	<b>N = 36,748</b>	<b>N = 869,109</b>	<b>N = 706,435</b>
		0 to 30 days	VTE	244 (1.62)	< 5			28 (0.67)	< 5	321 (3.69)	< 5	
			DVT	44 (0.29)	< 5			6 (0.14)	< 5	89 (1.02)	< 5	
PE	209 (1.38)		< 5			23 (0.55)	< 5	259 (2.98)	< 5			
ATE	29 (0.19)		< 5			< 5	< 5	211 (2.43)	< 5			
IS	< 5		< 5			< 5	< 5	102 (1.17)	< 5			
TIA	5 (0.03)		< 5			< 5	< 5	20 (0.23)	< 5			
MI	20 (0.13)		< 5			< 5	< 5	95 (1.09)	< 5			
HF	30 (0.20)		7 (1.29)			< 5	< 5	366 (4.21)	5 (0.07)			
HS	< 5		< 5			< 5	< 5	20 (0.23)	< 5			
MP	9 (0.06)		< 5			< 5	< 5	19 (0.22)	< 5			
31 to 90 days	VTE		44 (0.29)	< 5			< 5	< 5	84 (0.97)	< 5		
	DVT		20 (0.13)	< 5			< 5	< 5	56 (0.64)	< 5		
	PE		27 (0.18)	< 5			< 5	< 5	38 (0.44)	< 5		
	ATE	11 (0.07)	< 5			< 5	< 5	107 (1.23)	< 5			
	IS	< 5	< 5			< 5	< 5	53 (0.61)	< 5			
	TIA	< 5	< 5			< 5	< 5	27 (0.31)	< 5			

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP		
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	
	91 to 180 days	MI	9 (0.06)	< 5			< 5	< 5	35 (0.40)	< 5	
		HF	15 (0.10)	< 5			< 5	< 5	139 (1.60)	< 5	
		HS	< 5	< 5			< 5	< 5	7 (0.08)	< 5	
		MP	8 (0.05)	< 5			< 5	< 5	8 (0.09)	< 5	
		VTE	24 (0.16)	< 5			< 5	< 5	63 (0.72)	< 5	
		DVT	11 (0.07)	< 5			< 5	< 5	35 (0.40)	< 5	
		PE	14 (0.09)	< 5			< 5	< 5	32 (0.37)	< 5	
		ATE	< 5	< 5			< 5	< 5	112 (1.29)	6 (0.08)	
		IS	< 5	< 5			< 5	< 5	57 (0.66)	< 5	
		TIA	< 5	< 5			< 5	< 5	22 (0.25)	< 5	
		MI	< 5	< 5			< 5	< 5	36 (0.41)	< 5	
		HF	10 (0.07)	< 5			< 5	< 5	121 (1.39)	< 5	
	HS	< 5	< 5			< 5	< 5	9 (0.10)	< 5		
	MP	< 5	< 5			< 5	< 5	7 (0.08)	< 5		
	181 to 365 days	VTE	< 5	< 5			< 5	< 5	36 (0.41)	< 5	
		DVT	< 5	< 5			< 5	< 5	22 (0.25)	< 5	
		PE	< 5	< 5			< 5	< 5	16 (0.18)	< 5	
		ATE	< 5	< 5			< 5	< 5	48 (0.55)	6 (0.08)	
		IS	< 5	< 5			< 5	< 5	23 (0.26)	< 5	
		TIA	< 5	< 5			< 5	< 5	9 (0.10)	< 5	
		MI	< 5	< 5			< 5	< 5	17 (0.20)	< 5	
		HF	5 (0.03)	< 5			< 5	< 5	61 (0.70)	< 5	
		HS	< 5	< 5			< 5	< 5	< 5	< 5	
		MP	< 5	< 5			< 5	< 5	< 5	< 5	
<b>Cohort 4</b>				<b>N = 2,014,161</b>	<b>N = 1,335,671</b>	<b>N = 147,553</b>	<b>N = 15,683</b>	<b>N = 465,326</b>	<b>N = 365,096</b>	<b>N = 1,068,043</b>	<b>N = 580,329</b>
0 to 30 days		VTE	328 (1.63)	9 (0.07)	116 (7.86)	< 5	36 (0.77)	< 5	350 (3.28)	18 (0.31)	
	DVT	52 (0.26)	5 (0.04)	22 (1.49)	< 5	6 (0.13)	< 5	107 (1.00)	8 (0.14)		
	PE	287 (1.42)	< 5	97 (6.57)	< 5	31 (0.67)	< 5	271 (2.54)	10 (0.17)		
	ATE	25 (0.12)	< 5	116 (7.86)	< 5	< 5	< 5	233 (2.18)	9 (0.16)		
	IS	< 5	< 5	69 (4.68)	< 5	< 5	< 5	114 (1.07)	6 (0.10)		
	TIA	6 (0.03)	< 5	18 (1.22)	< 5	< 5	< 5	28 (0.26)	< 5		
	MI	15 (0.07)	< 5	38 (2.58)	< 5	< 5	< 5	97 (0.91)	< 5		
	HF	26 (0.13)	< 5	362 (24.53)	6 (3.83)	< 5	< 5	369 (3.45)	7 (0.12)		
	HS	< 5	< 5	5 (0.34)	< 5	< 5	< 5	24 (0.22)	< 5		

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
31 to 90 days	MP	13 (0.06)	< 5	7 (0.47)	< 5	< 5	< 5	26 (0.24)	< 5	
	VTE	56 (0.28)	< 5	54 (3.66)	< 5	< 5	< 5	93 (0.87)	6 (0.10)	
	DVT	20 (0.10)	< 5	32 (2.17)	< 5	< 5	< 5	62 (0.58)	< 5	
	PE	39 (0.19)	< 5	26 (1.76)	< 5	< 5	< 5	41 (0.38)	< 5	
	ATE	13 (0.06)	< 5	46 (3.12)	< 5	< 5	< 5	115 (1.08)	< 5	
	IS	< 5	< 5	24 (1.63)	< 5	< 5	< 5	51 (0.48)	< 5	
	TIA	< 5	< 5	6 (0.41)	< 5	< 5	< 5	31 (0.29)	< 5	
	MI	9 (0.04)	< 5	19 (1.29)	< 5	< 5	< 5	41 (0.38)	< 5	
	HF	14 (0.07)	6 (0.04)	174 (11.79)	< 5	< 5	< 5	143 (1.34)	< 5	
	HS	< 5	< 5	< 5	< 5	< 5	< 5	10 (0.09)	< 5	
91 to 180 days	MP	7 (0.03)	< 5	5 (0.34)	< 5	< 5	< 5	12 (0.11)	< 5	
	VTE	24 (0.12)	8 (0.06)	49 (3.32)	< 5	< 5	< 5	77 (0.72)	< 5	
	DVT	11 (0.05)	7 (0.05)	31 (2.10)	< 5	< 5	< 5	42 (0.39)	< 5	
	PE	14 (0.07)	< 5	19 (1.29)	< 5	< 5	< 5	38 (0.36)	< 5	
	ATE	< 5	< 5	41 (2.78)	< 5	< 5	< 5	134 (1.25)	9 (0.16)	
	IS	< 5	< 5	19 (1.29)	< 5	< 5	< 5	66 (0.62)	7 (0.12)	
	TIA	< 5	< 5	12 (0.81)	< 5	< 5	< 5	31 (0.29)	< 5	
	MI	< 5	< 5	14 (0.95)	< 5	< 5	< 5	40 (0.37)	< 5	
	HF	9 (0.04)	< 5	208 (14.10)	< 5	< 5	< 5	145 (1.36)	9 (0.16)	
	HS	< 5	< 5	< 5	< 5	< 5	< 5	15 (0.14)	< 5	
181 to 365 days	MP	< 5	< 5	5 (0.34)	< 5	< 5	< 5	13 (0.12)	< 5	
	VTE	< 5	< 5	77 (5.22)	5 (3.19)	< 5	< 5	52 (0.49)	7 (0.12)	
	DVT	< 5	< 5	46 (3.12)	< 5	< 5	< 5	36 (0.34)	5 (0.09)	
	PE	< 5	< 5	35 (2.37)	< 5	< 5	< 5	18 (0.17)	< 5	
	ATE	< 5	< 5	72 (4.88)	< 5	< 5	< 5	52 (0.49)	15 (0.26)	
	IS	< 5	< 5	33 (2.24)	< 5	< 5	< 5	28 (0.26)	10 (0.17)	
	TIA	< 5	< 5	18 (1.22)	< 5	< 5	< 5	10 (0.09)	< 5	
	MI	< 5	< 5	27 (1.83)	< 5	< 5	< 5	15 (0.14)	5 (0.09)	
	HF	< 5	< 5	298 (20.20)	< 5	< 5	< 5	58 (0.54)	< 5	
	HS	< 5	< 5	8 (0.54)	< 5	< 5	< 5	5 (0.05)	< 5	
MP	< 5	< 5	5 (0.34)	< 5	< 5	< 5	6 (0.06)	< 5		

VTE = Venous thromboembolism (DVT + PE), DVT = Deep vein thrombosis, PE = Pulmonary embolism, ATE = Arterial thrombosis/thromboembolism (IS + TIA + MI), IS = Ischemic stroke, TIA = Transient ischemic attack, MI = Myocardial infarction, HF = Heart failure, HS = Hemorrhagic stroke, MP = Myocarditis or Pericarditis

**Table S33: Number of records (and risk per 10,000 individuals) for post COVID-19 cardiac and thromboembolic complications, across cohorts and databases, stratified by exposure status (BNT162b2 vaccine). Only first outcome after COVID-19 captured.**

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
<b>Cohort 1</b>			<b>N = 348,052</b>	<b>N = 332,790</b>	<b>N = 24,073</b>	<b>N = 19,686</b>	<b>N = 169,459</b>	<b>N = 32,755</b>	<b>N = 223,960</b>	<b>N = 88,896</b>
0 to 30 days	VTE	106 (3.05)	76 (2.28)	76 (31.57)	40 (20.32)	8 (0.47)	< 5	75 (3.35)	94 (10.57)	
	DVT	21 (0.60)	15 (0.45)	14 (5.82)	13 (6.60)	< 5	< 5	20 (0.89)	29 (3.26)	
	PE	90 (2.59)	64 (1.92)	64 (26.59)	28 (14.22)	6 (0.35)	< 5	60 (2.68)	75 (8.44)	
	ATE	27 (0.78)	45 (1.35)	114 (47.36)	61 (30.99)	6 (0.35)	< 5	79 (3.53)	206 (23.17)	
	IS	9 (0.26)	5 (0.15)	68 (28.25)	26 (13.21)	< 5	< 5	46 (2.05)	116 (13.05)	
	TIA	5 (0.14)	11 (0.33)	22 (9.14)	15 (7.62)	< 5	< 5	7 (0.31)	41 (4.61)	
	MI	14 (0.40)	29 (0.87)	34 (14.12)	27 (13.72)	< 5	< 5	28 (1.25)	61 (6.86)	
	HF	59 (1.70)	126 (3.79)	393 (163.25)	231 (117.34)	9 (0.53)	< 5	299 (13.35)	634 (71.32)	
	HS	< 5	< 5	< 5	< 5	< 5	< 5	7 (0.31)	14 (1.57)	
	MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	
31 to 90 days	VTE	18 (0.52)	25 (0.75)	37 (15.37)	23 (11.68)	< 5	< 5	15 (0.67)	43 (4.84)	
	DVT	9 (0.26)	7 (0.21)	18 (7.48)	13 (6.60)	< 5	< 5	9 (0.40)	28 (3.15)	
	PE	9 (0.26)	18 (0.54)	22 (9.14)	10 (5.08)	< 5	< 5	6 (0.27)	19 (2.14)	
	ATE	9 (0.26)	23 (0.69)	27 (11.22)	33 (16.76)	< 5	< 5	39 (1.74)	125 (14.06)	
	IS	< 5	< 5	15 (6.23)	13 (6.60)	< 5	< 5	20 (0.89)	69 (7.76)	
	TIA	5 (0.14)	10 (0.30)	7 (2.91)	14 (7.11)	< 5	< 5	13 (0.58)	32 (3.60)	
	MI	5 (0.14)	11 (0.33)	9 (3.74)	8 (4.06)	< 5	< 5	9 (0.40)	28 (3.15)	
	HF	32 (0.92)	70 (2.10)	136 (56.49)	135 (68.58)	< 5	< 5	83 (3.71)	288 (32.40)	
	HS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	12 (1.35)	
	MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	
91 to 180 days	VTE	10 (0.29)	< 5	14 (5.82)	22 (11.18)	< 5	< 5	19 (0.85)	35 (3.94)	
	DVT	< 5	< 5	6 (2.49)	11 (5.59)	< 5	< 5	7 (0.31)	19 (2.14)	
	PE	6 (0.17)	< 5	9 (3.74)	12 (6.10)	< 5	< 5	12 (0.54)	18 (2.02)	
	ATE	15 (0.43)	18 (0.54)	29 (12.05)	35 (17.78)	< 5	< 5	26 (1.16)	102 (11.47)	
	IS	< 5	6 (0.18)	14 (5.82)	14 (7.11)	< 5	< 5	14 (0.63)	56 (6.30)	
	TIA	8 (0.23)	6 (0.18)	8 (3.32)	10 (5.08)	< 5	< 5	7 (0.31)	33 (3.71)	
	MI	5 (0.14)	6 (0.18)	8 (3.32)	15 (7.62)	< 5	< 5	6 (0.27)	22 (2.47)	
	HF	40 (1.15)	54 (1.62)	147 (61.06)	159 (80.77)	< 5	< 5	81 (3.62)	226 (25.42)	
	HS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	
	MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	



Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
181 to 365 days	VTE	VTE	11 (0.32)	10 (0.30)	27 (11.22)	24 (12.19)	< 5	< 5	5 (0.22)	10 (1.12)
		DVT	< 5	6 (0.18)	10 (4.15)	14 (7.11)	< 5	< 5	< 5	7 (0.79)
		PE	9 (0.26)	< 5	21 (8.72)	11 (5.59)	< 5	< 5	< 5	< 5
		ATE	14 (0.40)	14 (0.42)	47 (19.52)	58 (29.46)	< 5	< 5	34 (1.52)	38 (4.27)
		IS	< 5	< 5	26 (10.80)	27 (13.72)	< 5	< 5	17 (0.76)	23 (2.59)
		TIA	9 (0.26)	< 5	15 (6.23)	24 (12.19)	< 5	< 5	10 (0.45)	9 (1.01)
		MI	< 5	7 (0.21)	10 (4.15)	12 (6.10)	< 5	< 5	7 (0.31)	7 (0.79)
		HF	47 (1.35)	35 (1.05)	226 (93.88)	223 (113.28)	< 5	< 5	70 (3.13)	117 (13.16)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	7 (0.79)
		MP	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
<b>Cohort 2</b>			<b>N = 1,976,163</b>	<b>N = 594,262</b>			<b>N = 584,309</b>	<b>N = 180,670</b>	<b>N = 433,111</b>	<b>N = 445,581</b>
0 to 30 days	VTE	VTE	240 (1.21)	62 (1.04)			29 (0.50)	5 (0.28)	259 (5.98)	265 (5.95)
		DVT	39 (0.20)	18 (0.30)			7 (0.12)	< 5	63 (1.45)	96 (2.15)
		PE	205 (1.04)	45 (0.76)			23 (0.39)	< 5	215 (4.96)	189 (4.24)
		ATE	39 (0.20)	29 (0.49)			< 5	< 5	172 (3.97)	489 (10.97)
		IS	7 (0.04)	< 5			< 5	< 5	94 (2.17)	267 (5.99)
		TIA	6 (0.03)	11 (0.19)			< 5	< 5	17 (0.39)	90 (2.02)
		MI	26 (0.13)	16 (0.27)			< 5	< 5	65 (1.50)	163 (3.66)
		HF	50 (0.25)	43 (0.72)			6 (0.10)	< 5	380 (8.77)	1,137 (25.52)
		HS	6 (0.03)	< 5			< 5	< 5	18 (0.42)	61 (1.37)
		MP	11 (0.06)	< 5			< 5	< 5	14 (0.32)	22 (0.49)
31 to 90 days	VTE	VTE	46 (0.23)	21 (0.35)			< 5	< 5	57 (1.32)	123 (2.76)
		DVT	25 (0.13)	7 (0.12)			< 5	< 5	31 (0.72)	77 (1.73)
		PE	24 (0.12)	14 (0.24)			< 5	< 5	32 (0.74)	55 (1.23)
		ATE	17 (0.09)	36 (0.61)			< 5	< 5	84 (1.94)	307 (6.89)
		IS	< 5	5 (0.08)			< 5	< 5	43 (0.99)	162 (3.64)
		TIA	< 5	9 (0.15)			< 5	< 5	24 (0.55)	85 (1.91)
		MI	11 (0.06)	22 (0.37)			< 5	< 5	24 (0.55)	79 (1.77)
		HF	27 (0.14)	34 (0.57)			< 5	< 5	131 (3.02)	534 (11.98)
		HS	< 5	< 5			< 5	< 5	7 (0.16)	19 (0.43)
		MP	6 (0.03)	< 5			< 5	< 5	< 5	< 5
91 to 180 days	VTE	VTE	25 (0.13)	9 (0.15)			5 (0.09)	< 5	53 (1.22)	84 (1.89)
		DVT	11 (0.06)	6 (0.10)			< 5	< 5	29 (0.67)	52 (1.17)
		PE	14 (0.07)	< 5			< 5	< 5	27 (0.62)	39 (0.88)

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
		<b>ATE</b>	13 (0.07)	15 (0.25)			< 5	< 5	80 (1.85)	265 (5.95)
		<b>IS</b>	< 5	< 5			< 5	< 5	43 (0.99)	148 (3.32)
		<b>TIA</b>	7 (0.04)	5 (0.08)			< 5	< 5	19 (0.44)	72 (1.62)
		<b>MI</b>	7 (0.04)	10 (0.17)			< 5	< 5	21 (0.48)	62 (1.39)
		<b>HF</b>	19 (0.10)	24 (0.40)			< 5	< 5	101 (2.33)	438 (9.83)
		<b>HS</b>	< 5	< 5			< 5	< 5	7 (0.16)	33 (0.74)
		<b>MP</b>	< 5	< 5			< 5	< 5	7 (0.16)	< 5
	<b>181 to 365 days</b>	<b>VTE</b>	9 (0.05)	8 (0.13)			< 5	< 5	15 (0.35)	30 (0.67)
		<b>DVT</b>	< 5	< 5			< 5	< 5	9 (0.21)	20 (0.45)
		<b>PE</b>	7 (0.04)	7 (0.12)			< 5	< 5	8 (0.18)	12 (0.27)
		<b>ATE</b>	9 (0.05)	7 (0.12)			< 5	< 5	50 (1.15)	103 (2.31)
		<b>IS</b>	< 5	< 5			< 5	< 5	25 (0.58)	51 (1.14)
		<b>TIA</b>	< 5	< 5			< 5	< 5	16 (0.37)	29 (0.65)
		<b>MI</b>	7 (0.04)	< 5			< 5	< 5	11 (0.25)	29 (0.65)
		<b>HF</b>	22 (0.11)	12 (0.20)			< 5	< 5	63 (1.45)	178 (3.99)
		<b>HS</b>	< 5	< 5			< 5	< 5	5 (0.12)	9 (0.20)
		<b>MP</b>	< 5	< 5			< 5	< 5	< 5	< 5
<b>Cohort 3</b>			<b>N = 1,510,323</b>	<b>N = 54,102</b>			<b>N = 416,549</b>	<b>N = 36,748</b>	<b>N = 869,109</b>	<b>N = 706,435</b>
	<b>0 to 30 days</b>	<b>VTE</b>	244 (1.62)	< 5			28 (0.67)	< 5	321 (3.69)	114 (1.61)
		<b>DVT</b>	44 (0.29)	< 5			6 (0.14)	< 5	89 (1.02)	51 (0.72)
		<b>PE</b>	209 (1.38)	< 5			23 (0.55)	< 5	259 (2.98)	71 (1.01)
		<b>ATE</b>	29 (0.19)	< 5			< 5	< 5	211 (2.43)	197 (2.79)
		<b>IS</b>	< 5	< 5			< 5	< 5	102 (1.17)	95 (1.34)
		<b>TIA</b>	5 (0.03)	< 5			< 5	< 5	20 (0.23)	42 (0.59)
		<b>MI</b>	20 (0.13)	< 5			< 5	< 5	95 (1.09)	78 (1.10)
		<b>HF</b>	30 (0.20)	10 (1.85)			< 5	< 5	366 (4.21)	163 (2.31)
		<b>HS</b>	< 5	< 5			< 5	< 5	20 (0.23)	26 (0.37)
		<b>MP</b>	9 (0.06)	< 5			< 5	< 5	19 (0.22)	13 (0.18)
	<b>31 to 90 days</b>	<b>VTE</b>	41 (0.27)	< 5			< 5	< 5	80 (0.92)	63 (0.89)
		<b>DVT</b>	19 (0.13)	< 5			< 5	< 5	53 (0.61)	47 (0.67)
		<b>PE</b>	25 (0.17)	< 5			< 5	< 5	36 (0.41)	21 (0.30)
		<b>ATE</b>	11 (0.07)	< 5			< 5	< 5	106 (1.22)	142 (2.01)
		<b>IS</b>	< 5	< 5			< 5	< 5	53 (0.61)	54 (0.76)
		<b>TIA</b>	< 5	< 5			< 5	< 5	27 (0.31)	27 (0.38)

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDIAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
	91 to 180 days	MI	9 (0.06)	< 5			< 5	< 5	34 (0.39)	69 (0.98)
		HF	15 (0.10)	< 5			< 5	< 5	132 (1.52)	108 (1.53)
		HS	< 5	< 5			< 5	< 5	7 (0.08)	14 (0.20)
		MP	8 (0.05)	< 5			< 5	< 5	8 (0.09)	9 (0.13)
		VTE	23 (0.15)	< 5			< 5	< 5	56 (0.64)	67 (0.95)
		DVT	10 (0.07)	< 5			< 5	< 5	32 (0.37)	43 (0.61)
		PE	14 (0.09)	< 5			< 5	< 5	28 (0.32)	25 (0.35)
		ATE	< 5	< 5			< 5	< 5	101 (1.16)	137 (1.94)
		IS	< 5	< 5			< 5	< 5	49 (0.56)	62 (0.88)
		TIA	< 5	< 5			< 5	< 5	20 (0.23)	28 (0.40)
		MI	< 5	< 5			< 5	< 5	34 (0.39)	53 (0.75)
		HF	10 (0.07)	< 5			< 5	< 5	110 (1.27)	97 (1.37)
		HS	< 5	< 5			< 5	< 5	9 (0.10)	10 (0.14)
		MP	< 5	< 5			< 5	< 5	7 (0.08)	9 (0.13)
	181 to 365 days	VTE	< 5	< 5			< 5	< 5	33 (0.38)	13 (0.18)
	DVT	< 5	< 5			< 5	< 5	20 (0.23)	11 (0.16)	
	PE	< 5	< 5			< 5	< 5	15 (0.17)	< 5	
	ATE	< 5	< 5			< 5	< 5	39 (0.45)	36 (0.51)	
	IS	< 5	< 5			< 5	< 5	18 (0.21)	13 (0.18)	
	TIA	< 5	< 5			< 5	< 5	8 (0.09)	5 (0.07)	
	MI	< 5	< 5			< 5	< 5	14 (0.16)	21 (0.30)	
	HF	5 (0.03)	< 5			< 5	< 5	53 (0.61)	25 (0.35)	
	HS	< 5	< 5			< 5	< 5	< 5	< 5	
	MP	< 5	< 5			< 5	< 5	< 5	< 5	
<b>Cohort 4</b>			<b>N = 2,014,161</b>	<b>N = 1,335,671</b>	<b>N = 147,553</b>	<b>N = 15,683</b>	<b>N = 465,326</b>	<b>N = 365,096</b>	<b>N = 1,068,043</b>	<b>N = 580,329</b>
0 to 30 days	VTE	328 (1.63)	20 (0.15)	116 (7.86)	< 5	36 (0.77)	< 5	350 (3.28)	66 (1.14)	
	DVT	52 (0.26)	9 (0.07)	22 (1.49)	< 5	6 (0.13)	< 5	107 (1.00)	35 (0.60)	
	PE	287 (1.42)	11 (0.08)	97 (6.57)	< 5	31 (0.67)	< 5	271 (2.54)	35 (0.60)	
	ATE	25 (0.12)	< 5	116 (7.86)	< 5	< 5	< 5	233 (2.18)	55 (0.95)	
	IS	< 5	< 5	69 (4.68)	< 5	< 5	< 5	114 (1.07)	29 (0.50)	
	TIA	6 (0.03)	< 5	18 (1.22)	< 5	< 5	< 5	28 (0.26)	7 (0.12)	
	MI	15 (0.07)	< 5	38 (2.58)	< 5	< 5	< 5	97 (0.91)	20 (0.34)	
	HF	26 (0.13)	< 5	362 (24.53)	8 (5.10)	< 5	< 5	369 (3.45)	44 (0.76)	
	HS	< 5	< 5	5 (0.34)	< 5	< 5	< 5	24 (0.22)	7 (0.12)	

