

Supplementary Figure S1

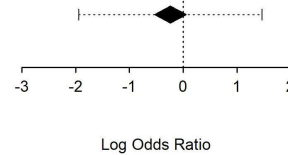
H1N1

a

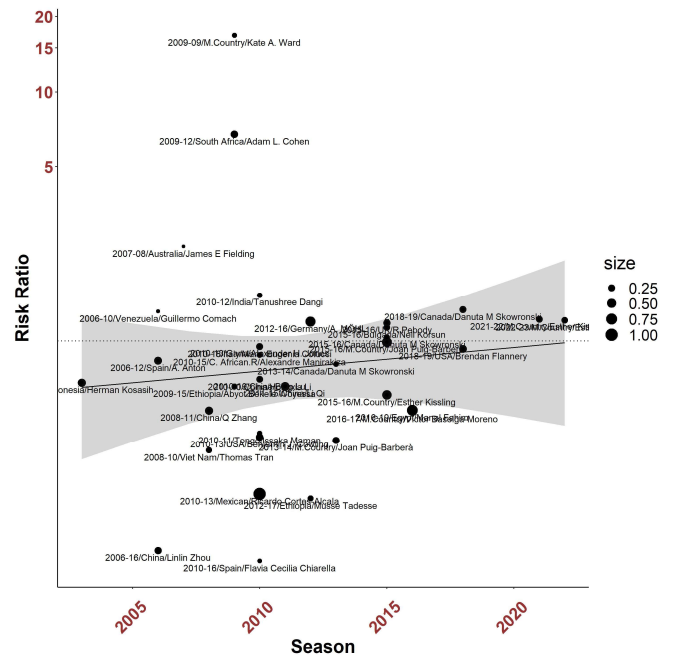
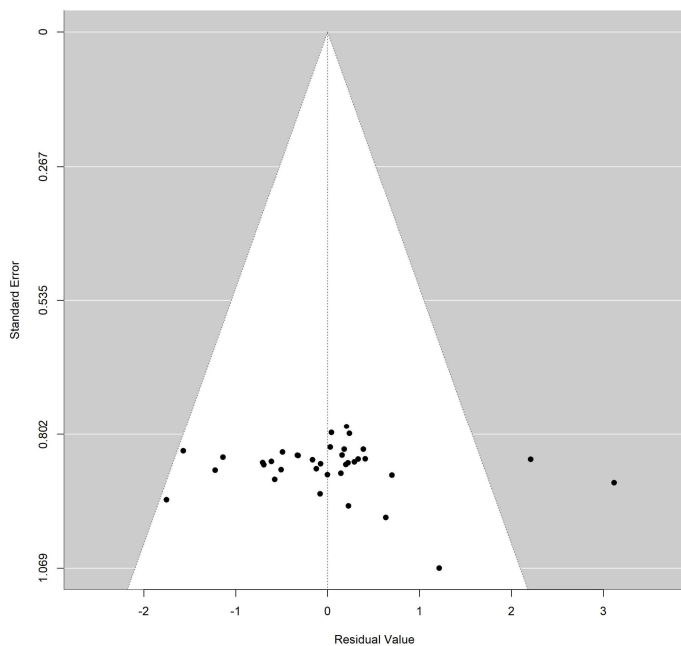
>5 vs <5