Cohort	Time window	Outcome	AURUM		CORIVA		GOLD		SIDAP	
			Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Vaccinated
31 to 90 days		MP	13 (0.06)	< 5	7 (0.47)	< 5	< 5	< 5	26 (0.24)	11 (0.19)
		VTE	53 (0.26)	7 (0.05)	49 (3.32)	< 5	< 5	< 5	88 (0.82)	32 (0.55)
		DVT	19 (0.09)	< 5	29 (1.97)	< 5	< 5	< 5	58 (0.54)	23 (0.40)
		PE	37 (0.18)	< 5	23 (1.56)	< 5	< 5	< 5	39 (0.37)	10 (0.17)
		ATE	13 (0.06)	< 5	43 (2.91)	< 5	< 5	< 5	114 (1.07)	51 (0.88)
		IS	< 5	< 5	22 (1.49)	< 5	< 5	< 5	51 (0.48)	21 (0.36)
		TIA	< 5	< 5	6 (0.41)	< 5	< 5	< 5	31 (0.29)	12 (0.21)
		MI	9 (0.04)	< 5	17 (1.15)	< 5	< 5	< 5	40 (0.37)	21 (0.36)
		HF	14 (0.07)	6 (0.04)	160 (10.84)	5 (3.19)	< 5	< 5	136 (1.27)	28 (0.48)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	10 (0.09)	5 (0.09)
		MP	7 (0.03)	< 5	< 5	< 5	< 5	< 5	12 (0.11)	8 (0.14)
91 to 180 days		VTE	23 (0.11)	9 (0.07)	40 (2.71)	< 5	< 5	< 5	71 (0.66)	40 (0.69)
		DVT	10 (0.05)	7 (0.05)	25 (1.69)	< 5	< 5	< 5	40 (0.37)	25 (0.43)
		PE	14 (0.07)	< 5	16 (1.08)	< 5	< 5	< 5	34 (0.32)	18 (0.31)
		ATE	< 5	< 5	38 (2.58)	< 5	< 5	< 5	122 (1.14)	68 (1.17)
		IS	< 5	< 5	18 (1.22)	< 5	< 5	< 5	58 (0.54)	34 (0.59)
		TIA	< 5	< 5	12 (0.81)	< 5	< 5	< 5	28 (0.26)	14 (0.24)
		MI	< 5	< 5	12 (0.81)	< 5	< 5	< 5	38 (0.36)	20 (0.34)
		HF	9 (0.04)	< 5	187 (12.67)	< 5	< 5	< 5	132 (1.24)	35 (0.60)
		HS	< 5	< 5	< 5	< 5	< 5	< 5	14 (0.13)	< 5
		MP	< 5	< 5	< 5	< 5	< 5	< 5	13 (0.12)	< 5
	181 to 365 days		VTE	< 5	< 5	53 (3.59)	< 5	< 5	< 5	44 (0.41)
		DVT	< 5	< 5	33 (2.24)	< 5	< 5	< 5	31 (0.29)	6 (0.10)
		PE	< 5	< 5	23 (1.56)	< 5	< 5	< 5	15 (0.14)	< 5
		ATE	< 5	< 5	63 (4.27)	< 5	< 5	< 5	41 (0.38)	9 (0.16)
		IS	< 5	< 5	29 (1.97)	< 5	< 5	< 5	20 (0.19)	6 (0.10)
		TIA	< 5	< 5	18 (1.22)	< 5	< 5	< 5	9 (0.08)	< 5
		MI	< 5	< 5	21 (1.42)	< 5	< 5	< 5	13 (0.12)	< 5
		HF	< 5	< 5	240 (16.27)	< 5	< 5	< 5	49 (0.46)	5 (0.09)
		HS	< 5	< 5	8 (0.54)	< 5	< 5	< 5	5 (0.05)	< 5
		MP	< 5	< 5	< 5	< 5	< 5	< 5	6 (0.06)	< 5

VTE = Venous thromboembolism (DVT + PE), DVT = Deep vein thrombosis, PE = Pulmonary embolism, ATE = Arterial thrombosis/thromboembolism (IS + TIA + MI), IS = Ischemic stroke, TIA = Transient ischemic attack, MI = Myocardial infarction, HF = Heart failure, HS = Hemorrhagic stroke, MP = Myocarditis or Pericarditis

**Table S34: Number of records (and risk per 10,000 individuals) for post COVID-19 cardiac and thromboembolic complications, across cohorts and databases, stratified by vaccine (BNT162b2 - ChAdOx1).**

Cohort	Time window	Outcome	AURUM		GOLD	
			BNT162b2	ChAdOx1	BNT162b2	ChAdOx1
<b>Cohort 1</b>			<b>N = 332,790</b>	<b>N = 219,804</b>	<b>N = 32,755</b>	<b>N = 82,406</b>
	<b>0 to 30 days</b>	<b>VTE</b>	76 (2.28)	41 (1.87)	< 5	< 5
		<b>DVT</b>	15 (0.45)	12 (0.55)	< 5	< 5
		<b>PE</b>	64 (1.92)	31 (1.41)	< 5	< 5
		<b>ATE</b>	45 (1.35)	25 (1.14)	< 5	6 (0.73)
		<b>IS</b>	5 (0.15)	< 5	< 5	< 5
		<b>TIA</b>	11 (0.33)	7 (0.32)	< 5	< 5
		<b>MI</b>	29 (0.87)	17 (0.77)	< 5	< 5
		<b>HF</b>	126 (3.79)	72 (3.28)	< 5	5 (0.61)
		<b>HS</b>	< 5	< 5	< 5	< 5
		<b>MP</b>	< 5	< 5	< 5	< 5
	<b>31 to 90 days</b>	<b>VTE</b>	26 (0.78)	14 (0.64)	< 5	< 5
		<b>DVT</b>	7 (0.21)	8 (0.36)	< 5	< 5
		<b>PE</b>	19 (0.57)	7 (0.32)	< 5	< 5
		<b>ATE</b>	23 (0.69)	20 (0.91)	< 5	< 5
		<b>IS</b>	< 5	< 5	< 5	< 5
		<b>TIA</b>	10 (0.30)	9 (0.41)	< 5	< 5
		<b>MI</b>	11 (0.33)	9 (0.41)	< 5	< 5
		<b>HF</b>	71 (2.13)	42 (1.91)	< 5	5 (0.61)
		<b>HS</b>	< 5	< 5	< 5	< 5
		<b>MP</b>	< 5	< 5	< 5	< 5
	<b>91 to 180 days</b>	<b>VTE</b>	6 (0.18)	15 (0.68)	< 5	< 5
		<b>DVT</b>	< 5	5 (0.23)	< 5	< 5
		<b>PE</b>	< 5	10 (0.45)	< 5	< 5
		<b>ATE</b>	18 (0.54)	10 (0.45)	< 5	6 (0.73)
		<b>IS</b>	6 (0.18)	< 5	< 5	< 5
		<b>TIA</b>	6 (0.18)	6 (0.27)	< 5	< 5
		<b>MI</b>	6 (0.18)	< 5	< 5	5 (0.61)
		<b>HF</b>	57 (1.71)	38 (1.73)	< 5	< 5
		<b>HS</b>	< 5	< 5	< 5	< 5
		<b>MP</b>	< 5	< 5	< 5	< 5

Cohort	Time window	Outcome	AURUM		GOLD	
			BNT162b2	ChAdOx1	BNT162b2	ChAdOx1
	181 to 365 days	VTE	10 (0.30)	< 5	< 5	< 5
		DVT	6 (0.18)	< 5	< 5	< 5
		PE	< 5	< 5	< 5	< 5
		ATE	14 (0.42)	9 (0.41)	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5
		MI	7 (0.21)	< 5	< 5	< 5
		HF	38 (1.14)	20 (0.91)	< 5	5 (0.61)
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
<b>Cohort 2</b>			<b>N = 594,262</b>	<b>N = 969,262</b>	<b>N = 180,670</b>	<b>N = 302,999</b>
	0 to 30 days	VTE	62 (1.04)	158 (1.63)	5 (0.28)	19 (0.63)
		DVT	18 (0.30)	47 (0.48)	< 5	< 5
		PE	45 (0.76)	120 (1.24)	< 5	15 (0.50)
		ATE	29 (0.49)	75 (0.77)	< 5	< 5
		IS	< 5	12 (0.12)	< 5	< 5
		TIA	11 (0.19)	13 (0.13)	< 5	< 5
		MI	16 (0.27)	52 (0.54)	< 5	< 5
		HF	43 (0.72)	103 (1.06)	< 5	11 (0.36)
		HS	< 5	< 5	< 5	< 5
		MP	< 5	6 (0.06)	< 5	< 5
	31 to 90 days	VTE	21 (0.35)	55 (0.57)	< 5	9 (0.30)
		DVT	7 (0.12)	25 (0.26)	< 5	5 (0.17)
		PE	14 (0.24)	32 (0.33)	< 5	< 5
		ATE	36 (0.61)	57 (0.59)	< 5	5 (0.17)
		IS	5 (0.08)	6 (0.06)	< 5	< 5
		TIA	9 (0.15)	25 (0.26)	< 5	< 5
		MI	22 (0.37)	28 (0.29)	< 5	< 5
		HF	35 (0.59)	68 (0.70)	< 5	7 (0.23)
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
	91 to 180 days	VTE	10 (0.17)	30 (0.31)	< 5	< 5
		DVT	6 (0.10)	16 (0.17)	< 5	< 5
		PE	5 (0.08)	16 (0.17)	< 5	< 5

Cohort	Time window	Outcome	AURUM		GOLD	
			BNT162b2	ChAdOx1	BNT162b2	ChAdOx1
		ATE	15 (0.25)	28 (0.29)	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	5 (0.08)	13 (0.13)	< 5	< 5
		MI	10 (0.17)	15 (0.15)	< 5	< 5
		HF	25 (0.42)	44 (0.45)	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
	181 to 365 days	VTE	8 (0.13)	5 (0.05)	< 5	< 5
		DVT	< 5	< 5	< 5	< 5
		PE	7 (0.12)	< 5	< 5	< 5
		ATE	7 (0.12)	11 (0.11)	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5
		MI	< 5	7 (0.07)	< 5	< 5
		HF	12 (0.20)	23 (0.24)	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
<b>Cohort 3</b>			<b>N = 54,102</b>	<b>N = 1,473,602</b>	<b>N = 36,748</b>	<b>N = 423,876</b>
	0 to 30 days	VTE	< 5	139 (0.94)	< 5	16 (0.38)
		DVT	< 5	41 (0.28)	< 5	< 5
		PE	< 5	101 (0.69)	< 5	12 (0.28)
		ATE	< 5	47 (0.32)	< 5	12 (0.28)
		IS	< 5	5 (0.03)	< 5	< 5
		TIA	< 5	16 (0.11)	< 5	< 5
		MI	< 5	26 (0.18)	< 5	9 (0.21)
		HF	10 (1.85)	28 (0.19)	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	6 (0.04)	< 5	< 5
	31 to 90 days	VTE	< 5	44 (0.30)	< 5	7 (0.17)
		DVT	< 5	26 (0.18)	< 5	< 5
		PE	< 5	18 (0.12)	< 5	< 5
		ATE	< 5	31 (0.21)	< 5	7 (0.17)
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	13 (0.09)	< 5	< 5

Cohort	Time window	Outcome	AURUM		GOLD		
			BNT162b2	ChAdOx1	BNT162b2	ChAdOx1	
	91 to 180 days	MI	< 5	16 (0.11)	< 5	< 5	
		HF	< 5	23 (0.16)	< 5	< 5	
		HS	< 5	< 5	< 5	< 5	
		MP	< 5	7 (0.05)	< 5	< 5	
		VTE	< 5	26 (0.18)	< 5	< 5	
		DVT	< 5	15 (0.10)	< 5	< 5	
		PE	< 5	14 (0.10)	< 5	< 5	
		ATE	< 5	26 (0.18)	< 5	< 5	
		IS	< 5	< 5	< 5	< 5	
		TIA	< 5	8 (0.05)	< 5	< 5	
		MI	< 5	17 (0.12)	< 5	< 5	
		HF	< 5	12 (0.08)	< 5	< 5	
		HS	< 5	< 5	< 5	< 5	
		MP	< 5	< 5	< 5	< 5	
	181 to 365 days	VTE	< 5	11 (0.07)	< 5	< 5	
	DVT	< 5	5 (0.03)	< 5	< 5		
	PE	< 5	7 (0.05)	< 5	< 5		
	ATE	< 5	< 5	< 5	< 5		
	IS	< 5	< 5	< 5	< 5		
	TIA	< 5	< 5	< 5	< 5		
	MI	< 5	< 5	< 5	< 5		
	HF	< 5	< 5	< 5	< 5		
	HS	< 5	< 5	< 5	< 5		
	MP	< 5	< 5	< 5	< 5		
	<b>Cohort 4</b>			<b>N = 1,335,671</b>	<b>N = 542,670</b>	<b>N = 365,096</b>	<b>N = 147,744</b>
	0 to 30 days	VTE	20 (0.15)	27 (0.50)	< 5	8 (0.54)	
DVT		9 (0.07)	7 (0.13)	< 5	< 5		
PE		11 (0.08)	21 (0.39)	< 5	6 (0.41)		
ATE		< 5	5 (0.09)	< 5	< 5		
IS		< 5	< 5	< 5	< 5		
TIA		< 5	< 5	< 5	< 5		
MI		< 5	< 5	< 5	< 5		
HF		< 5	< 5	< 5	< 5		
HS		< 5	< 5	< 5	< 5		



Cohort	Time window	Outcome	AURUM		GOLD	
			BNT162b2	ChAdOx1	BNT162b2	ChAdOx1
		MP	< 5	< 5	< 5	< 5
	31 to 90 days	VTE	7 (0.05)	14 (0.26)	< 5	< 5
		DVT	< 5	8 (0.15)	< 5	< 5
		PE	< 5	6 (0.11)	< 5	< 5
		ATE	< 5	< 5	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5
		MI	< 5	< 5	< 5	< 5
		HF	6 (0.04)	< 5	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
		91 to 180 days	VTE	9 (0.07)	< 5	< 5
	DVT		7 (0.05)	< 5	< 5	< 5
	PE		< 5	< 5	< 5	< 5
	ATE		< 5	< 5	< 5	< 5
	IS		< 5	< 5	< 5	< 5
	TIA		< 5	< 5	< 5	< 5
	MI		< 5	< 5	< 5	< 5
	HF		< 5	< 5	< 5	< 5
	HS		< 5	< 5	< 5	< 5
	MP		< 5	< 5	< 5	< 5
	181 to 365 days		VTE	< 5	< 5	< 5
		DVT	< 5	< 5	< 5	< 5
		PE	< 5	< 5	< 5	< 5
		ATE	< 5	< 5	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5
		MI	< 5	< 5	< 5	< 5
		HF	< 5	< 5	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5

VTE = Venous thromboembolism (DVT + PE), DVT = Deep vein thrombosis, PE = Pulmonary embolism, ATE = Arterial thrombosis/thromboembolism (IS + TIA + MI), IS = Ischemic stroke, TIA = Transient ischemic attack, MI = Myocardial infarction, HF = Heart failure, HS = Hemorrhagic stroke, MP = Myocarditis or Pericarditis

**Table S35: Number of records (and risk per 10,000 individuals) for post COVID-19 cardiac and thromboembolic complications, across cohorts and databases, stratified by vaccine (BNT162b2 - ChAdOx1). Follow-up ends at first vaccine dose after index date.**

Cohort	Time window	Outcome	AURUM		GOLD	
			BNT162b2	ChAdOx1	BNT162b2	ChAdOx1
<b>Cohort 1</b>			<b>N = 332,790</b>	<b>N = 219,804</b>	<b>N = 32,755</b>	<b>N = 82,406</b>
	<b>0 to 30 days</b>	<b>VTE</b>	31 (0.93)	14 (0.64)	< 5	< 5
		<b>DVT</b>	8 (0.24)	< 5	< 5	< 5
		<b>PE</b>	24 (0.72)	13 (0.59)	< 5	< 5
		<b>ATE</b>	18 (0.54)	10 (0.45)	< 5	< 5
		<b>IS</b>	< 5	< 5	< 5	< 5
		<b>TIA</b>	< 5	< 5	< 5	< 5
		<b>MI</b>	14 (0.42)	6 (0.27)	< 5	< 5
		<b>HF</b>	45 (1.35)	28 (1.27)	< 5	< 5
		<b>HS</b>	< 5	< 5	< 5	< 5
		<b>MP</b>	< 5	< 5	< 5	< 5
	<b>31 to 90 days</b>	<b>VTE</b>	15 (0.45)	5 (0.23)	< 5	< 5
		<b>DVT</b>	< 5	< 5	< 5	< 5
		<b>PE</b>	11 (0.33)	< 5	< 5	< 5
		<b>ATE</b>	8 (0.24)	8 (0.36)	< 5	< 5
		<b>IS</b>	< 5	< 5	< 5	< 5
		<b>TIA</b>	< 5	< 5	< 5	< 5
		<b>MI</b>	< 5	< 5	< 5	< 5
		<b>HF</b>	36 (1.08)	20 (0.91)	< 5	< 5
		<b>HS</b>	< 5	< 5	< 5	< 5
		<b>MP</b>	< 5	< 5	< 5	< 5
	<b>91 to 180 days</b>	<b>VTE</b>	< 5	5 (0.23)	< 5	< 5
		<b>DVT</b>	< 5	< 5	< 5	< 5
		<b>PE</b>	< 5	< 5	< 5	< 5
		<b>ATE</b>	10 (0.30)	< 5	< 5	< 5
		<b>IS</b>	< 5	< 5	< 5	< 5
		<b>TIA</b>	< 5	< 5	< 5	< 5
		<b>MI</b>	< 5	< 5	< 5	< 5
		<b>HF</b>	32 (0.96)	19 (0.86)	< 5	< 5
		<b>HS</b>	< 5	< 5	< 5	< 5
		<b>MP</b>	< 5	< 5	< 5	< 5

Cohort	Time window	Outcome	AURUM		GOLD	
			BNT162b2	ChAdOx1	BNT162b2	ChAdOx1
181 to 365 days	VTE	VTE	7 (0.21)	< 5	< 5	< 5
		DVT	< 5	< 5	< 5	< 5
		PE	< 5	< 5	< 5	< 5
		ATE	11 (0.33)	8 (0.36)	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5
		MI	6 (0.18)	< 5	< 5	< 5
		HF	35 (1.05)	18 (0.82)	< 5	5 (0.61)
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
<b>Cohort 2</b>			<b>N = 594,262</b>	<b>N = 969,262</b>	<b>N = 180,670</b>	<b>N = 302,999</b>
0 to 30 days	VTE	VTE	14 (0.24)	40 (0.41)	< 5	< 5
		DVT	6 (0.10)	13 (0.13)	< 5	< 5
		PE	8 (0.13)	30 (0.31)	< 5	< 5
		ATE	14 (0.24)	11 (0.11)	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5
		MI	8 (0.13)	9 (0.09)	< 5	< 5
		HF	15 (0.25)	32 (0.33)	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
31 to 90 days	VTE	VTE	5 (0.08)	8 (0.08)	< 5	< 5
		DVT	< 5	5 (0.05)	< 5	< 5
		PE	< 5	< 5	< 5	< 5
		ATE	9 (0.15)	9 (0.09)	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5
		MI	< 5	6 (0.06)	< 5	< 5
		HF	17 (0.29)	13 (0.13)	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
91 to 180 days	VTE	VTE	< 5	12 (0.12)	< 5	< 5
		DVT	< 5	7 (0.07)	< 5	< 5
		PE	< 5	5 (0.05)	< 5	< 5

Cohort	Time window	Outcome	AURUM		GOLD	
			BNT162b2	ChAdOx1	BNT162b2	ChAdOx1
		ATE	5 (0.08)	10 (0.10)	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5
		MI	< 5	6 (0.06)	< 5	< 5
		HF	9 (0.15)	18 (0.19)	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
	181 to 365 days	VTE	7 (0.12)	5 (0.05)	< 5	< 5
		DVT	< 5	< 5	< 5	< 5
		PE	5 (0.08)	< 5	< 5	< 5
		ATE	6 (0.10)	10 (0.10)	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5
		MI	< 5	6 (0.06)	< 5	< 5
		HF	11 (0.19)	20 (0.21)	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
<b>Cohort 3</b>			<b>N = 54,102</b>	<b>N = 1,473,602</b>	<b>N = 36,748</b>	<b>N = 423,876</b>
	0 to 30 days	VTE	< 5	23 (0.16)	< 5	< 5
		DVT	< 5	< 5	< 5	< 5
		PE	< 5	19 (0.13)	< 5	< 5
		ATE	< 5	8 (0.05)	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5
		MI	< 5	7 (0.05)	< 5	< 5
		HF	7 (1.29)	11 (0.07)	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
	31 to 90 days	VTE	< 5	< 5	< 5	< 5
		DVT	< 5	< 5	< 5	< 5
		PE	< 5	< 5	< 5	< 5
		ATE	< 5	6 (0.04)	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5

Cohort	Time window	Outcome	AURUM		GOLD		
			BNT162b2	ChAdOx1	BNT162b2	ChAdOx1	
Cohort 3		MI	< 5	< 5	< 5	< 5	
		HF	< 5	5 (0.03)	< 5	< 5	
		HS	< 5	< 5	< 5	< 5	
		MP	< 5	< 5	< 5	< 5	
	91 to 180 days	VTE	< 5	8 (0.05)	< 5	< 5	
		DVT	< 5	6 (0.04)	< 5	< 5	
		PE	< 5	< 5	< 5	< 5	
		ATE	< 5	7 (0.05)	< 5	< 5	
		IS	< 5	< 5	< 5	< 5	
		TIA	< 5	< 5	< 5	< 5	
		MI	< 5	< 5	< 5	< 5	
		HF	< 5	< 5	< 5	< 5	
		HS	< 5	< 5	< 5	< 5	
		MP	< 5	< 5	< 5	< 5	
		181 to 365 days	VTE	< 5	9 (0.06)	< 5	< 5
			DVT	< 5	< 5	< 5	< 5
	PE		< 5	6 (0.04)	< 5	< 5	
	ATE		< 5	< 5	< 5	< 5	
	IS		< 5	< 5	< 5	< 5	
	TIA		< 5	< 5	< 5	< 5	
	MI		< 5	< 5	< 5	< 5	
	HF		< 5	< 5	< 5	< 5	
	HS		< 5	< 5	< 5	< 5	
	MP		< 5	< 5	< 5	< 5	
	Cohort 4		N = 1,335,671	N = 542,670	N = 365,096	N = 147,744	
	0 to 30 days	VTE	9 (0.07)	8 (0.15)	< 5	6 (0.41)	
DVT		5 (0.04)	< 5	< 5	< 5		
PE		< 5	7 (0.13)	< 5	6 (0.41)		
ATE		< 5	< 5	< 5	< 5		
IS		< 5	< 5	< 5	< 5		
TIA		< 5	< 5	< 5	< 5		
MI		< 5	< 5	< 5	< 5		
HF		< 5	< 5	< 5	< 5		
HS		< 5	< 5	< 5	< 5		

Cohort	Time window	Outcome	AURUM		GOLD	
			BNT162b2	ChAdOx1	BNT162b2	ChAdOx1
		MP	< 5	< 5	< 5	< 5
	31 to 90 days	VTE	< 5	8 (0.15)	< 5	< 5
		DVT	< 5	< 5	< 5	< 5
		PE	< 5	5 (0.09)	< 5	< 5
		ATE	< 5	< 5	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5
		MI	< 5	< 5	< 5	< 5
		HF	6 (0.04)	< 5	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
		91 to 180 days	VTE	8 (0.06)	< 5	< 5
	DVT		7 (0.05)	< 5	< 5	< 5
	PE		< 5	< 5	< 5	< 5
	ATE		< 5	< 5	< 5	< 5
	IS		< 5	< 5	< 5	< 5
	TIA		< 5	< 5	< 5	< 5
	MI		< 5	< 5	< 5	< 5
	HF		< 5	< 5	< 5	< 5
	HS		< 5	< 5	< 5	< 5
	MP		< 5	< 5	< 5	< 5
	181 to 365 days		VTE	< 5	< 5	< 5
		DVT	< 5	< 5	< 5	< 5
		PE	< 5	< 5	< 5	< 5
		ATE	< 5	< 5	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5
		MI	< 5	< 5	< 5	< 5
		HF	< 5	< 5	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5

VTE = Venous thromboembolism (DVT + PE), DVT = Deep vein thrombosis, PE = Pulmonary embolism, ATE = Arterial thrombosis/thromboembolism (IS + TIA + MI), IS = Ischemic stroke, TIA = Transient ischemic attack, MI = Myocardial infarction, HF = Heart failure, HS = Hemorrhagic stroke, MP = Myocarditis or Pericarditis

**Table S36: Number of records (and risk per 10,000 individuals) for post COVID-19 cardiac and thromboembolic complications, across cohorts and databases, stratified by vaccine (BNT162b2 - ChAdOx1). Only first outcome after COVID-19 captured.**

Cohort	Time window	Outcome	AURUM		GOLD	
			BNT162b2	ChAdOx1	BNT162b2	ChAdOx1
<b>Cohort 1</b>			<b>N = 332,790</b>	<b>N = 219,804</b>	<b>N = 32,755</b>	<b>N = 82,406</b>
	<b>0 to 30 days</b>	<b>VTE</b>	76 (2.28)	41 (1.87)	< 5	< 5
		<b>DVT</b>	15 (0.45)	12 (0.55)	< 5	< 5
		<b>PE</b>	64 (1.92)	31 (1.41)	< 5	< 5
		<b>ATE</b>	45 (1.35)	25 (1.14)	< 5	6 (0.73)
		<b>IS</b>	5 (0.15)	< 5	< 5	< 5
		<b>TIA</b>	11 (0.33)	7 (0.32)	< 5	< 5
		<b>MI</b>	29 (0.87)	17 (0.77)	< 5	< 5
		<b>HF</b>	126 (3.79)	72 (3.28)	< 5	5 (0.61)
		<b>HS</b>	< 5	< 5	< 5	< 5
		<b>MP</b>	< 5	< 5	< 5	< 5
	<b>31 to 90 days</b>	<b>VTE</b>	25 (0.75)	14 (0.64)	< 5	< 5
		<b>DVT</b>	7 (0.21)	8 (0.36)	< 5	< 5
		<b>PE</b>	18 (0.54)	7 (0.32)	< 5	< 5
		<b>ATE</b>	23 (0.69)	20 (0.91)	< 5	< 5
		<b>IS</b>	< 5	< 5	< 5	< 5
		<b>TIA</b>	10 (0.30)	9 (0.41)	< 5	< 5
		<b>MI</b>	11 (0.33)	9 (0.41)	< 5	< 5
		<b>HF</b>	70 (2.10)	39 (1.77)	< 5	5 (0.61)
		<b>HS</b>	< 5	< 5	< 5	< 5
		<b>MP</b>	< 5	< 5	< 5	< 5
	<b>91 to 180 days</b>	<b>VTE</b>	< 5	15 (0.68)	< 5	< 5
		<b>DVT</b>	< 5	5 (0.23)	< 5	< 5
		<b>PE</b>	< 5	10 (0.45)	< 5	< 5
		<b>ATE</b>	18 (0.54)	10 (0.45)	< 5	6 (0.73)
		<b>IS</b>	6 (0.18)	< 5	< 5	< 5
		<b>TIA</b>	6 (0.18)	6 (0.27)	< 5	< 5
		<b>MI</b>	6 (0.18)	< 5	< 5	5 (0.61)
		<b>HF</b>	54 (1.62)	35 (1.59)	< 5	< 5
		<b>HS</b>	< 5	< 5	< 5	< 5
		<b>MP</b>	< 5	< 5	< 5	< 5

Cohort	Time window	Outcome	AURUM		GOLD	
			BNT162b2	ChAdOx1	BNT162b2	ChAdOx1
	181 to 365 days	VTE	10 (0.30)	< 5	< 5	< 5
		DVT	6 (0.18)	< 5	< 5	< 5
		PE	< 5	< 5	< 5	< 5
		ATE	14 (0.42)	9 (0.41)	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5
		MI	7 (0.21)	< 5	< 5	< 5
		HF	35 (1.05)	18 (0.82)	< 5	5 (0.61)
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
<b>Cohort 2</b>			<b>N = 594,262</b>	<b>N = 969,262</b>	<b>N = 180,670</b>	<b>N = 302,999</b>
	0 to 30 days	VTE	62 (1.04)	158 (1.63)	5 (0.28)	19 (0.63)
		DVT	18 (0.30)	47 (0.48)	< 5	< 5
		PE	45 (0.76)	120 (1.24)	< 5	15 (0.50)
		ATE	29 (0.49)	75 (0.77)	< 5	< 5
		IS	< 5	12 (0.12)	< 5	< 5
		TIA	11 (0.19)	13 (0.13)	< 5	< 5
		MI	16 (0.27)	52 (0.54)	< 5	< 5
		HF	43 (0.72)	103 (1.06)	< 5	11 (0.36)
		HS	< 5	< 5	< 5	< 5
		MP	< 5	6 (0.06)	< 5	< 5
	31 to 90 days	VTE	21 (0.35)	54 (0.56)	< 5	9 (0.30)
		DVT	7 (0.12)	25 (0.26)	< 5	5 (0.17)
		PE	14 (0.24)	31 (0.32)	< 5	< 5
		ATE	36 (0.61)	56 (0.58)	< 5	5 (0.17)
		IS	5 (0.08)	6 (0.06)	< 5	< 5
		TIA	9 (0.15)	24 (0.25)	< 5	< 5
		MI	22 (0.37)	28 (0.29)	< 5	< 5
		HF	34 (0.57)	65 (0.67)	< 5	7 (0.23)
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
	91 to 180 days	VTE	9 (0.15)	28 (0.29)	< 5	< 5
		DVT	6 (0.10)	15 (0.15)	< 5	< 5
		PE	< 5	15 (0.15)	< 5	< 5



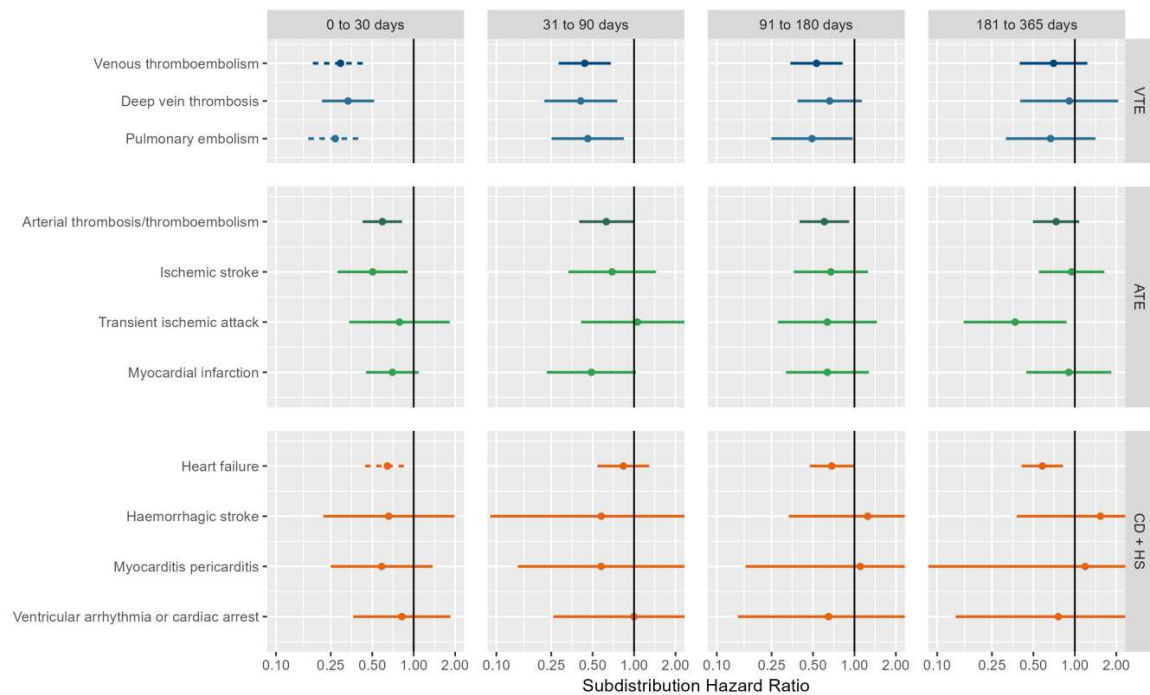
Cohort	Time window	Outcome	AURUM		GOLD	
			BNT162b2	ChAdOx1	BNT162b2	ChAdOx1
		ATE	15 (0.25)	28 (0.29)	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	5 (0.08)	13 (0.13)	< 5	< 5
		MI	10 (0.17)	15 (0.15)	< 5	< 5
		HF	24 (0.40)	41 (0.42)	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
	181 to 365 days	VTE	8 (0.13)	< 5	< 5	< 5
		DVT	< 5	< 5	< 5	< 5
		PE	7 (0.12)	< 5	< 5	< 5
		ATE	7 (0.12)	10 (0.10)	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5
		MI	< 5	6 (0.06)	< 5	< 5
		HF	12 (0.20)	22 (0.23)	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
<b>Cohort 3</b>			<b>N = 54,102</b>	<b>N = 1,473,602</b>	<b>N = 36,748</b>	<b>N = 423,876</b>
	0 to 30 days	VTE	< 5	139 (0.94)	< 5	16 (0.38)
		DVT	< 5	41 (0.28)	< 5	< 5
		PE	< 5	101 (0.69)	< 5	12 (0.28)
		ATE	< 5	47 (0.32)	< 5	12 (0.28)
		IS	< 5	5 (0.03)	< 5	< 5
		TIA	< 5	16 (0.11)	< 5	< 5
		MI	< 5	26 (0.18)	< 5	9 (0.21)
		HF	10 (1.85)	28 (0.19)	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	6 (0.04)	< 5	< 5
	31 to 90 days	VTE	< 5	44 (0.30)	< 5	6 (0.14)
		DVT	< 5	26 (0.18)	< 5	< 5
		PE	< 5	18 (0.12)	< 5	< 5
		ATE	< 5	31 (0.21)	< 5	7 (0.17)
		TIA	< 5	13 (0.09)	< 5	< 5

Cohort	Time window	Outcome	AURUM		GOLD		
			BNT162b2	ChAdOx1	BNT162b2	ChAdOx1	
		MI	< 5	16 (0.11)	< 5	< 5	
		HF	< 5	23 (0.16)	< 5	< 5	
		HS	< 5	< 5	< 5	< 5	
		MP	< 5	7 (0.05)	< 5	< 5	
	91 to 180 days	VTE	< 5	25 (0.17)	< 5	< 5	
		DVT	< 5	15 (0.10)	< 5	< 5	
		PE	< 5	13 (0.09)	< 5	< 5	
		ATE	< 5	26 (0.18)	< 5	< 5	
		IS	< 5	< 5	< 5	< 5	
		TIA	< 5	8 (0.05)	< 5	< 5	
		MI	< 5	17 (0.12)	< 5	< 5	
		HF	< 5	10 (0.07)	< 5	< 5	
		HS	< 5	< 5	< 5	< 5	
		MP	< 5	< 5	< 5	< 5	
		181 to 365 days	VTE	< 5	9 (0.06)	< 5	< 5
			DVT	< 5	< 5	< 5	< 5
	PE		< 5	6 (0.04)	< 5	< 5	
	ATE		< 5	< 5	< 5	< 5	
	IS		< 5	< 5	< 5	< 5	
	TIA		< 5	< 5	< 5	< 5	
	MI		< 5	< 5	< 5	< 5	
	HF		< 5	< 5	< 5	< 5	
	HS		< 5	< 5	< 5	< 5	
	MP		< 5	< 5	< 5	< 5	
	<b>Cohort 4</b>		<b>N = 1,335,671</b>	<b>N = 542,670</b>	<b>N = 365,096</b>	<b>N = 147,744</b>	
	0 to 30 days	VTE	20 (0.15)	27 (0.50)	< 5	8 (0.54)	
DVT		9 (0.07)	7 (0.13)	< 5	< 5		
PE		11 (0.08)	21 (0.39)	< 5	6 (0.41)		
ATE		< 5	5 (0.09)	< 5	< 5		
IS		< 5	< 5	< 5	< 5		
TIA		< 5	< 5	< 5	< 5		
MI		< 5	< 5	< 5	< 5		
HF		< 5	< 5	< 5	< 5		
HS		< 5	< 5	< 5	< 5		

Cohort	Time window	Outcome	AURUM		GOLD	
			BNT162b2	ChAdOx1	BNT162b2	ChAdOx1
		MP	< 5	< 5	< 5	< 5
	31 to 90 days	VTE	7 (0.05)	14 (0.26)	< 5	< 5
		DVT	< 5	8 (0.15)	< 5	< 5
		PE	< 5	6 (0.11)	< 5	< 5
		ATE	< 5	< 5	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5
		MI	< 5	< 5	< 5	< 5
		HF	6 (0.04)	< 5	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5
		91 to 180 days	VTE	9 (0.07)	< 5	< 5
	DVT		7 (0.05)	< 5	< 5	< 5
	PE		< 5	< 5	< 5	< 5
	ATE		< 5	< 5	< 5	< 5
	IS		< 5	< 5	< 5	< 5
	TIA		< 5	< 5	< 5	< 5
	MI		< 5	< 5	< 5	< 5
	HF		< 5	< 5	< 5	< 5
	HS		< 5	< 5	< 5	< 5
	MP		< 5	< 5	< 5	< 5
	181 to 365 days		VTE	< 5	< 5	< 5
		DVT	< 5	< 5	< 5	< 5
		PE	< 5	< 5	< 5	< 5
		ATE	< 5	< 5	< 5	< 5
		IS	< 5	< 5	< 5	< 5
		TIA	< 5	< 5	< 5	< 5
		MI	< 5	< 5	< 5	< 5
		HF	< 5	< 5	< 5	< 5
		HS	< 5	< 5	< 5	< 5
		MP	< 5	< 5	< 5	< 5

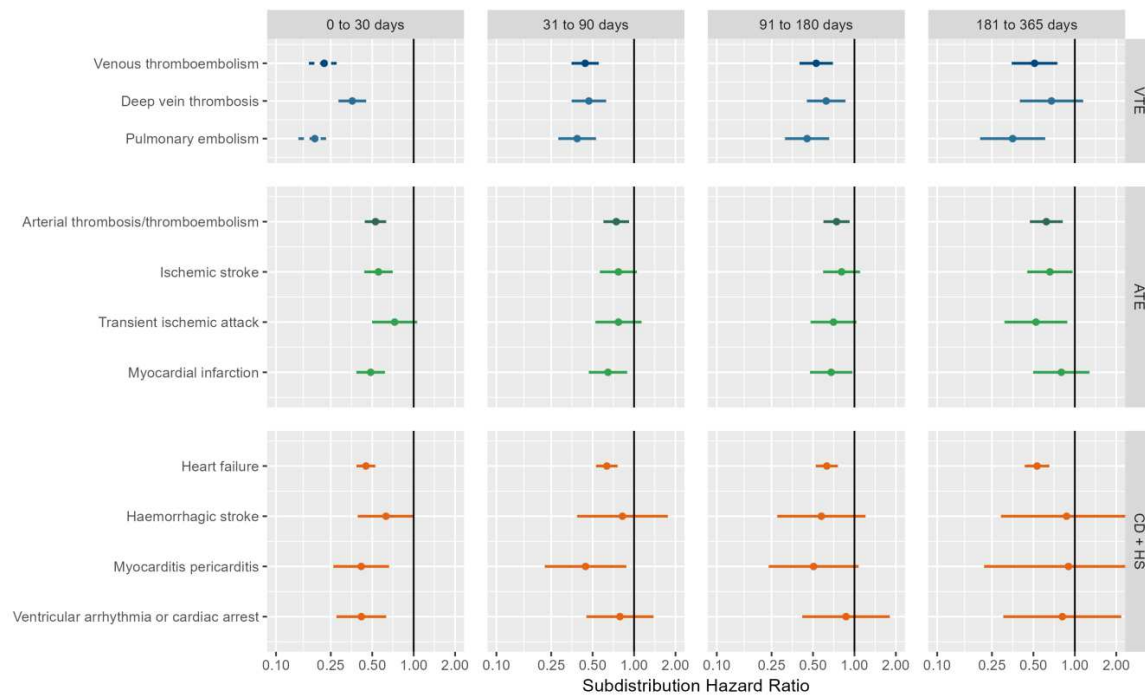
VTE = Venous thromboembolism (DVT + PE), DVT = Deep vein thrombosis, PE = Pulmonary embolism, ATE = Arterial thrombosis/thromboembolism (IS + TIA + MI), IS = Ischemic stroke, TIA = Transient ischemic attack, MI = Myocardial infarction, HF = Heart failure, HS = Hemorrhagic stroke, MP = Myocarditis or Pericarditis

**Figure S6: Forest plots for vaccine effect (any COVID-19 vaccine), meta-analysis across cohorts and databases. Follow-up ends at first vaccine dose after index date. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



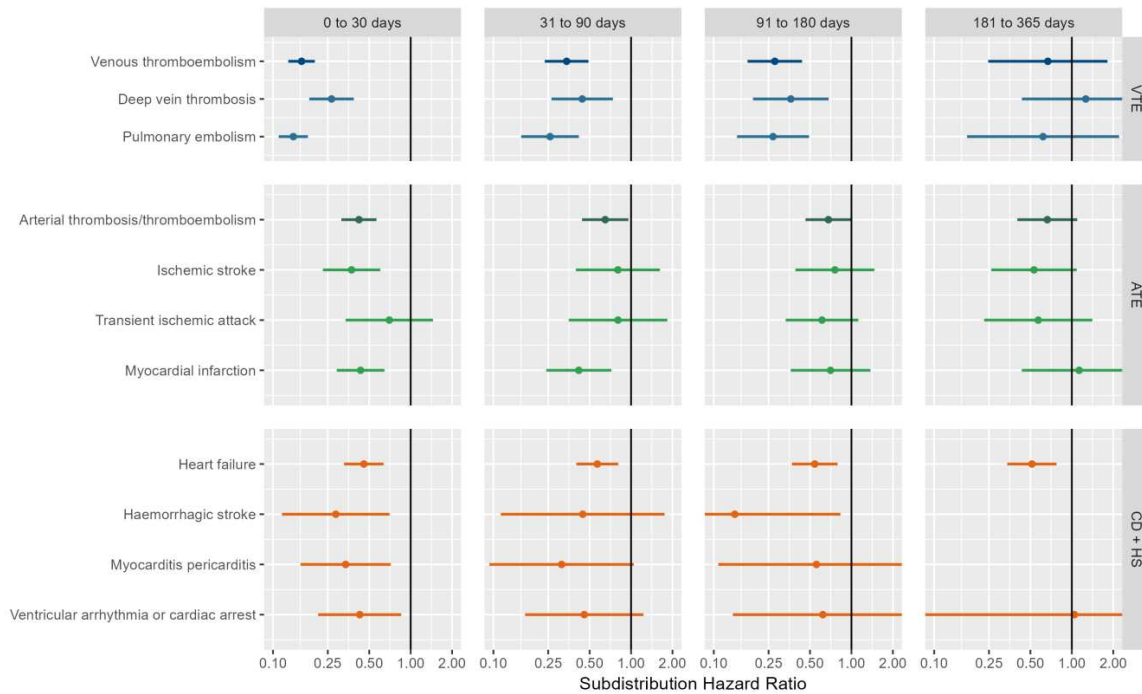
VTE = Venous thromboembolism, ATE = Arterial thrombosis/thromboembolism, CD + HS = Cardiac diseases and Hemorrhagic stroke

**Figure S7: Forest plots for vaccine effect (any COVID-19 vaccine), meta-analysis across cohorts and databases. Only first outcome after COVID-19 captured. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



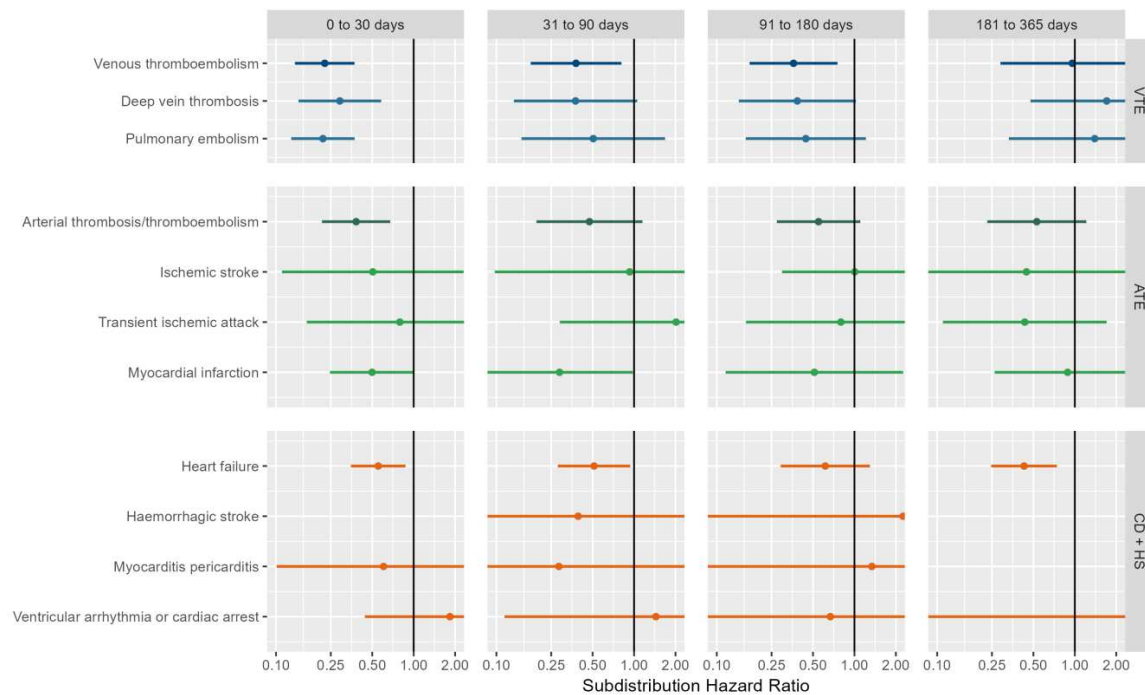
VTE = Venous thromboembolism, ATE = Arterial thrombosis/thromboembolism, CD + HS = Cardiac diseases and Hemorrhagic stroke

**Figure S8: Forest plots for vaccine effect (ChAdOx1 vaccine), meta-analysis across cohorts and databases.** Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .



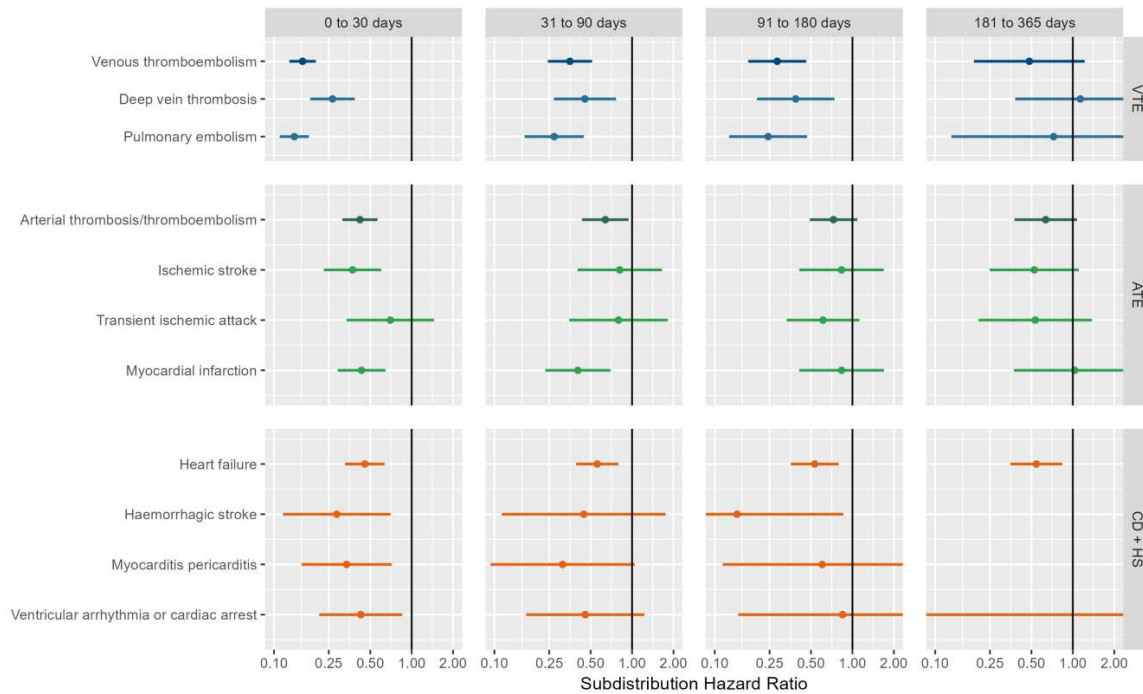
VTE = Venous thromboembolism, ATE = Arterial thrombosis/thromboembolism, CD + HS = Cardiac diseases and Hemorrhagic stroke

**Figure S9: Forest plots for vaccine effect (ChAdOx1 vaccine), meta-analysis across cohorts and databases.** Follow-up ends at first vaccine dose after index date. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .



VTE = Venous thromboembolism, ATE = Arterial thrombosis/thromboembolism, CD + HS = Cardiac diseases and Hemorrhagic stroke

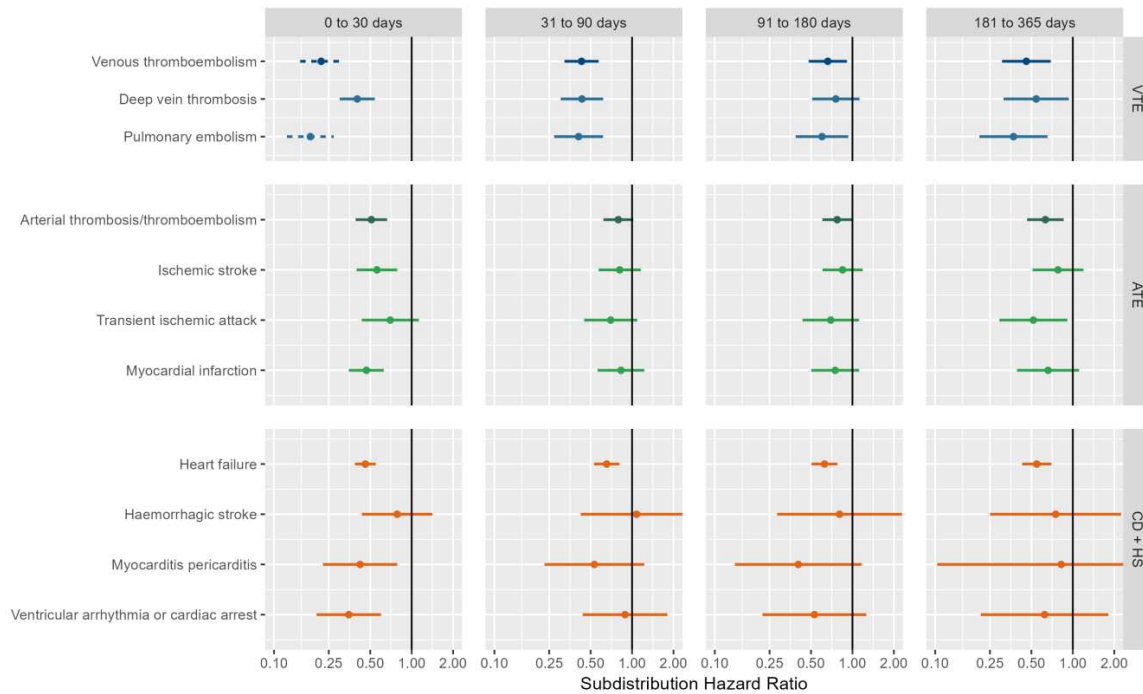
**Figure S10: Forest plots for vaccine effect (ChAdOx1 vaccine), meta-analysis across cohorts and databases.** Only first outcome after COVID-19 captured. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .



VTE = Venous thromboembolism, ATE = Arterial thrombosis/thromboembolism, CD + HS = Cardiac diseases and Hemorrhagic stroke

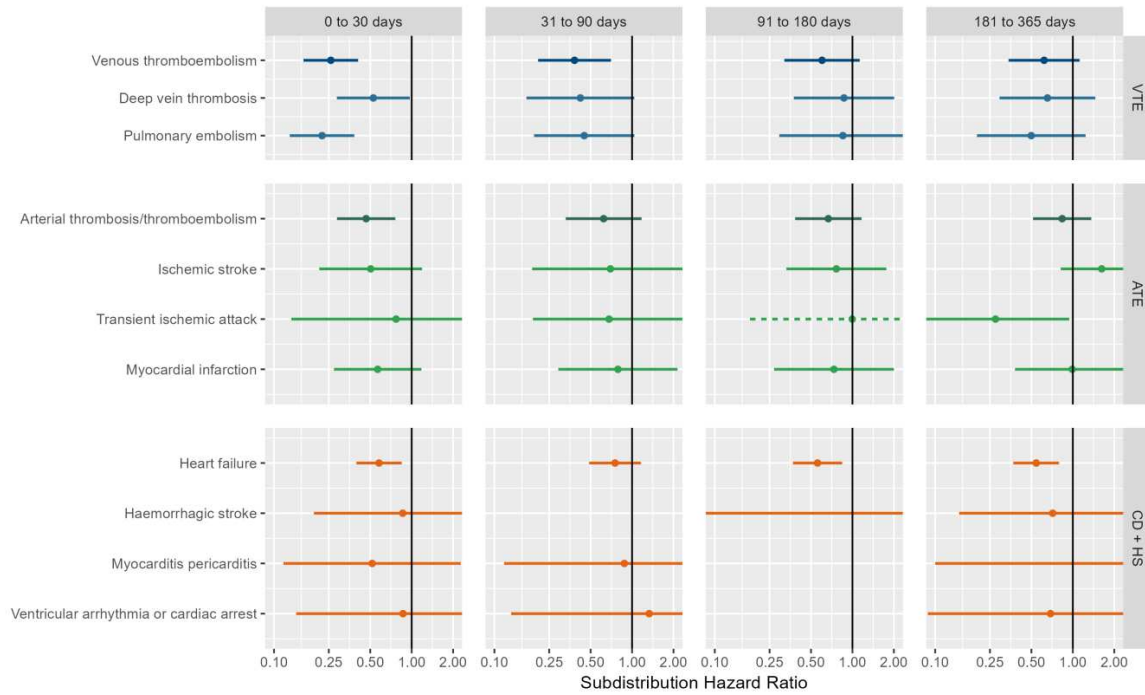


**Figure S11: Forest plots for vaccine effect (BNT162b2 vaccine), meta-analysis across cohorts and databases.** Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .



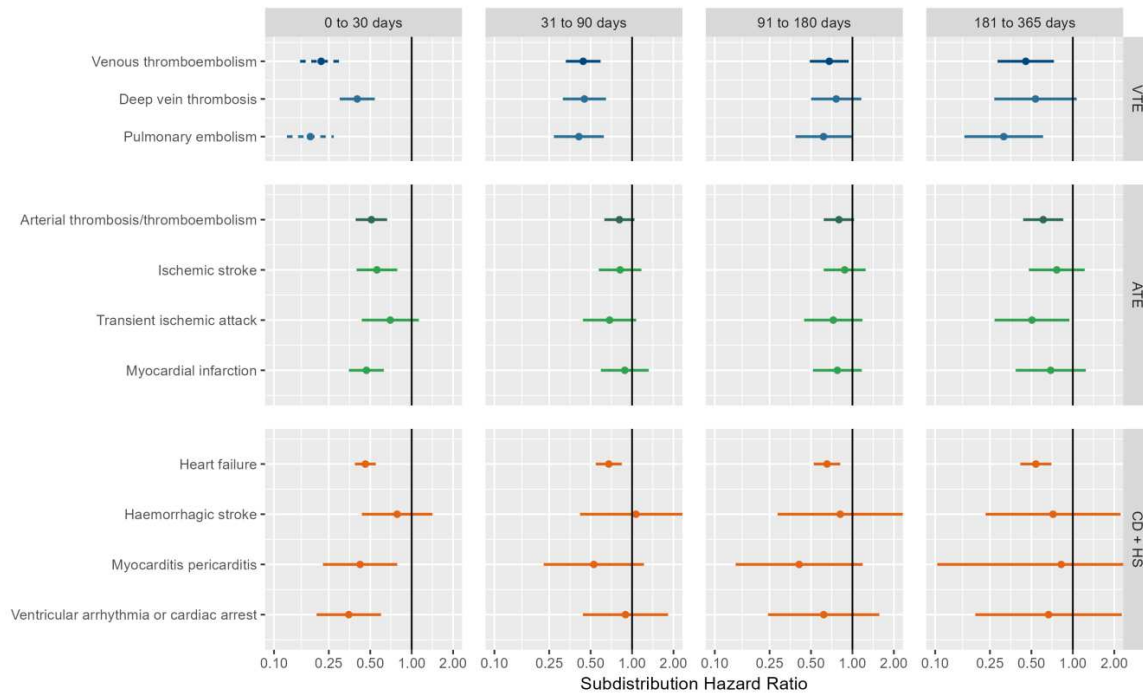
VTE = Venous thromboembolism, ATE = Arterial thrombosis/thromboembolism, CD + HS = Cardiac diseases and Hemorrhagic stroke

**Figure S12: Forest plots for vaccine effect (BNT162b2 vaccine), meta-analysis across cohorts and databases.** Follow-up ends at first vaccine dose after index date. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .



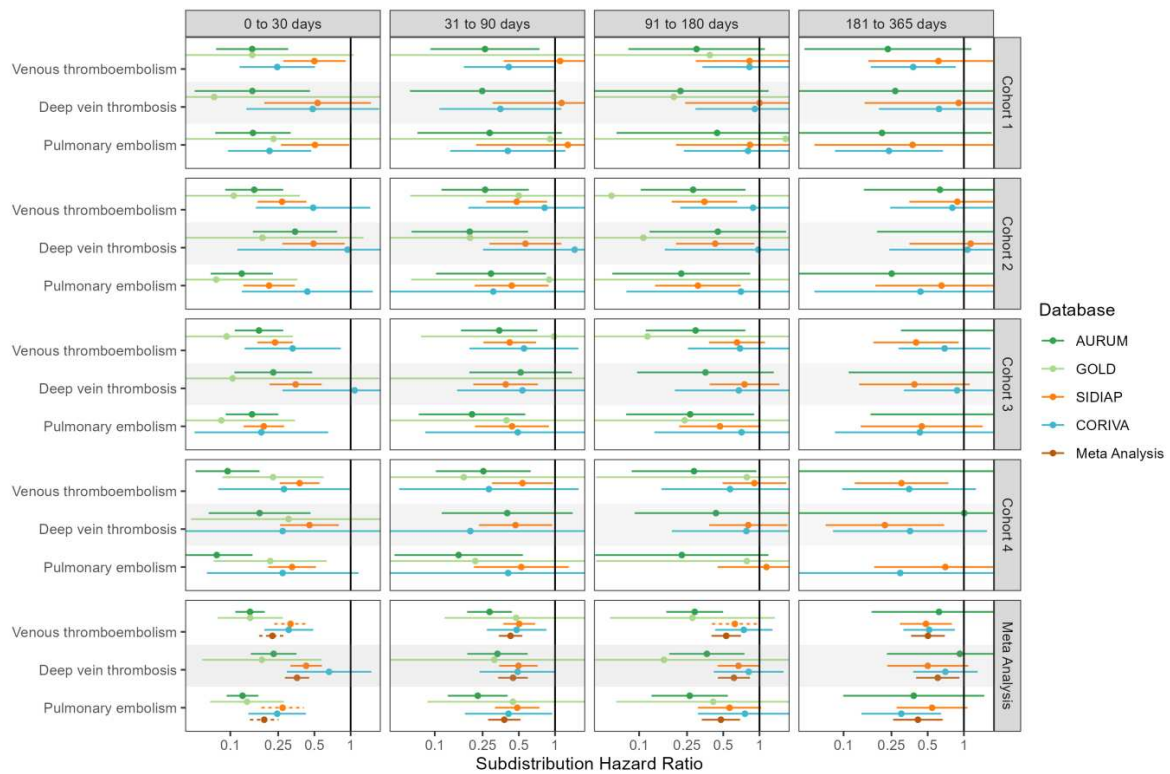
VTE = Venous thromboembolism, ATE = Arterial thrombosis/thromboembolism, CD + HS = Cardiac diseases and Hemorrhagic stroke

**Figure S13: Forest plots for vaccine effect (BNT162b2 vaccine), meta-analysis across cohorts and databases.** Only first outcome after COVID-19 captured. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .

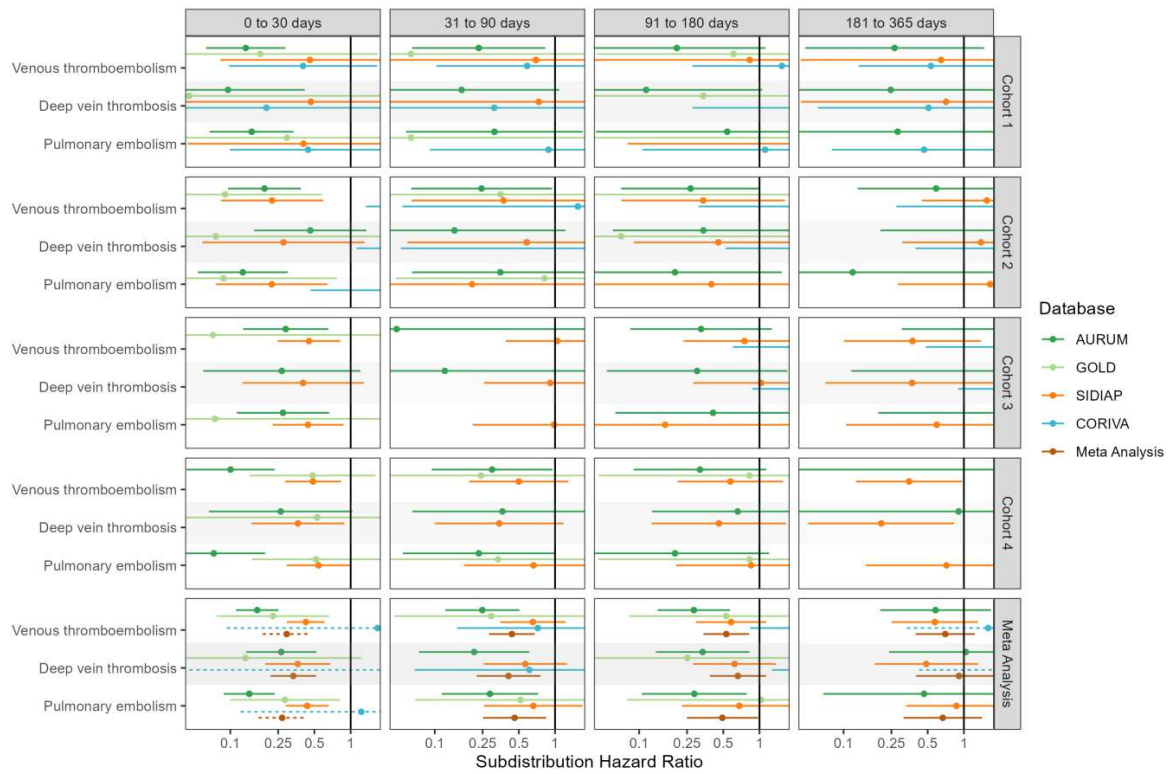


VTE = Venous thromboembolism, ATE = Arterial thrombosis/thromboembolism, CD + HS = Cardiac diseases and Hemorrhagic stroke

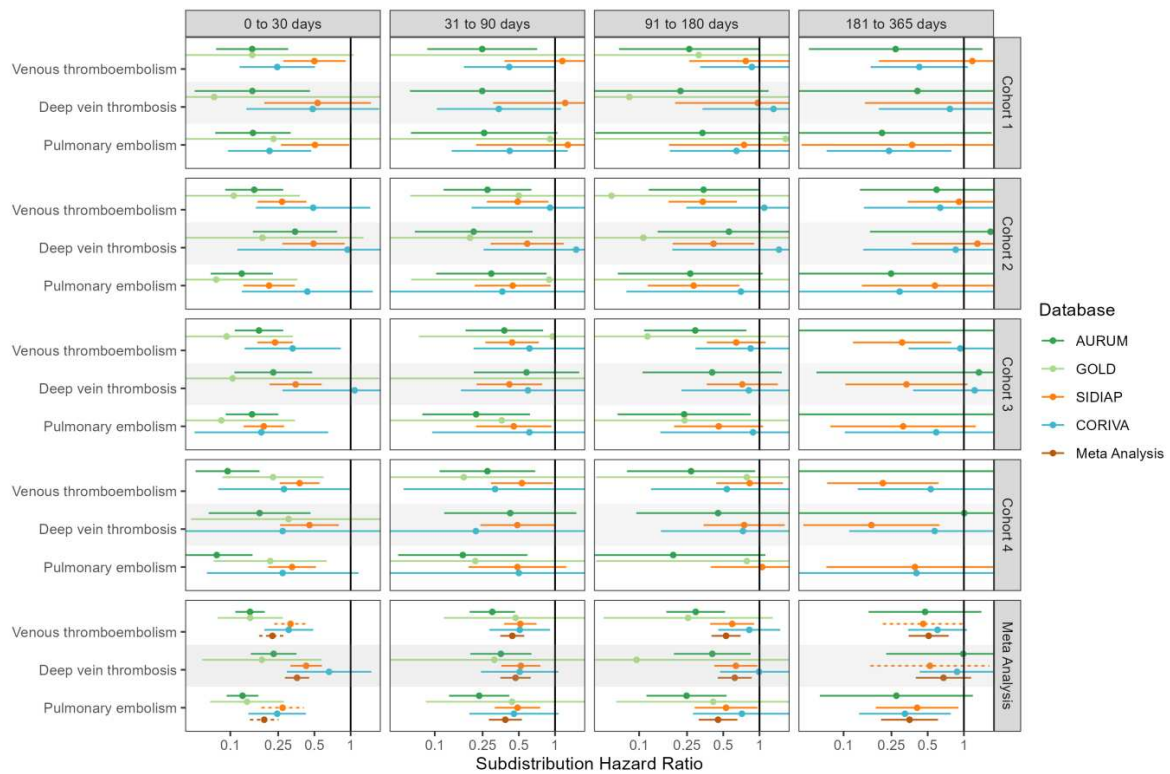
**Figure S14: Forest plots for vaccine effect (any COVID-19 vaccine) on preventing venous thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel).** Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .



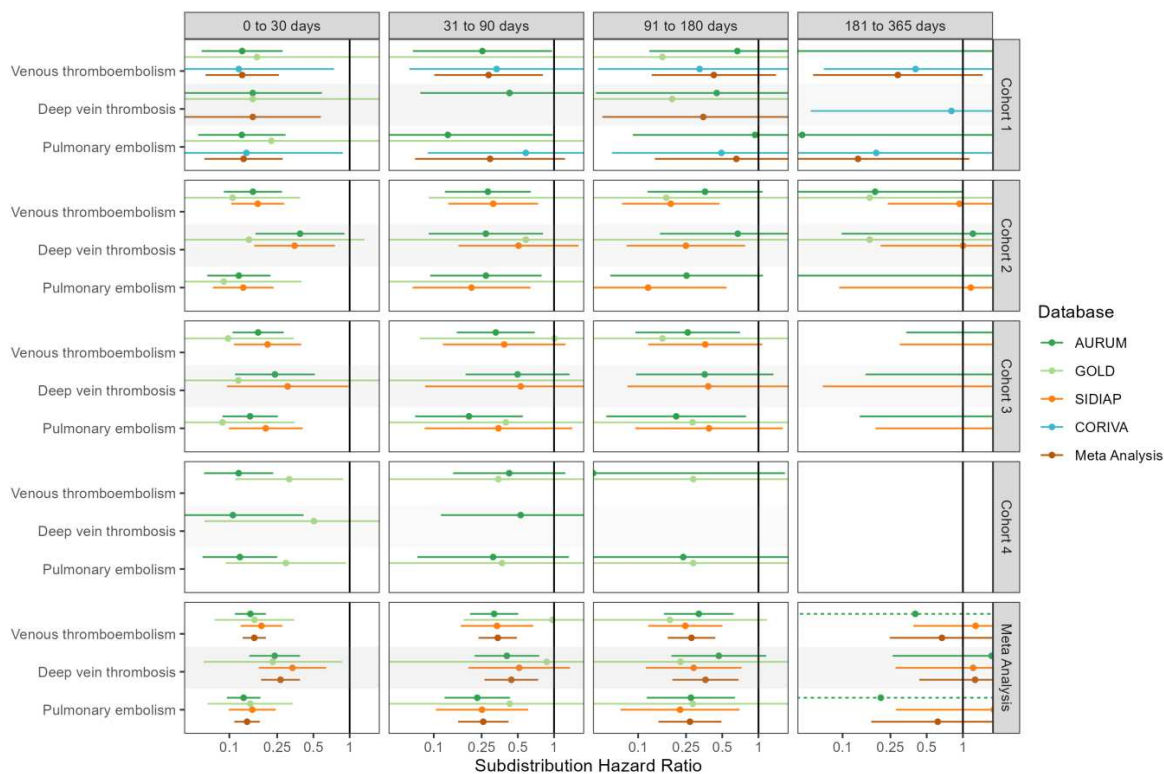
**Figure S15: Forest plots for vaccine effect (any COVID-19 vaccine) on preventing venous thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Follow-up ends at first vaccine dose after index date. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



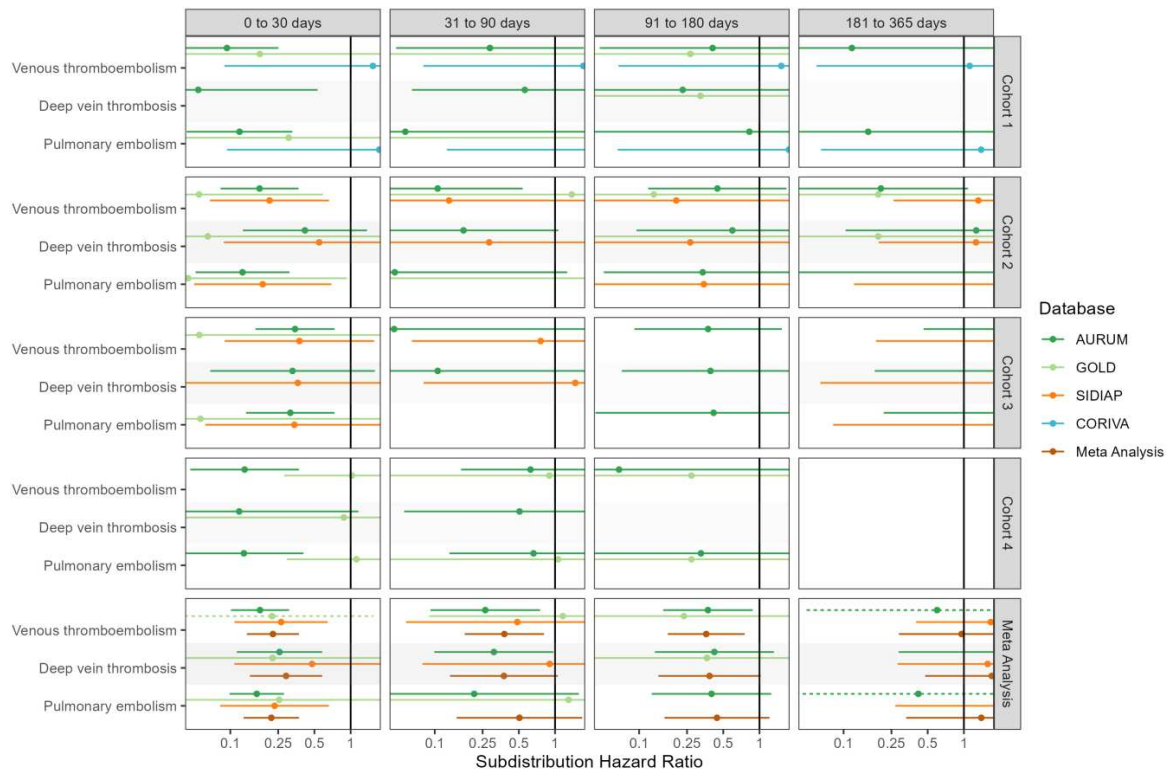
**Figure S16: Forest plots for vaccine effect (any COVID-19 vaccine) on preventing venous thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Only first outcome after COVID-19 captured. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



**Figure S17: Forest plots for vaccine effect (ChAdOx1 vaccine) on preventing venous thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**

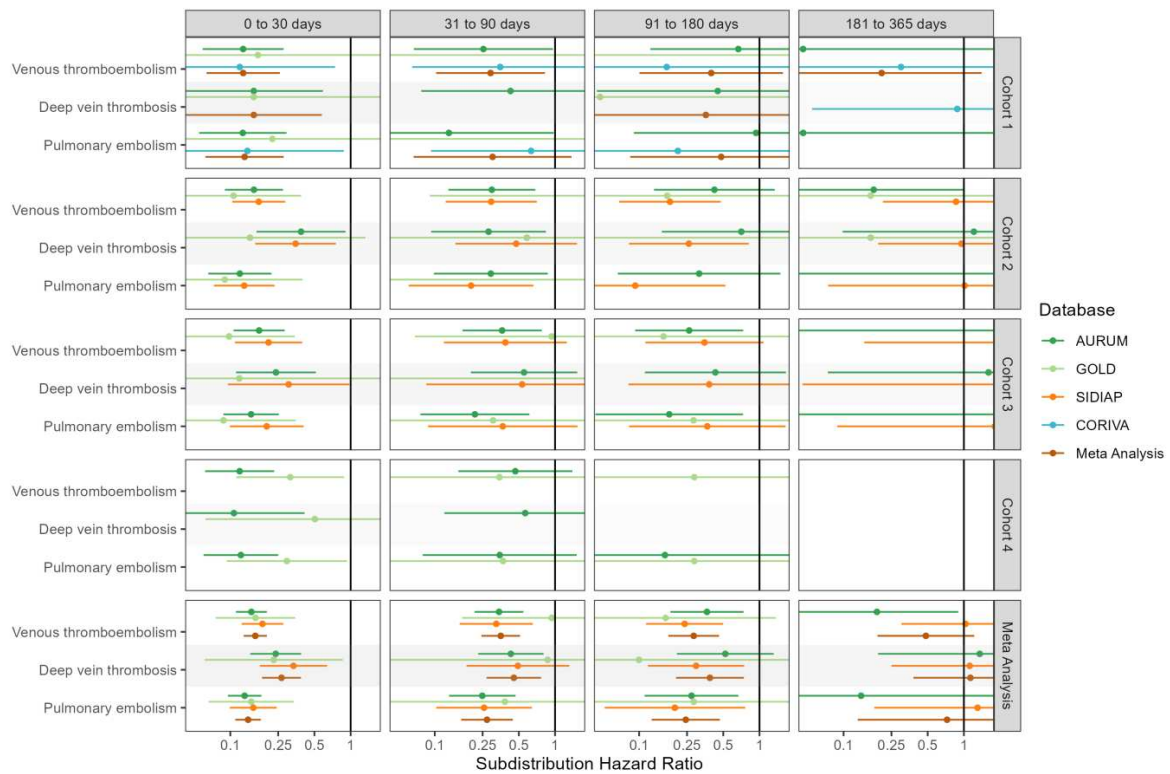


**Figure S18: Forest plots for vaccine effect (ChAdOx1 vaccine) on preventing venous thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Follow-up ends at first vaccine dose after index date. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**

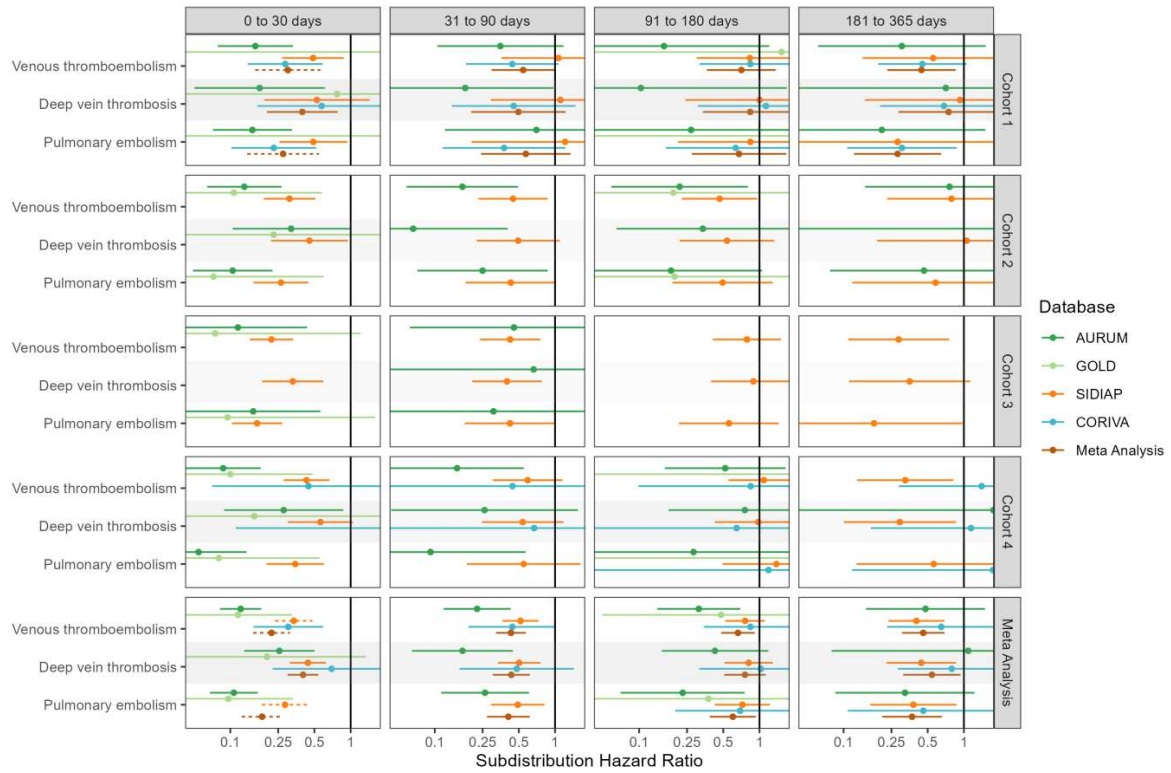




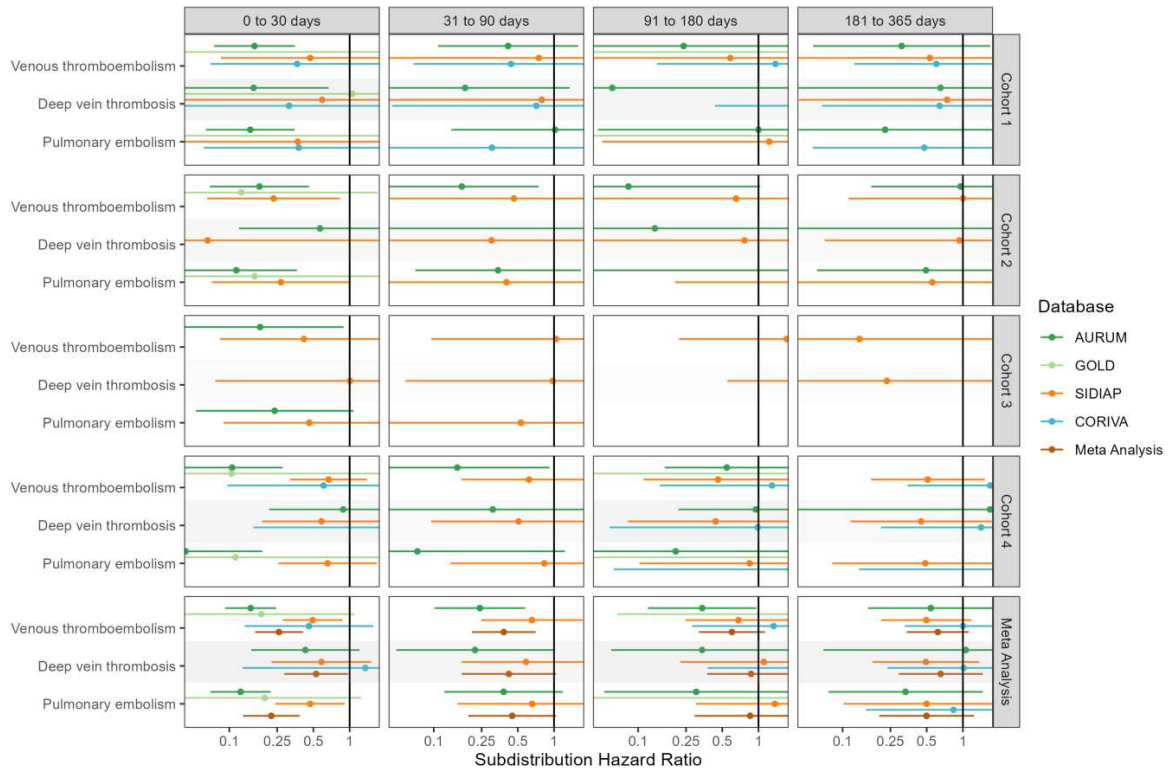
**Figure S19: Forest plots for vaccine effect (ChAdOx1 vaccine) on preventing venous thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Only first outcome after COVID-19 captured. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



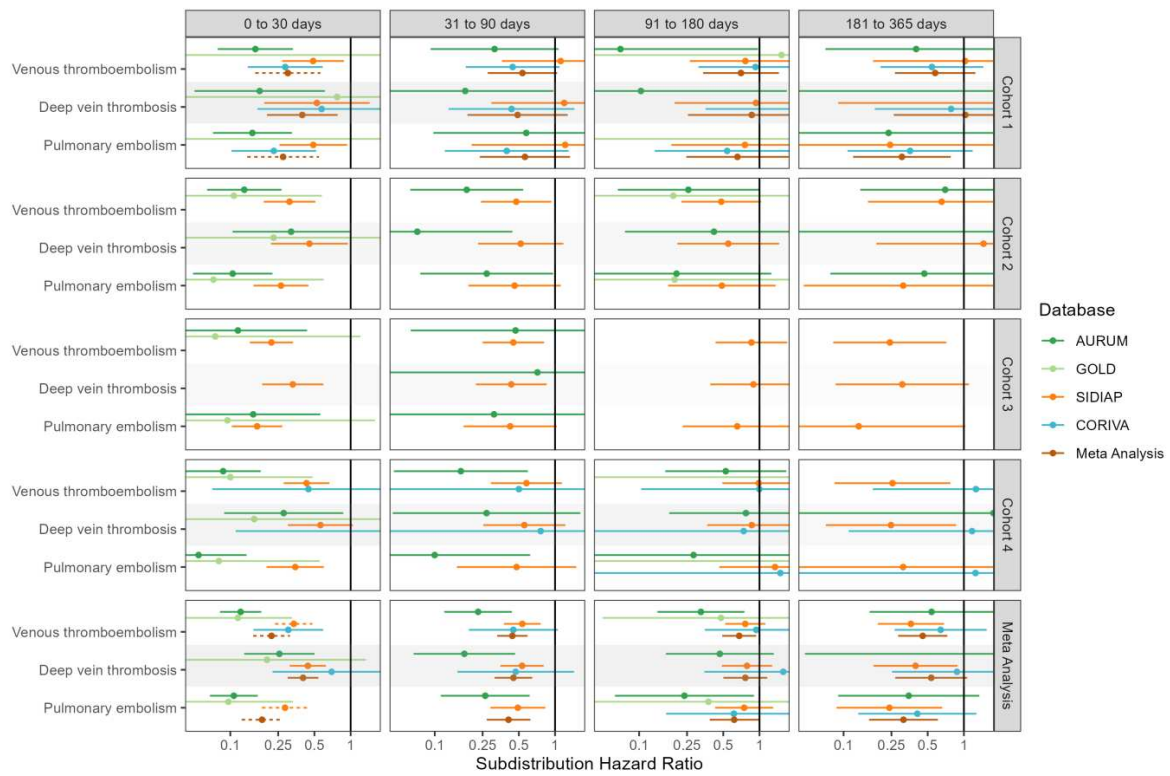
**Figure S20: Forest plots for vaccine effect (BNT162b2 vaccine) on preventing venous thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



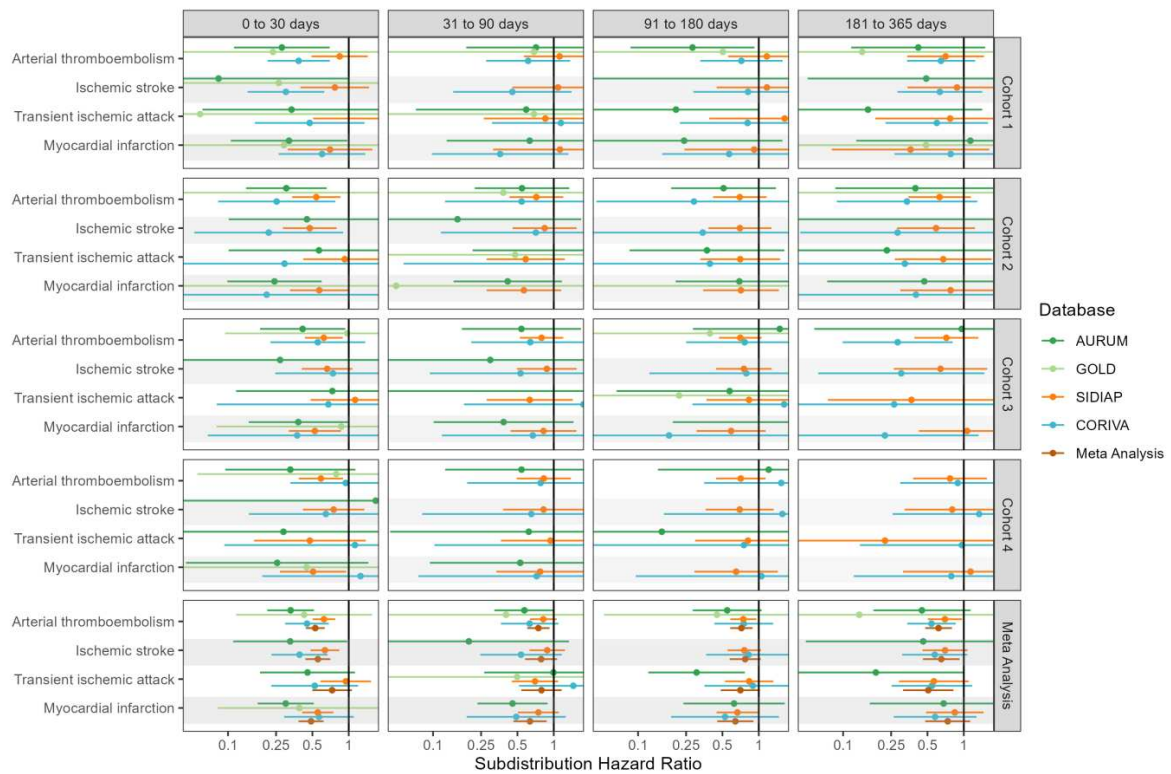
**Figure S21: Forest plots for vaccine effect (BNT162b2 vaccine) on preventing venous thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Follow-up ends at first vaccine dose after index date. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



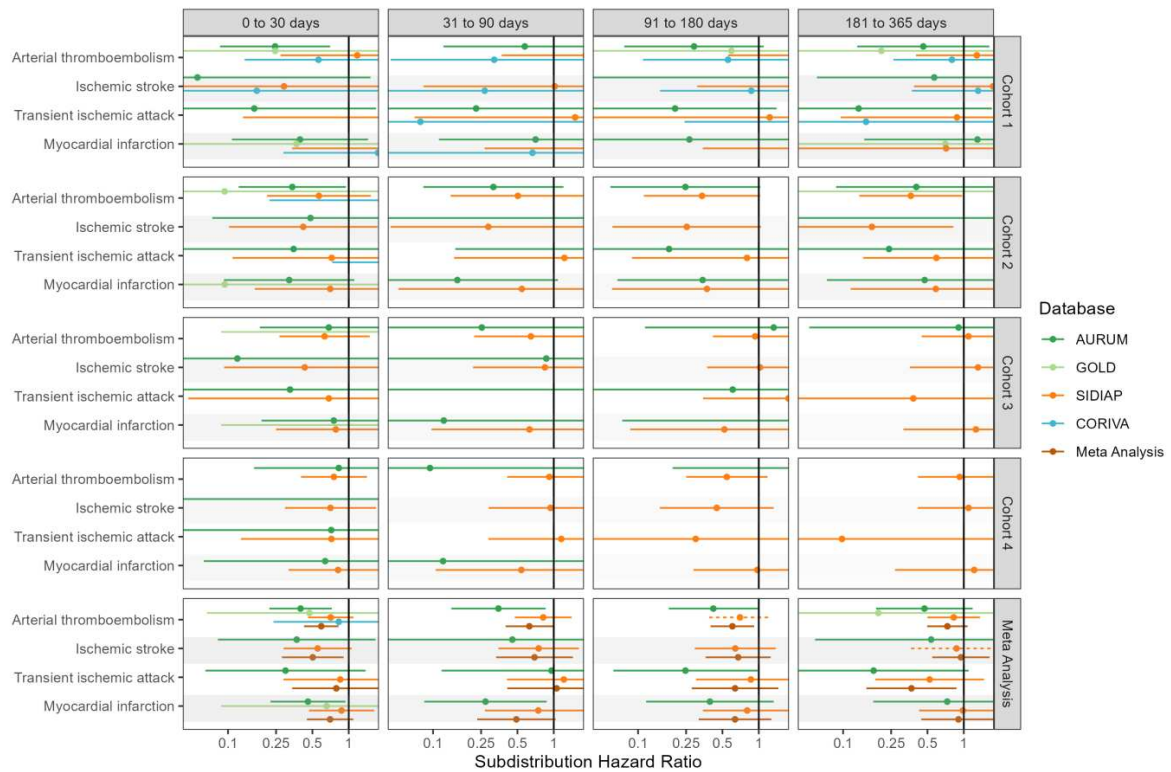
**Figure S22: Forest plots for vaccine effect (BNT162b2 vaccine) on preventing venous thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Only first outcome after COVID-19 captured. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



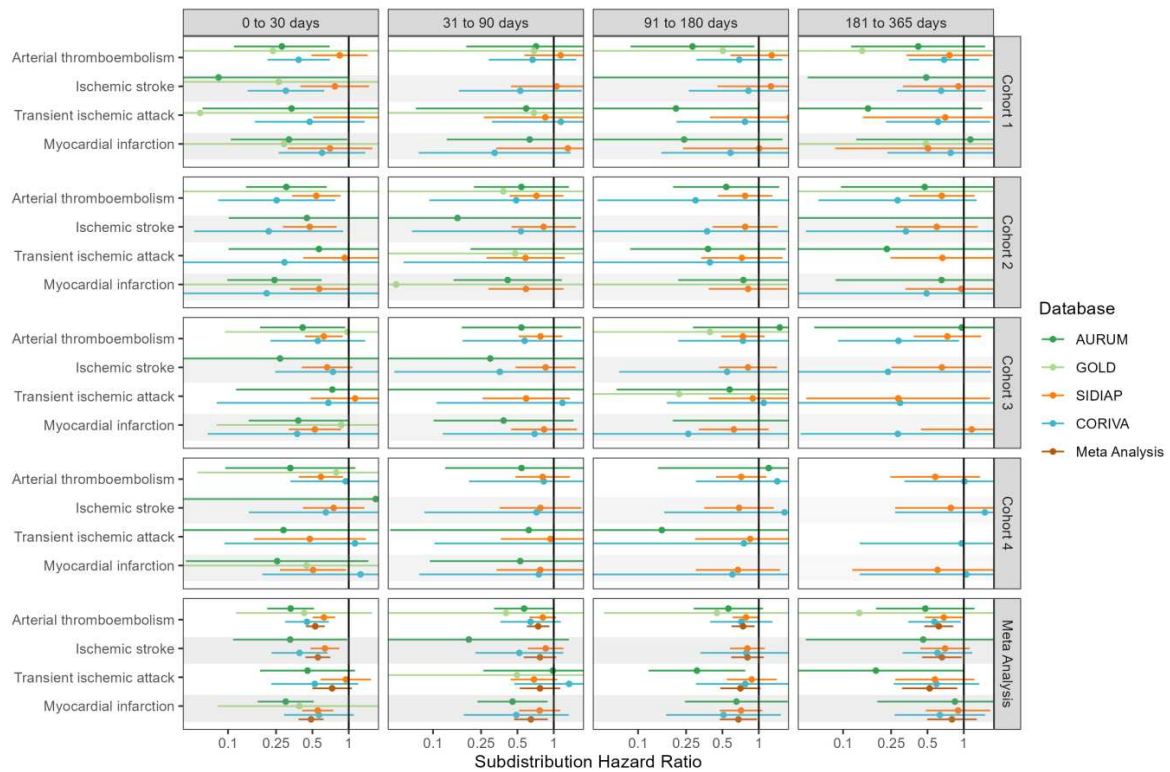
**Figure S23: Forest plots for vaccine effect (any COVID-19 vaccine) on preventing arterial thrombosis/thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



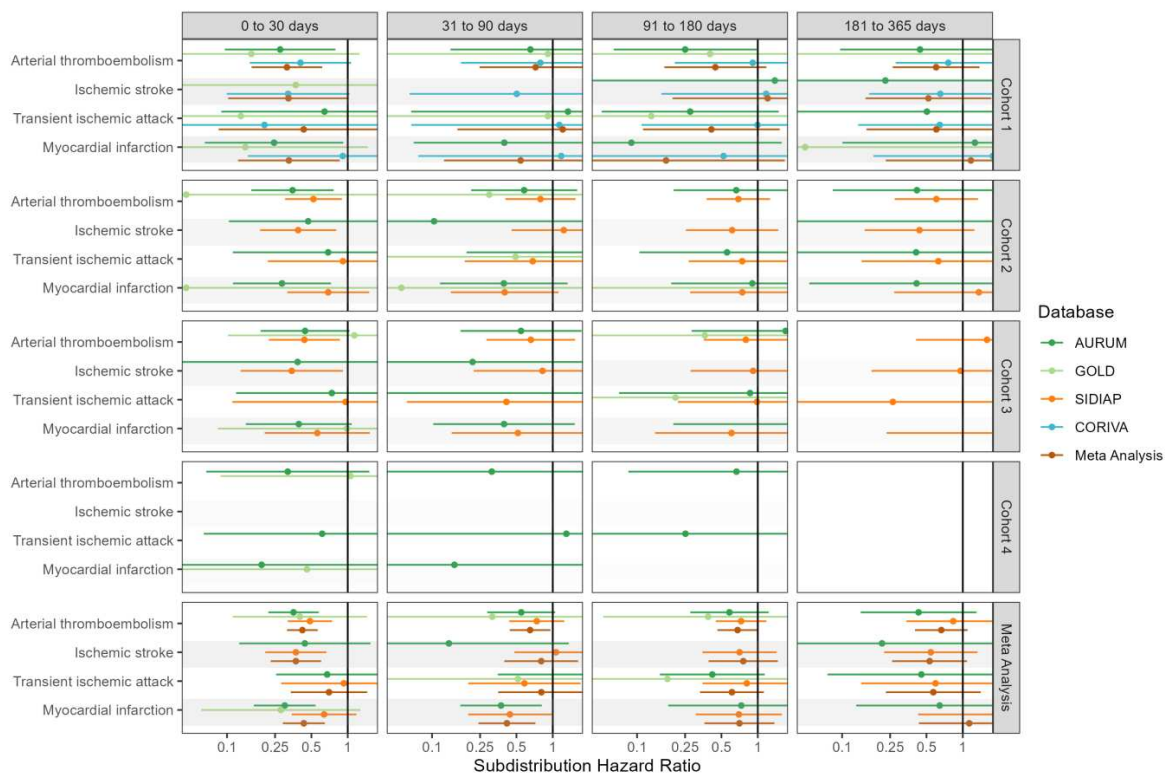
**Figure S24: Forest plots for vaccine effect (any COVID-19 vaccine) on preventing arterial thrombosis/thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Follow-up ends at first vaccine dose after index date. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



**Figure S25: Forest plots for vaccine effect (any COVID-19 vaccine) on preventing arterial thrombosis/thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Only first outcome after COVID-19 captured. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**

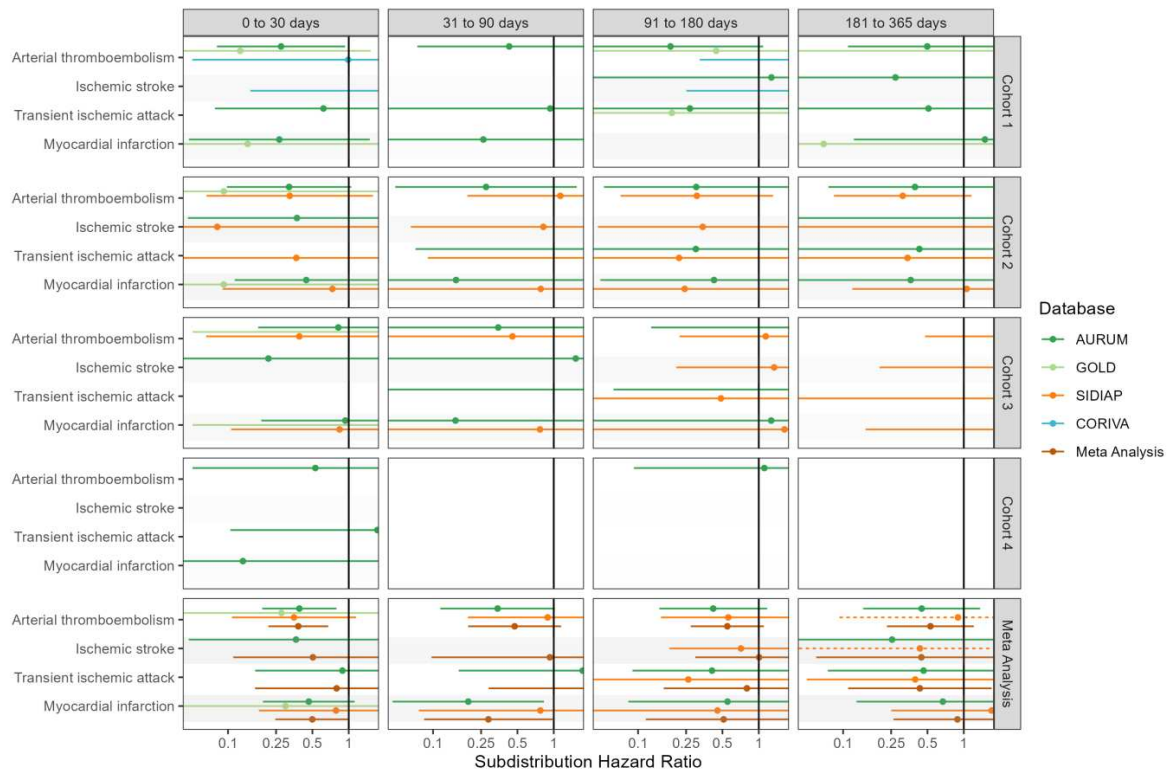


**Figure S26: Forest plots for vaccine effect (ChAdOx1 vaccine) on preventing arterial thrombosis/thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**

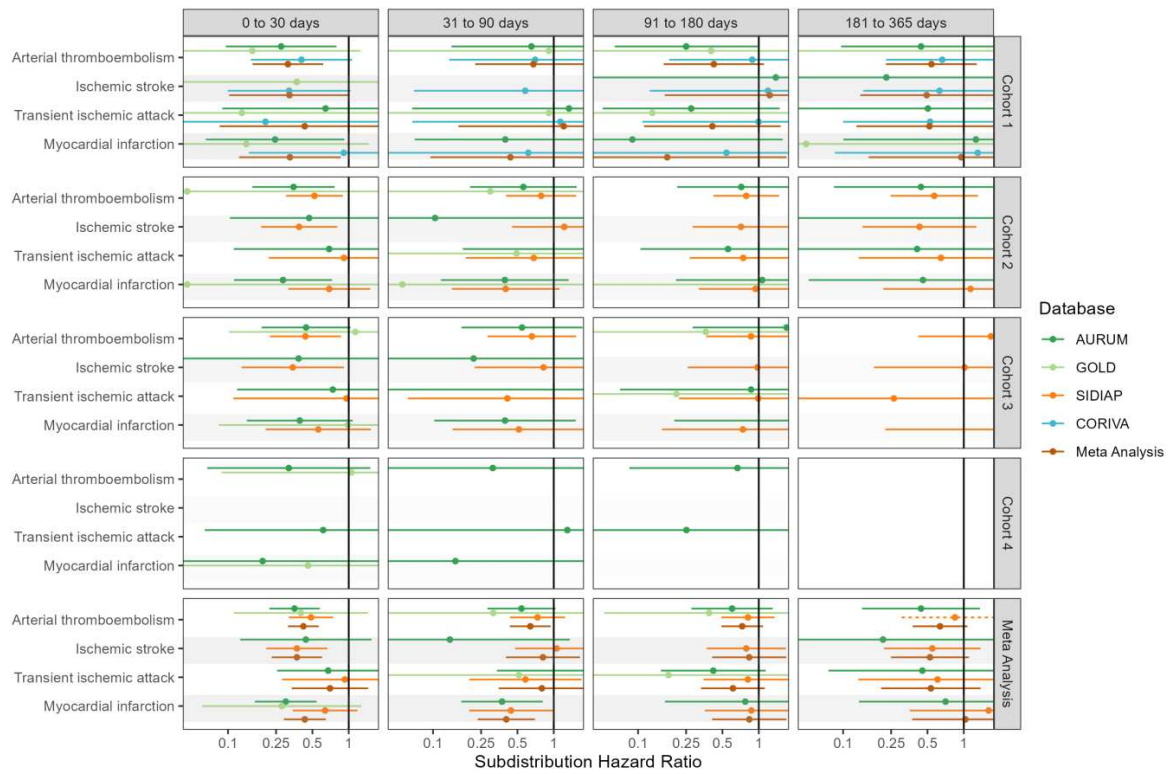




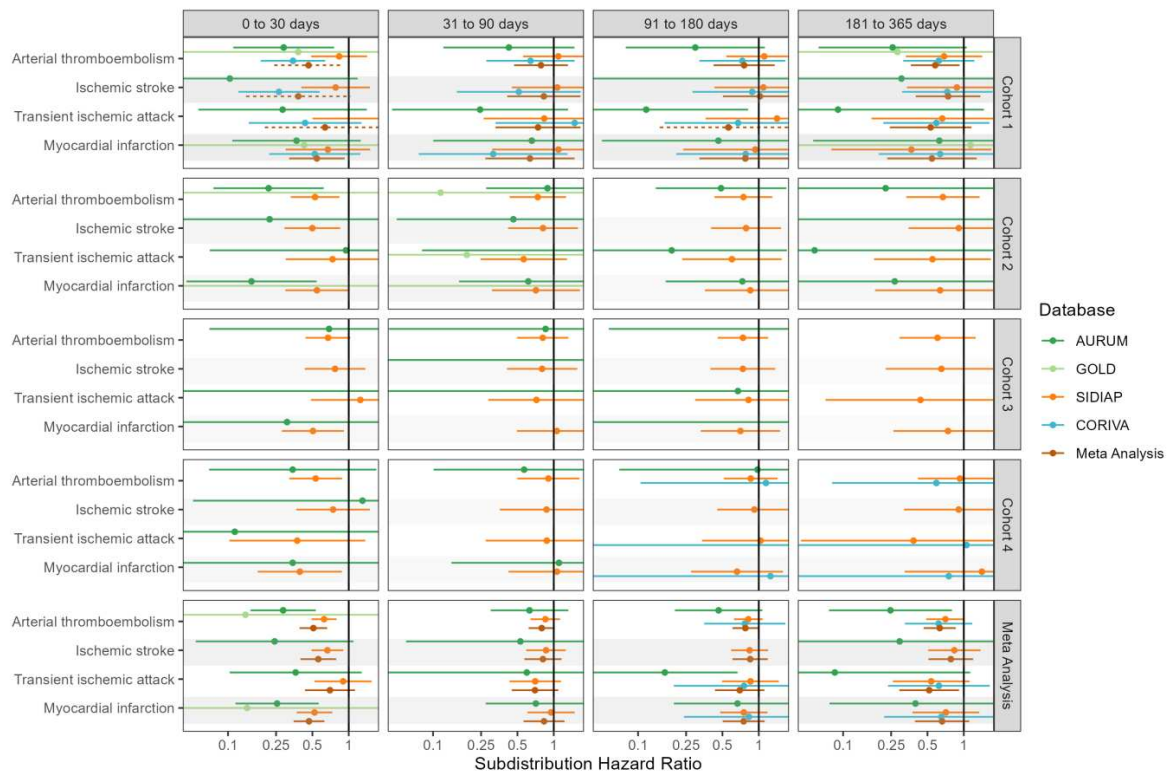
**Figure S27: Forest plots for vaccine effect (ChAdOx1 vaccine) on preventing arterial thrombosis/thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Follow-up ends at first vaccine dose after index date. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



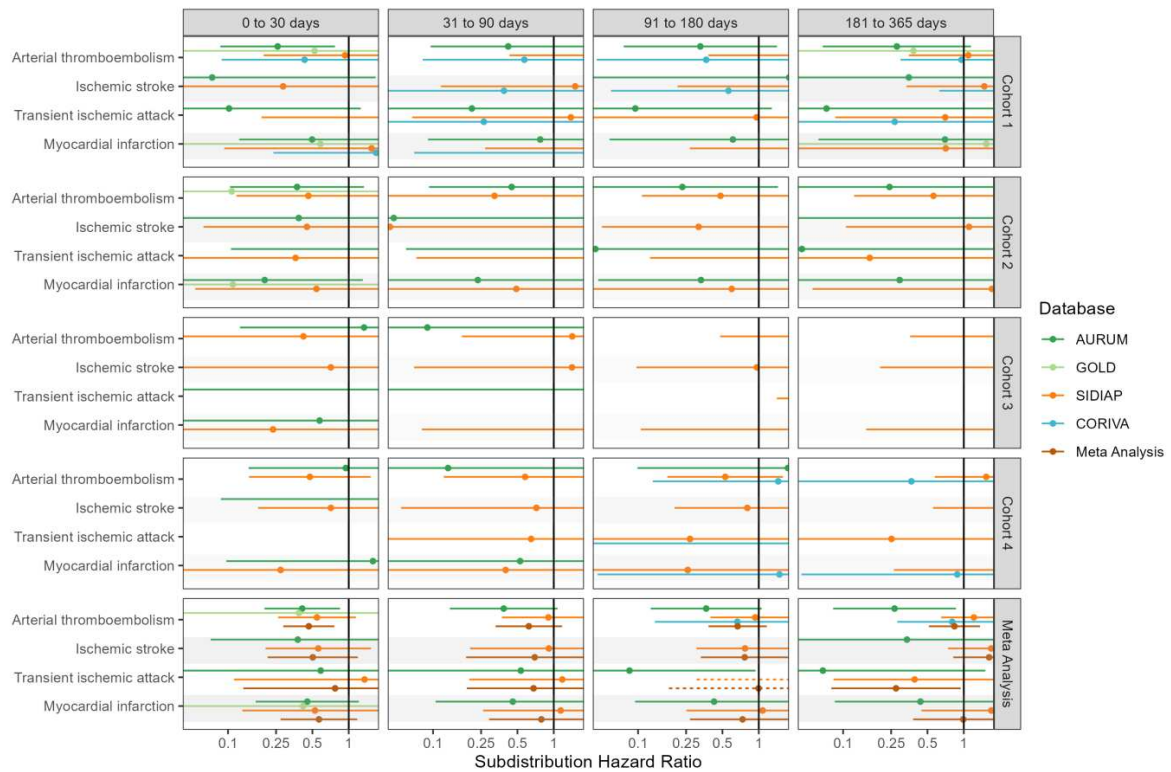
**Figure S28: Forest plots for vaccine effect (ChAdOx1 vaccine) on preventing arterial thrombosis/thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Only first outcome after COVID-19 captured. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



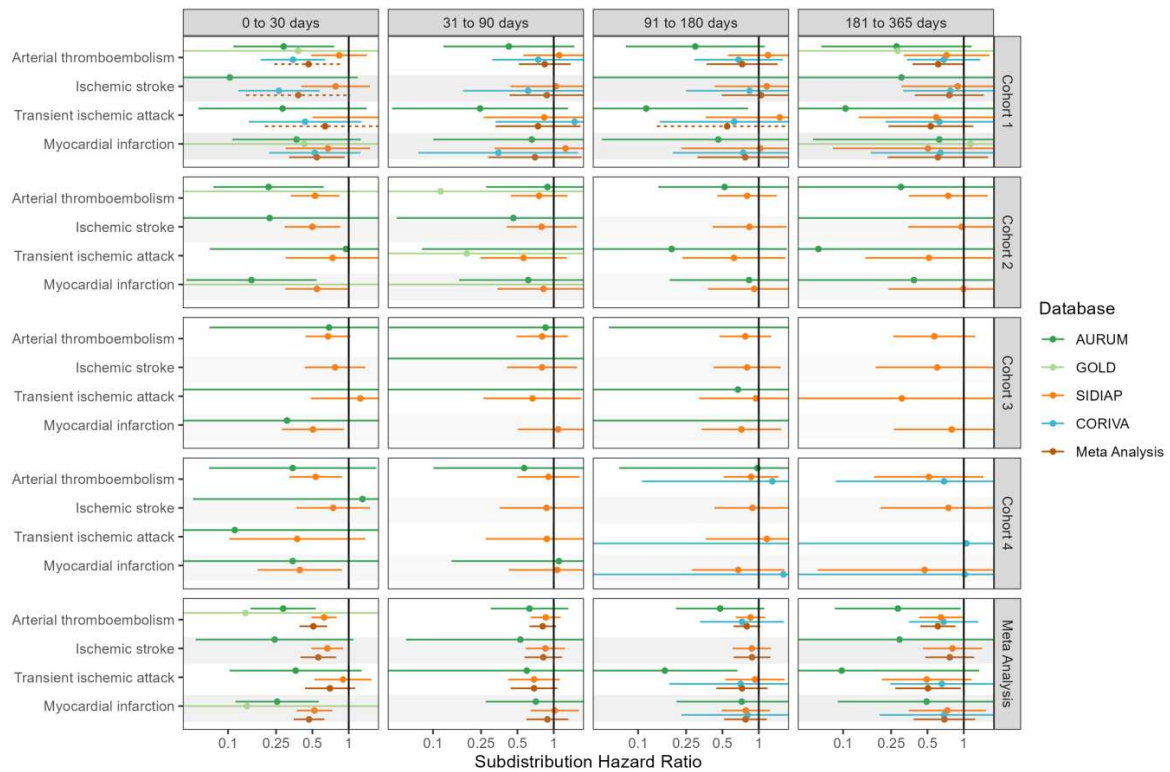
**Figure S29: Forest plots for vaccine effect (BNT162b2 vaccine) on preventing arterial thrombosis/thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



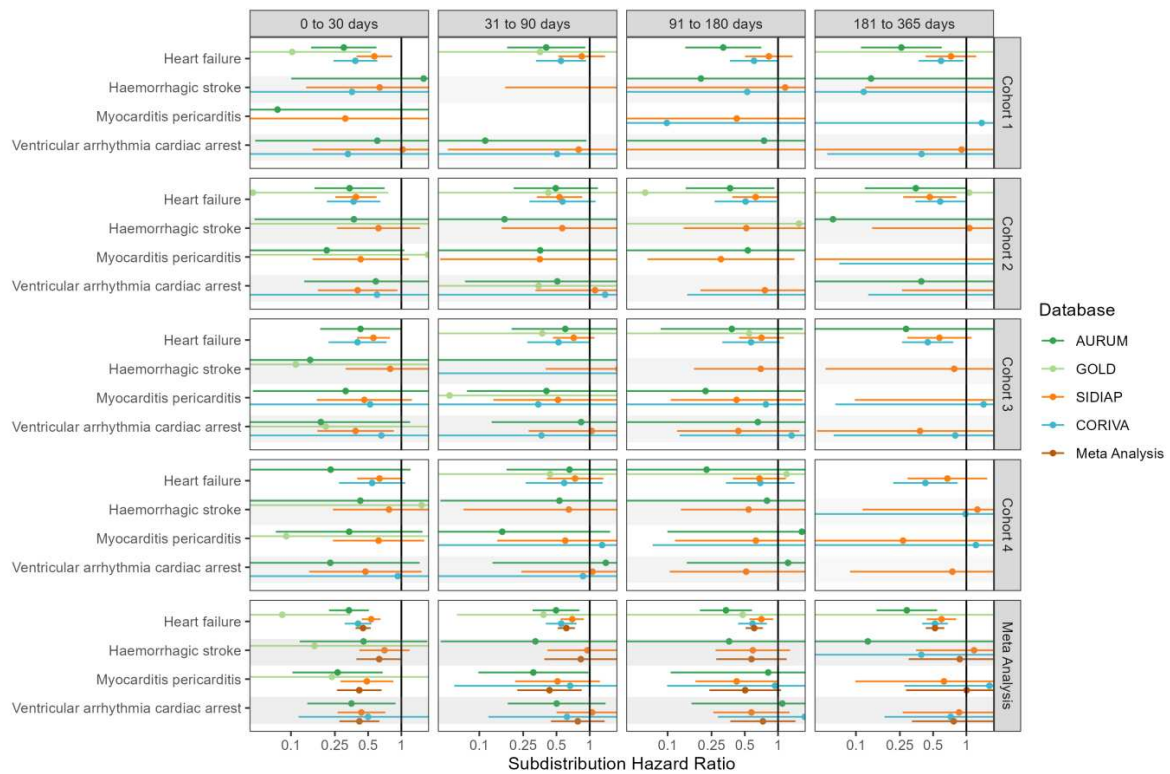
**Figure S30: Forest plots for vaccine effect (BNT162b2 vaccine) on preventing arterial thrombosis/thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Follow-up ends at first vaccine dose after index date. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



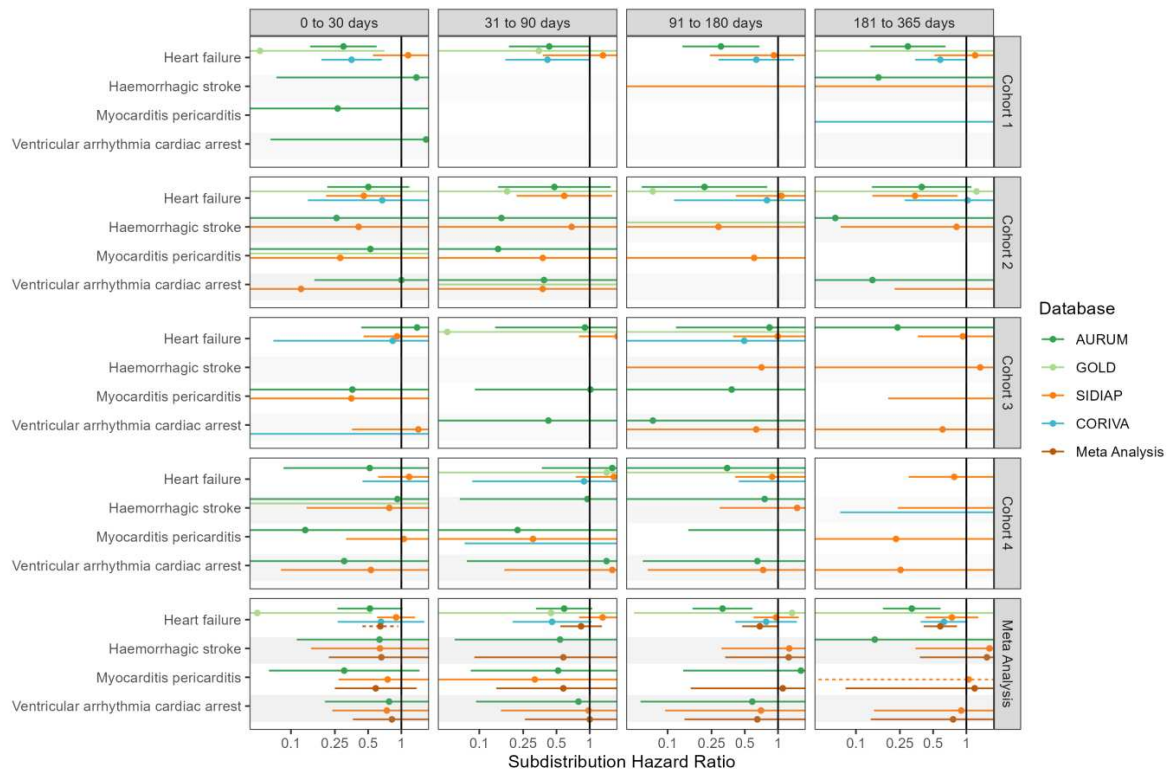
**Figure S31: Forest plots for vaccine effect (BNT162b2 vaccine) on preventing arterial thrombosis/thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Only first outcome after COVID-19 captured. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



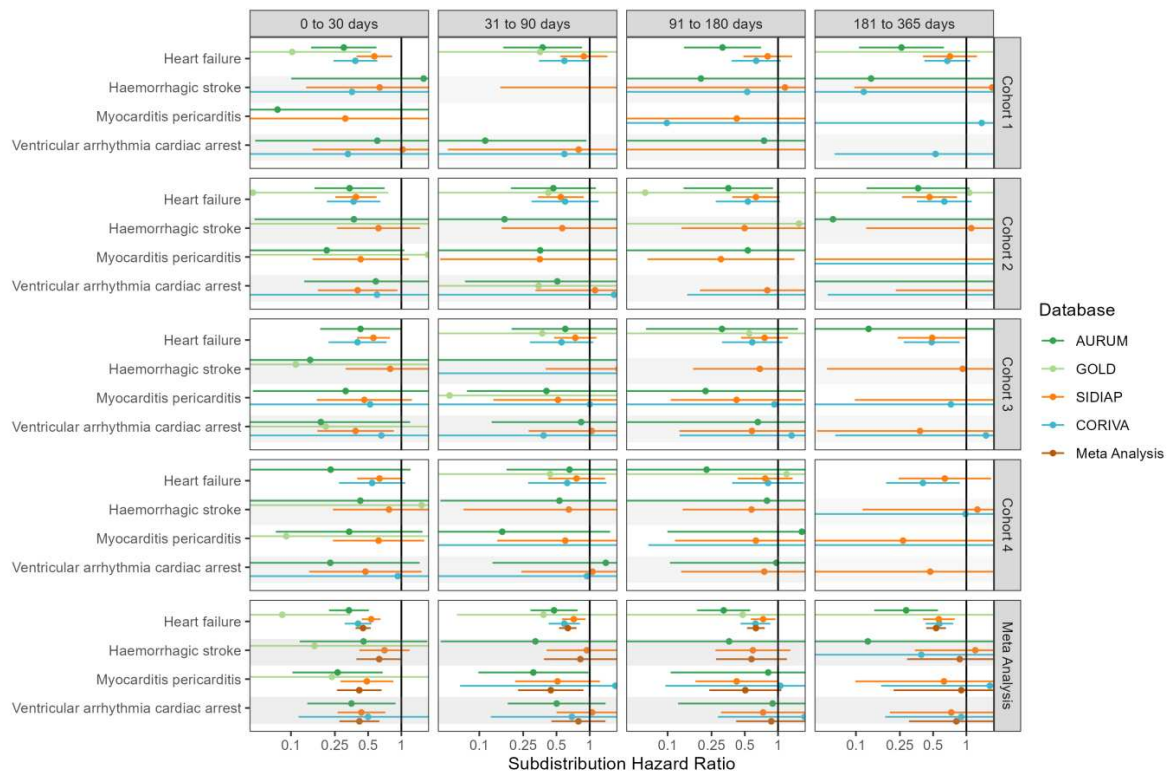
**Figure S32: Forest plots for vaccine effect (any COVID-19 vaccine) on preventing cardiac diseases and hemorrhagic stroke, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



**Figure S33: Forest plots for vaccine effect (any COVID-19 vaccine) on preventing cardiac diseases and hemorrhagic stroke, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Follow-up ends at first vaccine dose after index date. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**

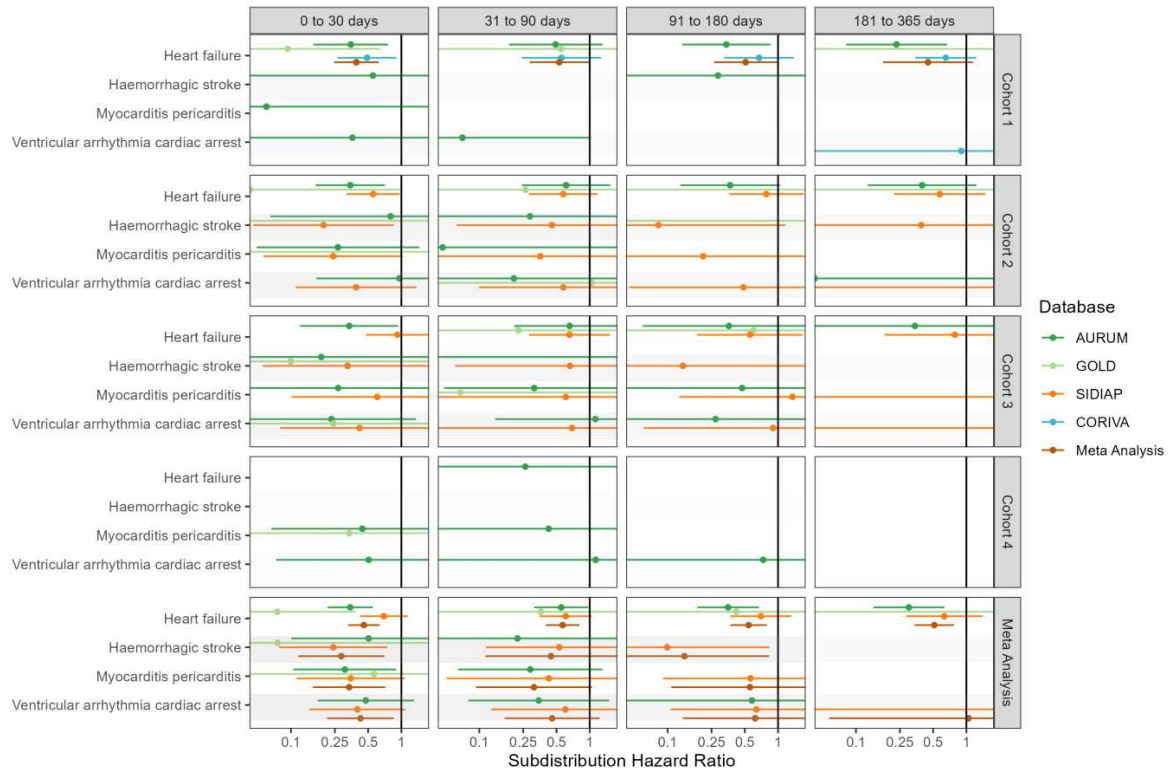


**Figure S34: Forest plots for vaccine effect (any COVID-19 vaccine) on preventing cardiac diseases and hemorrhagic stroke, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Only first outcome after COVID-19 captured. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**

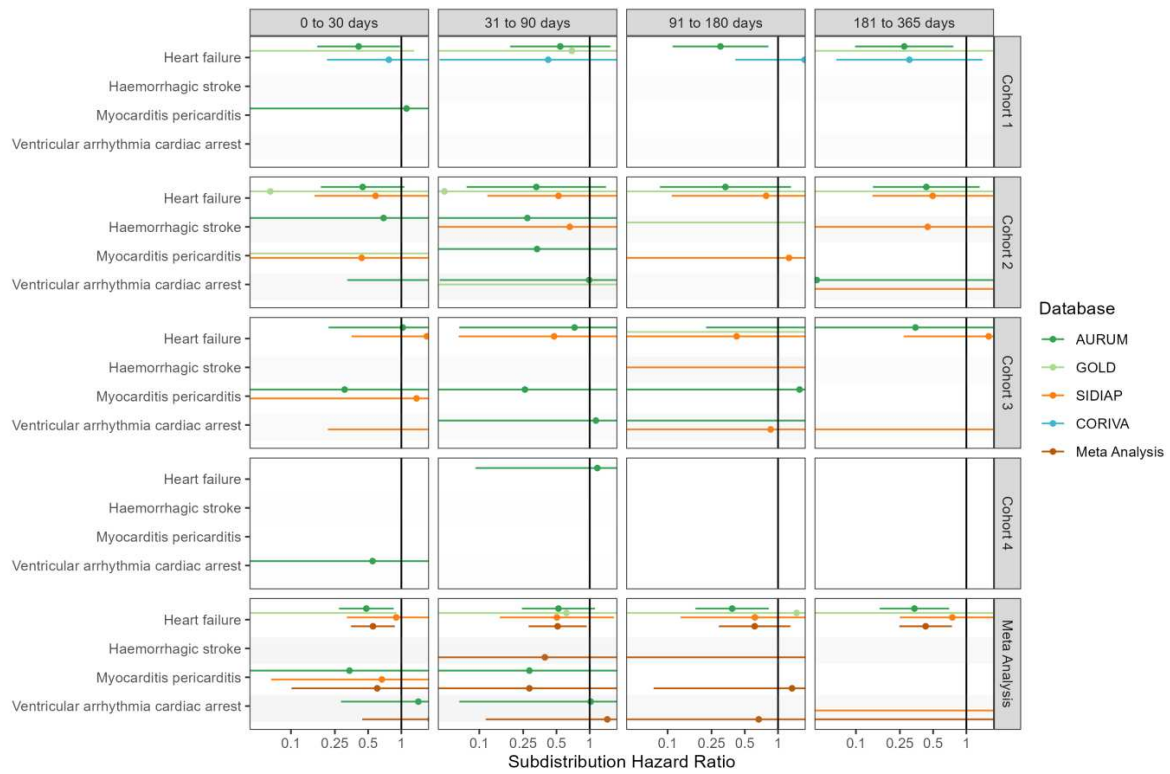




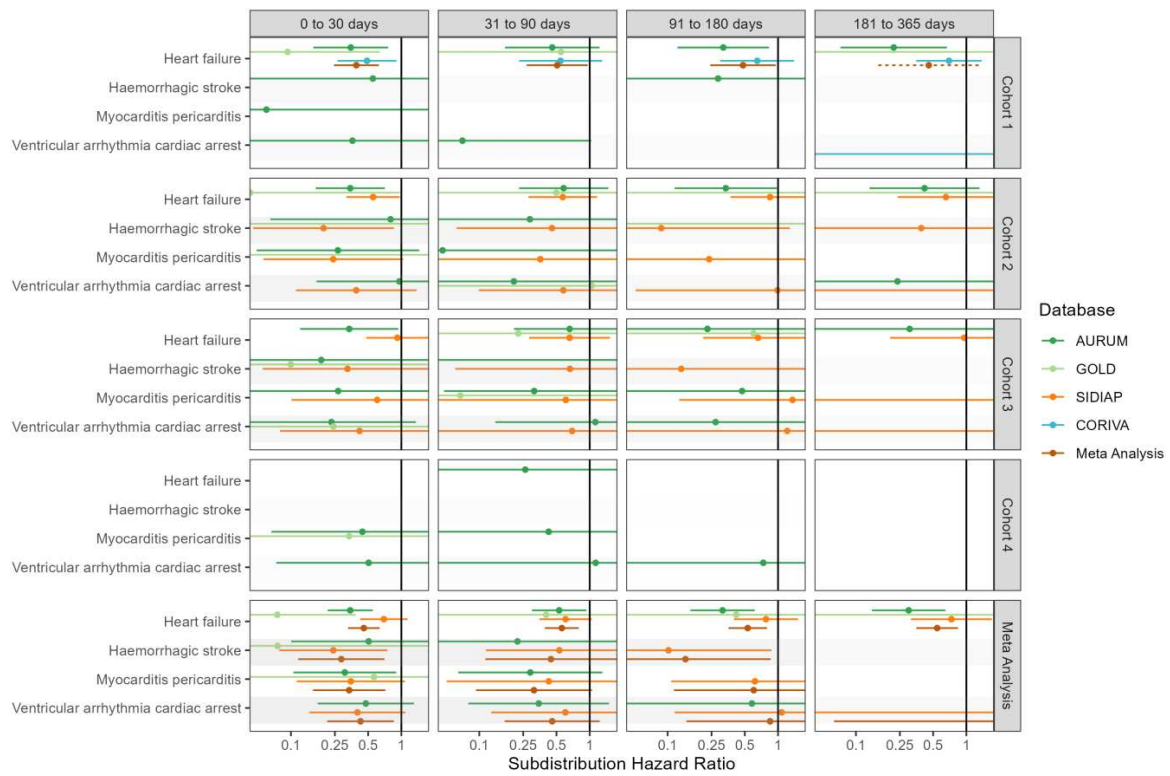
**Figure S35: Forest plots for vaccine effect (ChAdOx1 vaccine) on preventing cardiac diseases and hemorrhagic stroke, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



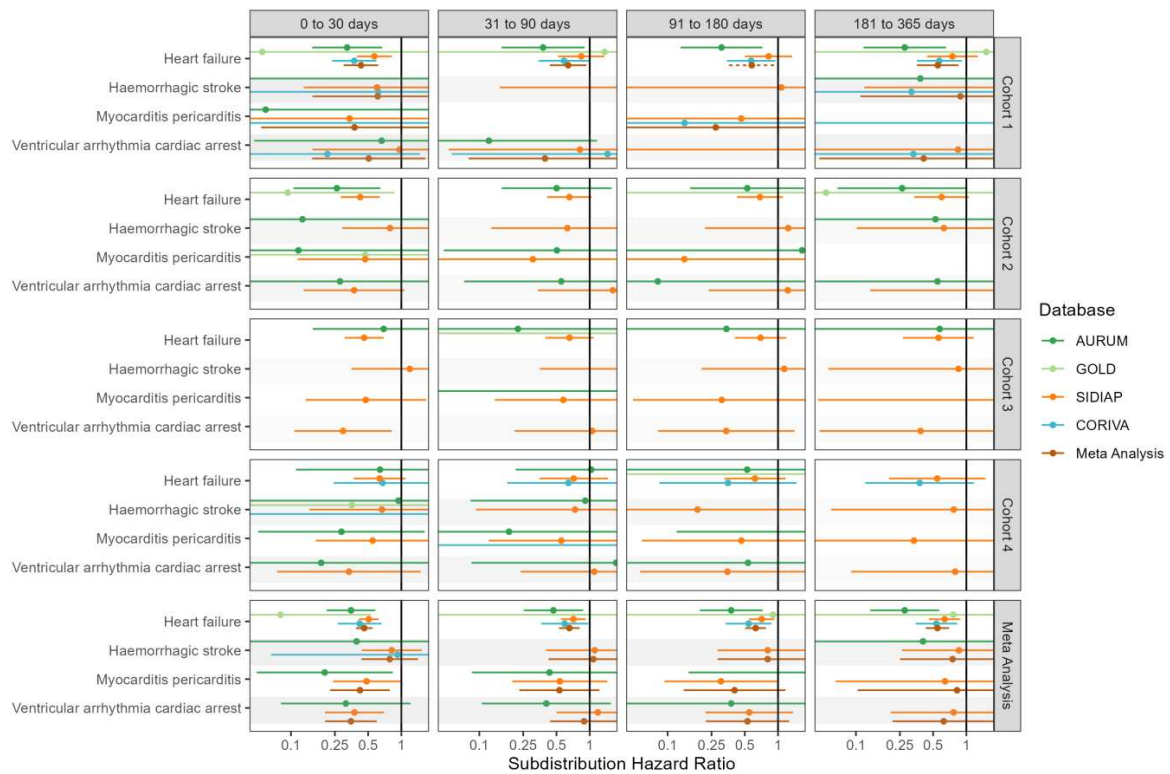
**Figure S36: Forest plots for vaccine effect (ChAdOx1 vaccine) on preventing cardiac diseases and hemorrhagic stroke, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Follow-up ends at first vaccine dose after index date. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



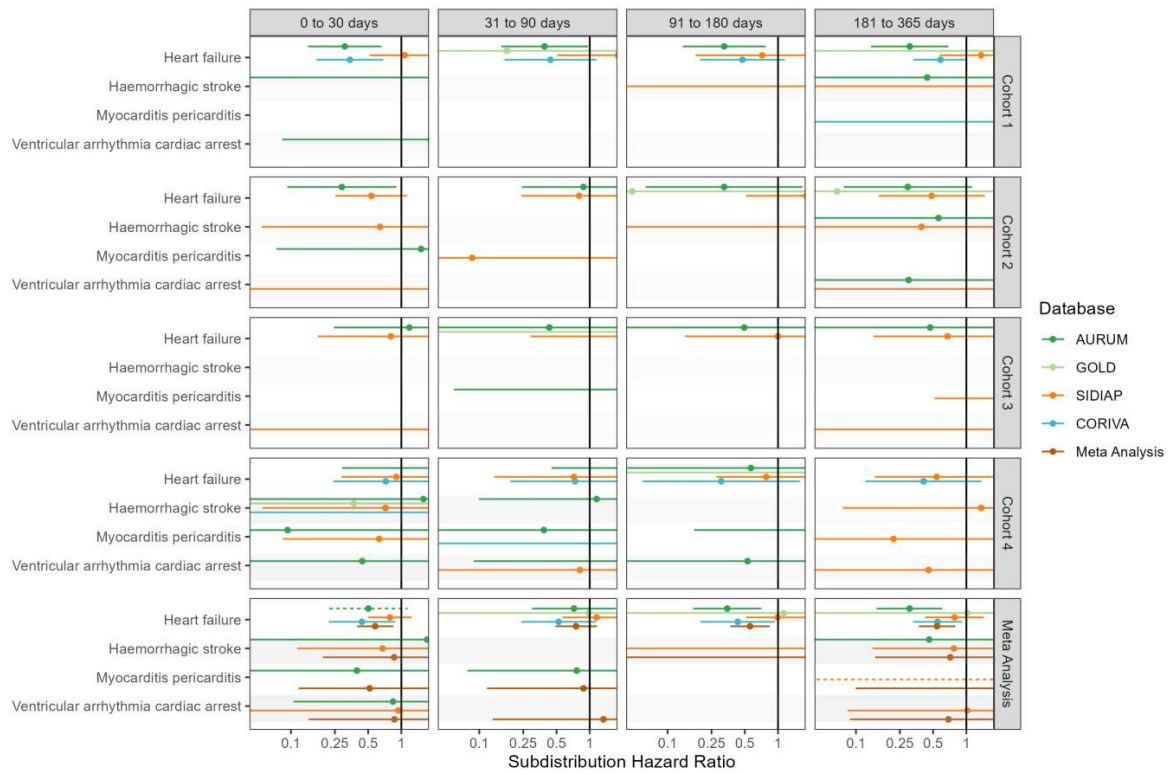
**Figure S37: Forest plots for vaccine effect (ChAdOx1 vaccine) on preventing cardiac diseases and hemorrhagic stroke, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Only first outcome after COVID-19 captured. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



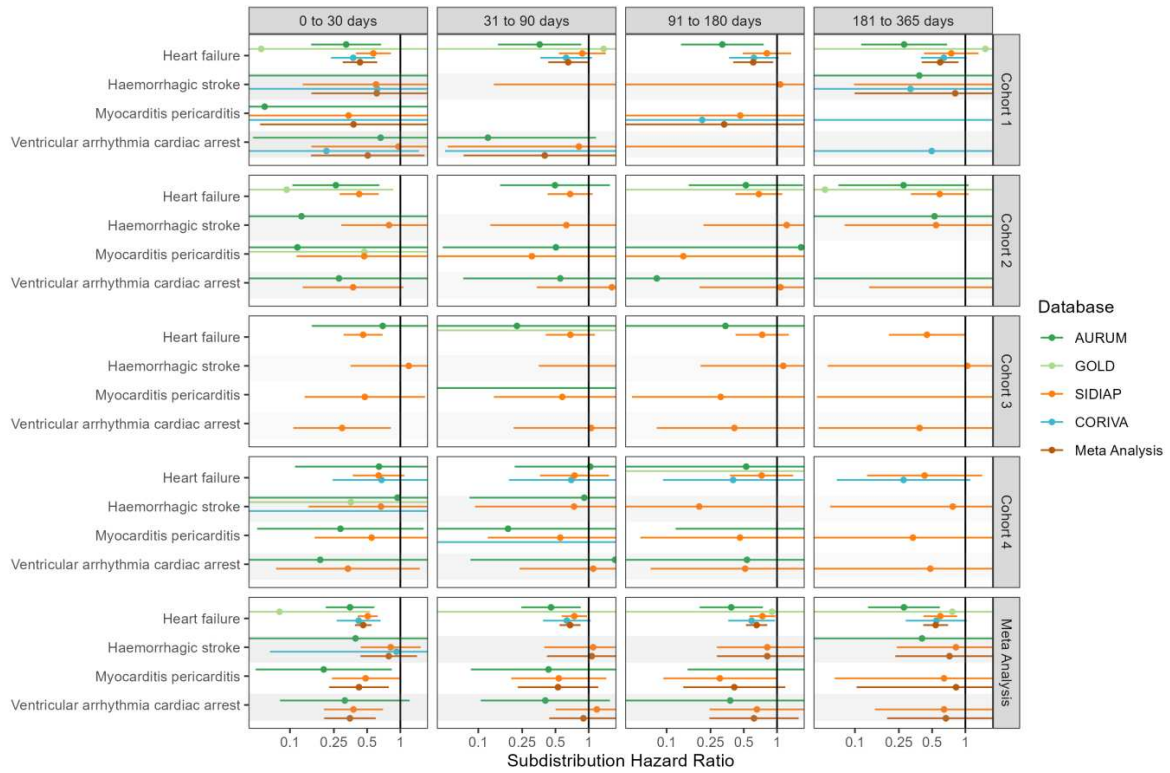
**Figure S38: Forest plots for vaccine effect (BNT162b2 vaccine) on preventing cardiac diseases and hemorrhagic stroke, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



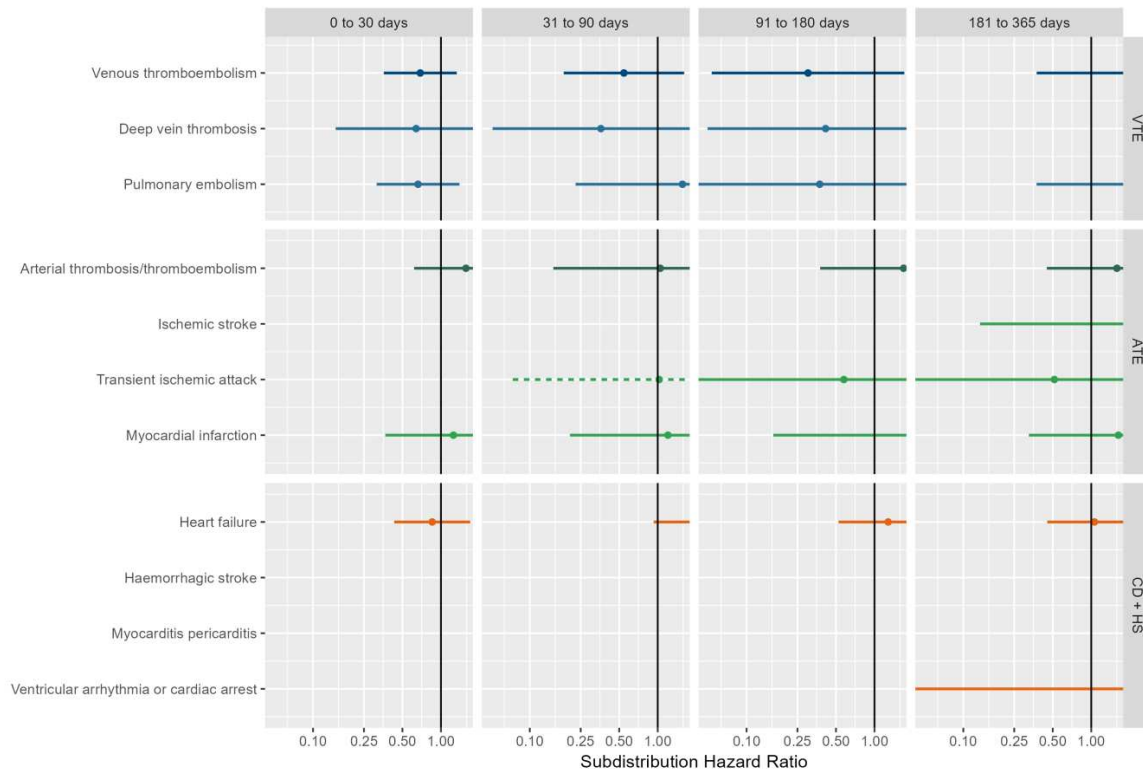
**Figure S39: Forest plots for vaccine effect (BNT162b2 vaccine) on preventing cardiac diseases and hemorrhagic stroke, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Follow-up ends at first vaccine dose after index date. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



**Figure S40: Forest plots for vaccine effect (BNT162b2 vaccine) on preventing cardiac diseases and hemorrhagic stroke, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Only first outcome after COVID-19 captured. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**

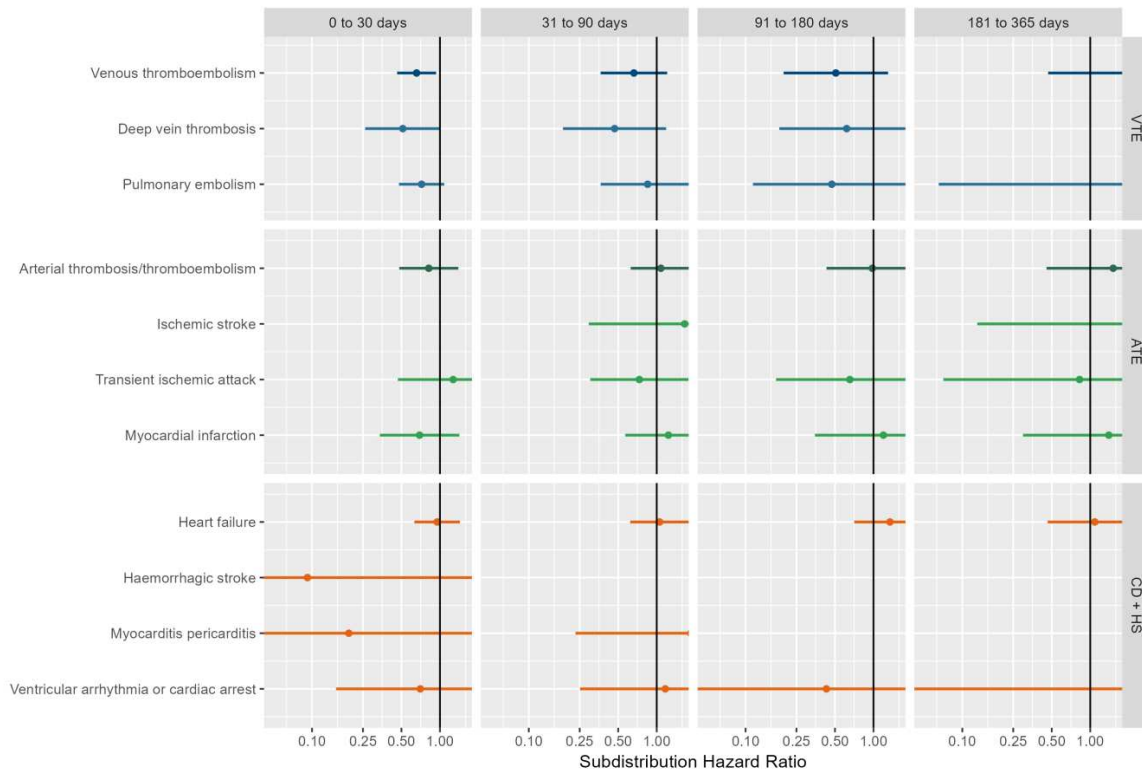


**Figure S41: Forest plots for comparative effect, meta-analysis across cohorts and databases. Follow-up ends at first vaccine dose after index date. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



VTE = Venous thromboembolism, ATE = Arterial thrombosis/thromboembolism, CD + HS = Cardiac diseases and Hemorrhagic stroke

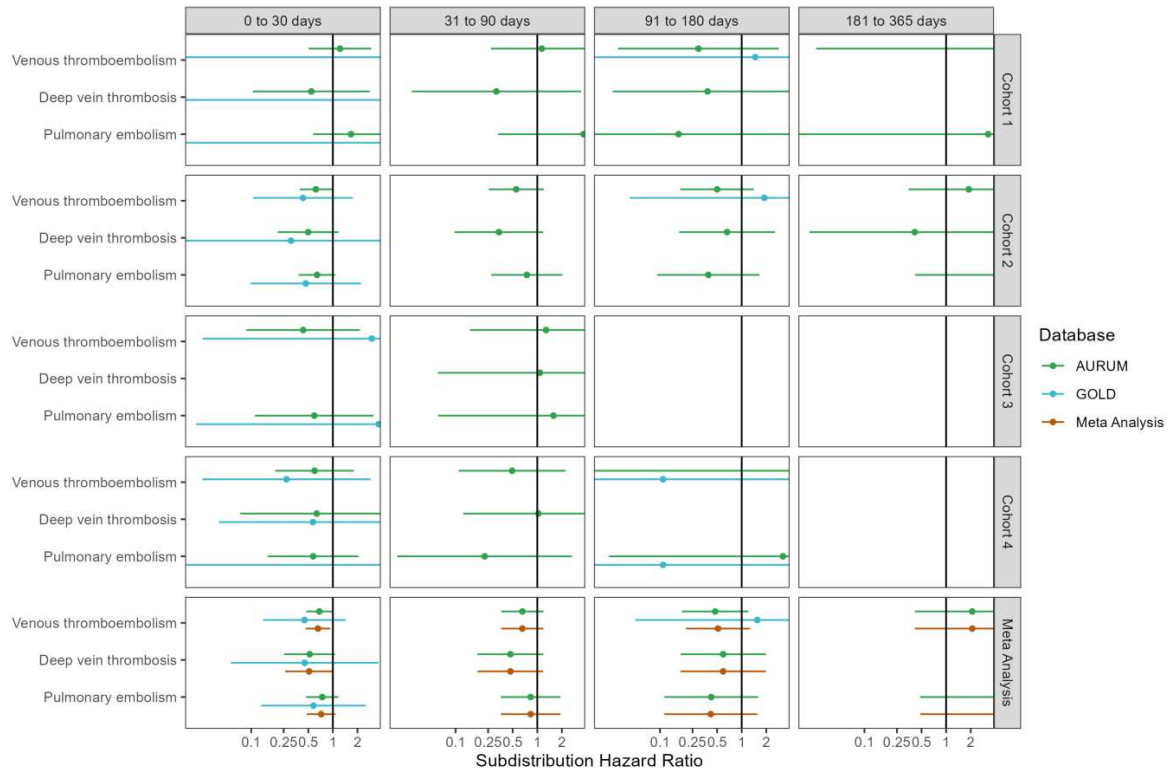
**Figure S42: Forest plots for comparative effect, meta-analysis across cohorts and databases. Only first outcome after COVID-19 captured. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



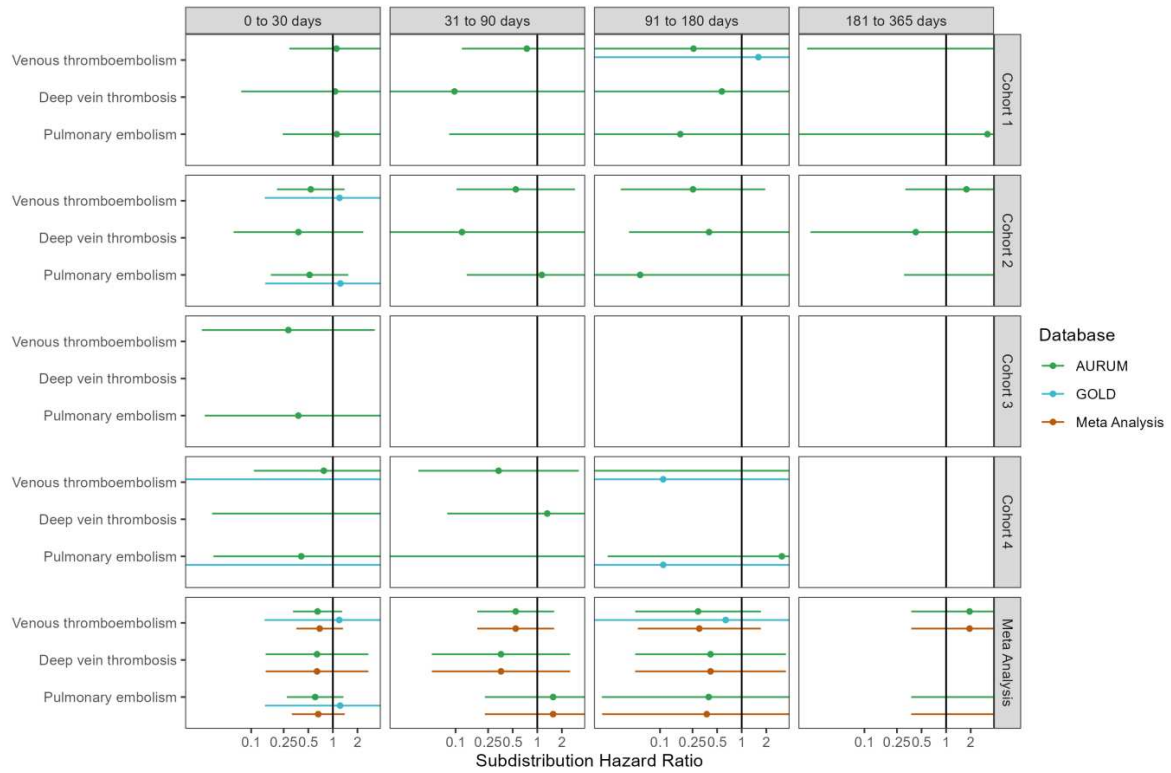
VTE = Venous thromboembolism, ATE = Arterial thrombosis/thromboembolism, CD + HS = Cardiac diseases and Hemorrhagic stroke



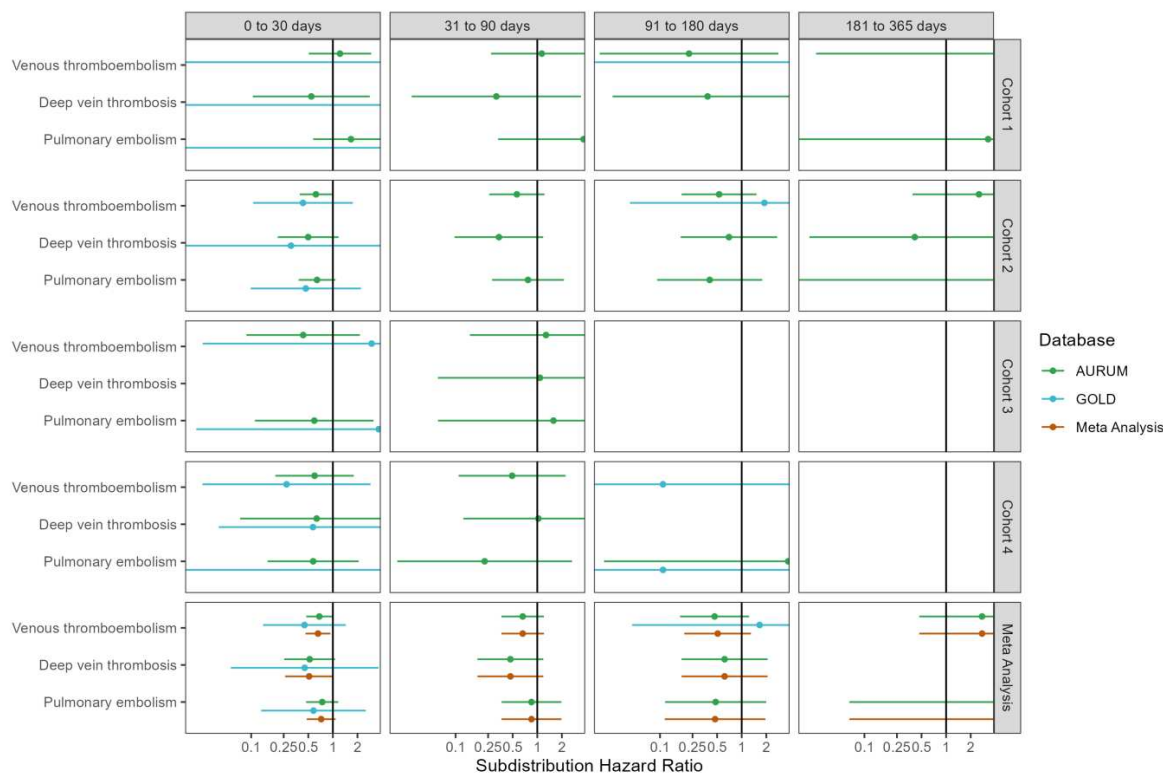
**Figure S43: Forest plots for comparative effect on preventing venous thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



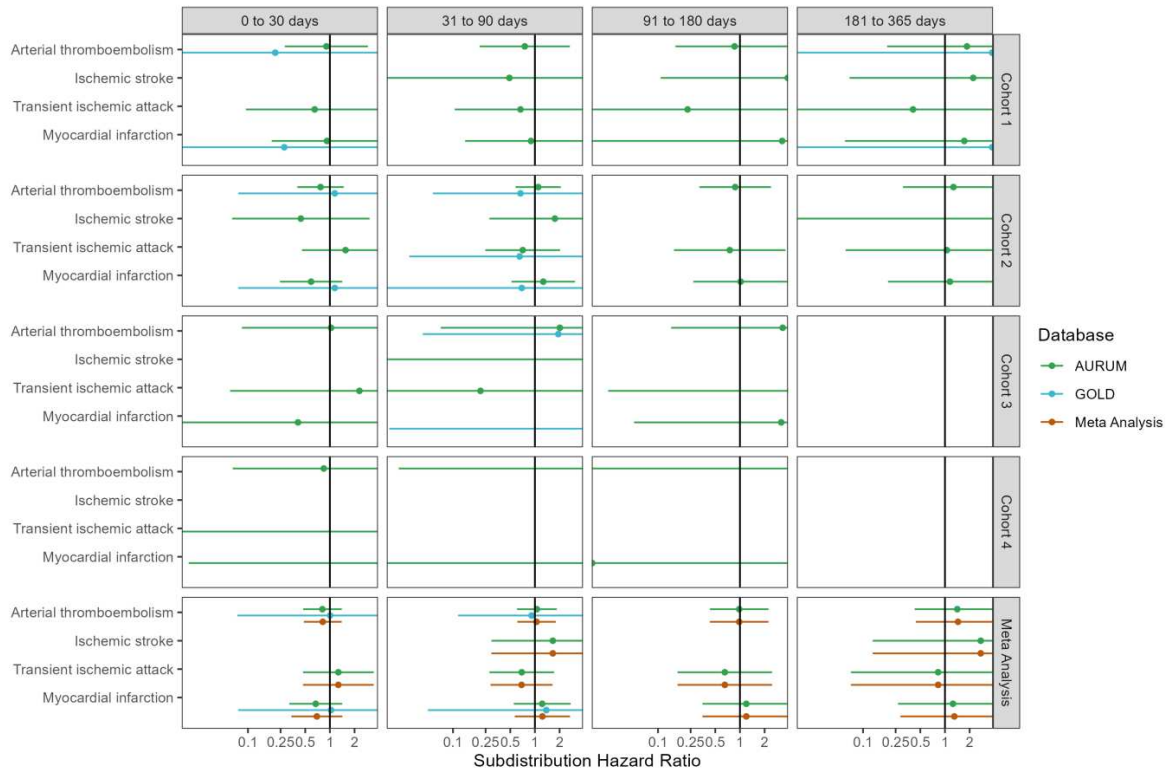
**Figure S44: Forest plots for comparative effect on preventing venous thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Follow-up ends at first vaccine dose after index date. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



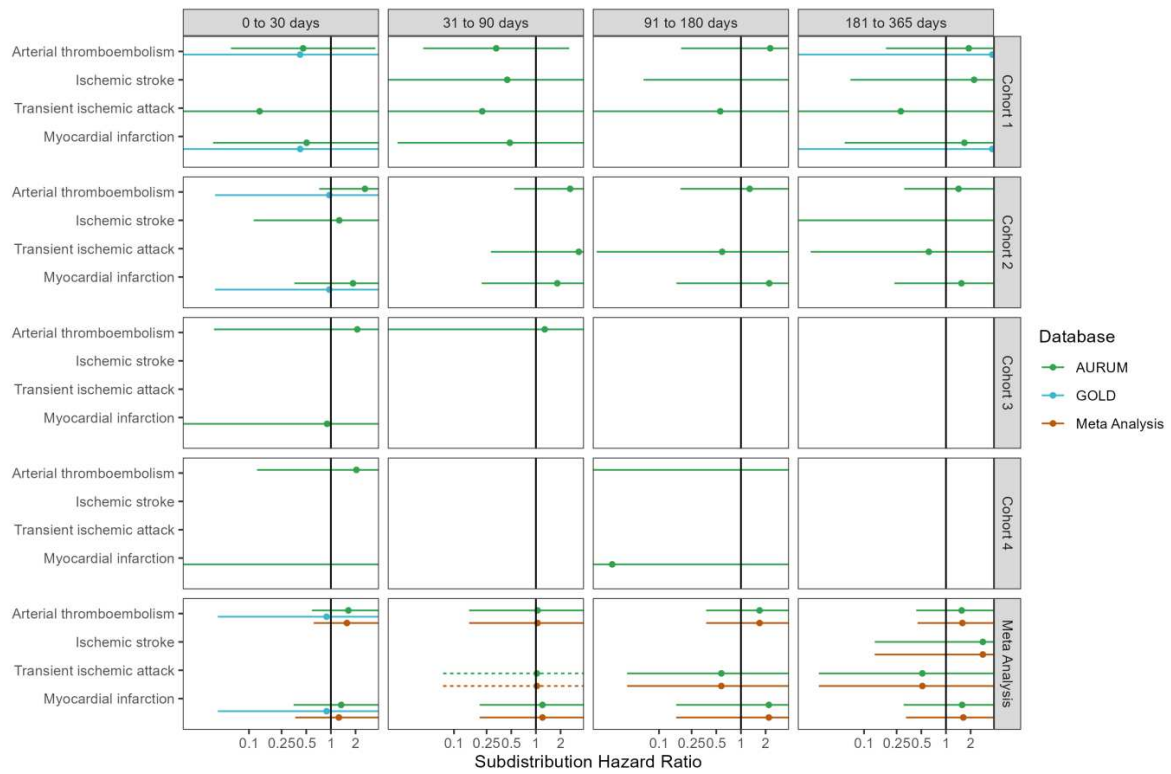
**Figure S45: Forest plots for comparative effect on preventing venous thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Only first outcome after COVID-19 captured. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



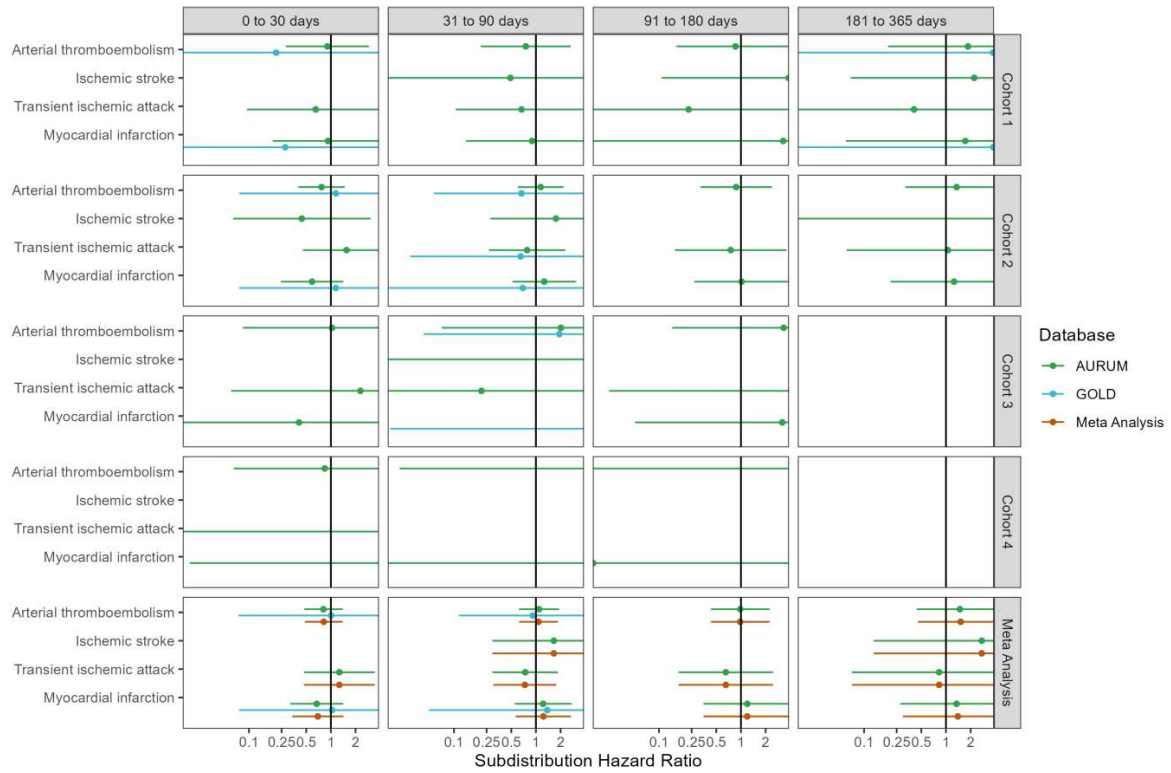
**Figure S46: Forest plots for comparative effect on preventing arterial thrombosis/thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel).** Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .



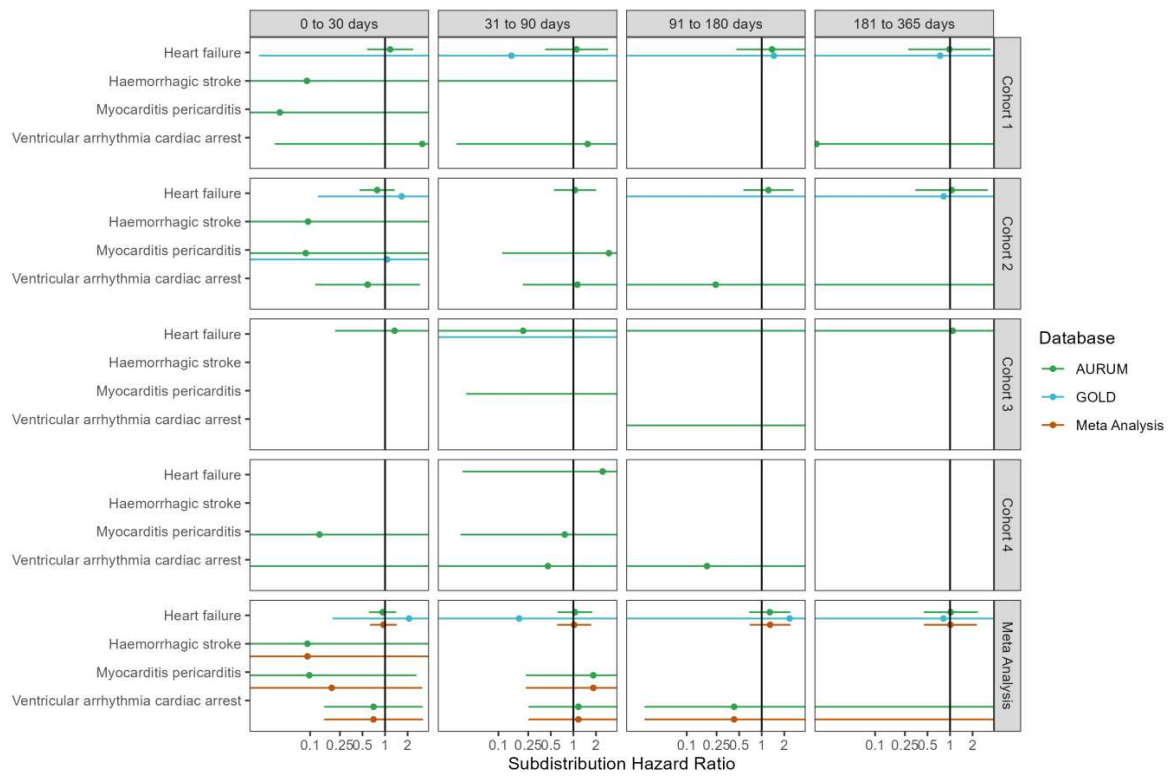
**Figure S47: Forest plots for comparative effect on preventing arterial thrombosis/thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Follow-up ends at first vaccine dose after index date. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



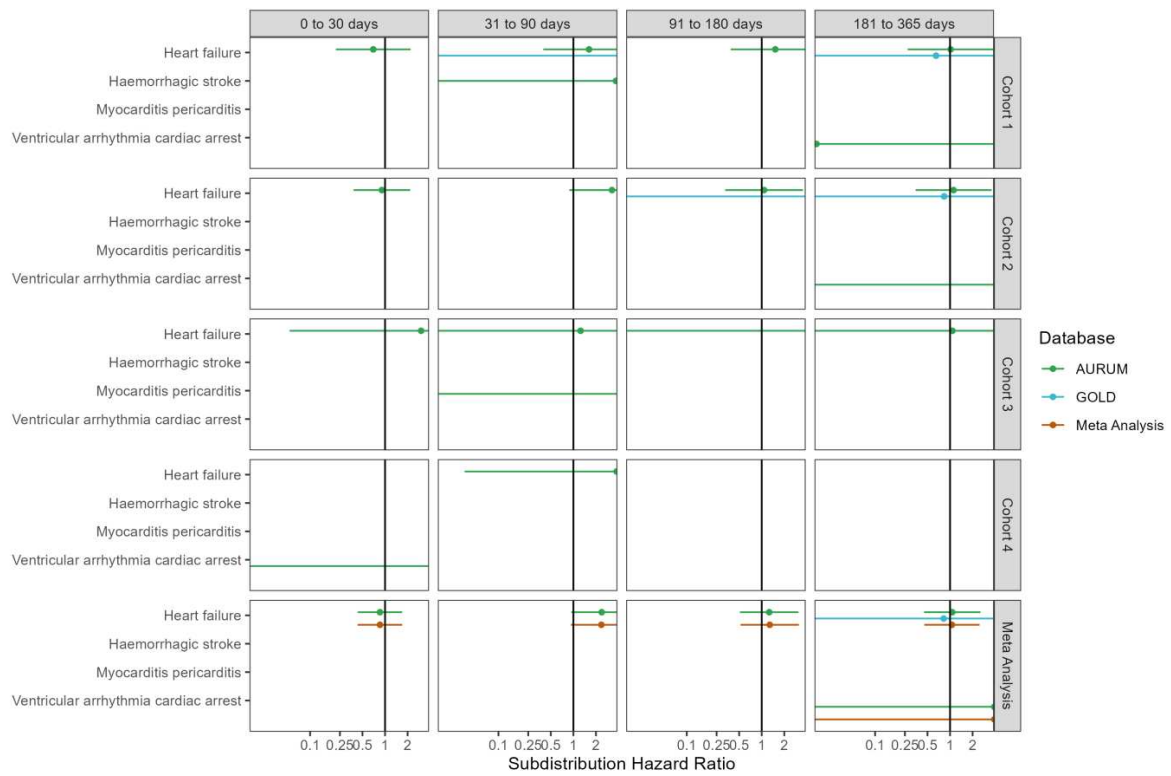
**Figure S48: Forest plots for comparative effect on preventing arterial thrombosis/thromboembolism complications, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Only first outcome after COVID-19 captured. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



**Figure S49: Forest plots for comparative effect on preventing cardiac diseases and hemorrhagic stroke, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**



**Figure S50: Forest plots for comparative effect on preventing cardiac diseases and hemorrhagic stroke, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Follow-up ends at first vaccine dose after index date. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**





**Figure S51: Forest plots for comparative effect on preventing cardiac diseases and hemorrhagic stroke, for each cohort and database (meta-analysis estimates across cohorts in the last panel). Only first outcome after COVID-19 captured. Dashed line represents a level of heterogeneity  $I^2 > 0.4$ .**