Author(s) and Year	>5y		<5y		weights	Log[OR] [95% CI]
	Ctrl	H1N1	Ctrl	H1N1		
2003-07/Indonesia/Herman Kosasih	12516	653	4104	146	2.9%	-0.38 [-0.57, -0.20]
2006-10/Venezuela/Guillermo Comach	659	22	114	5	2.2%	0.27 [-0.72, 1.26]
2006-12/Spain/A. Antón	1721	610	524	155	2.9%	-0.18 [-0.38, 0.02]
2006-16/China/Linlin Zhou	5514	903	2951	70	2.9%	-1.93 [-2.18, -1.68]
2007-08/Australia/James E Fielding	405	46	11	3	1.8%	0.88 [-0.44, 2.19]
2008-10/Viet Nam/Thomas Tran	603	184	306	34	2.8%	-1.01 [-1.40, -0.62]
2008-11/China/Q Zhang	3028	639	1419	158	2.9%	-0.64 [-0.82, -0.45]
2009-09/M. Country/Kate A. Ward	1756	58	36	20	2.6%	2.82 [2.22, 3.43]
2009-12/South Africa/Adam L. Cohen	4280	171	616	167	2.9%	1.91 [1.69, 2.14]
2009-15/Ethiopia/Abiyot Bekele Woyessa	2072	238	344	26	2.8%	-0.42 [-0.84, 0.00]
2010-10/China/Hongxia Li	200	17	269	16	2.5%	-0.36 [-1.06, 0.35]
2010-11/Tongo/Issaka Maman	327	41	392	21	2.7%	-0.85 [-1.40, -0.30]
2010-12/India/Tanushree Dangi	1894	70	389	22	2.7%	0.43 [-0.07, 0.92]
2010-13/USA/Benjamin J. Cowling	4864	469	2039	81	2.9%	-0.89 [-1.13, -0.65]
2010-13/Ghana/Alexander H. Jones	673	14	504	10	2.4%	-0.05 [-0.87, 0.77]
2010-13/Mexican/Ricardo Cortes-Alcala	38292	9458	16990	1021	3.0%	-1.41 [-1.48, -1.35]
2010-15/C. African.R/Alexandre Manirakiza	1888	31	3048	44	2.8%	-0.13 [-0.59, 0.33]
2010-16/Spain/Flavia Cecilia Chiarella	1747	135	688	7	2.5%	-2.03 [-2.79, -1.26]
2010-18/Italy/Maria Eugenia Colucci	349	95	701	181	2.9%	-0.05 [-0.33, 0.23]
2010-19/China/Bing Lu	2695	167	1422	62	2.9%	-0.35 [-0.65, -0.05]
2011-15/China/Li Qi	12523	472	9004	224	2.9%	-0.42 [-0.58, -0.25]
2012-16/Germany/A. MÖHL	5606	554	9040	1068	3.0%	0.18 [0.07, 0.29]
2012-17/Ethiopia/Musse Tadesse	3119	264	1366	27	2.8%	-1.45 [-1.86, -1.05]
2013-14/Canada/Danuta M Skowronski	624	340	59	26	2.7%	-0.21 [-0.69, 0.27]
2013-14/M. Country/Joan Puig-Barberà	2530	285	1687	76	2.9%	-0.92 [-1.18, -0.66]
2015-16/Canada/Danuta M Skowronski	835	475	85	50	2.8%	0.03 [-0.33, 0.40]
2015-16/Bulgaria/Neli Korsun	517	131	265	76	2.9%	0.12 [-0.20, 0.44]
2015-16/M. Country/Esther Kissling	4567	1903	1437	365	2.9%	-0.49 [-0.62, -0.37]
2015-16/M. Country/Joan Puig-Barberà	4505	857	2961	558	2.9%	-0.01 [-0.13, 0.11]
2015-16/UK/R Pebody	2396	676	273	91	2.9%	0.17 [-0.09, 0.42]
2016-17/M. Country/Victor Baselga-Moreno	3928	53	3267	23	2.7%	-0.65 [-1.14, -0.16]
2016-19/Egypt/Manal Fahim	24025	2436	10323	554	3.0%	-0.64 [-0.73, -0.54]
2018-19/Canada/Danuta M Skowronski	931	733	119	125	2.9%	0.29 [0.02, 0.56]
2018-19/USA/Brendan Flannery	3088	435	977	128	2.9%	-0.07 [-0.28, 0.14]
2021-22/M. Country/Esther Kissling	7842	198	1784	55	2.9%	0.20 [-0.10, 0.50]
2022-23/M. Country/Esther Kissling	98135	1439	2368	42	2.9%	0.19 [-0.12, 0.50]

RE Model



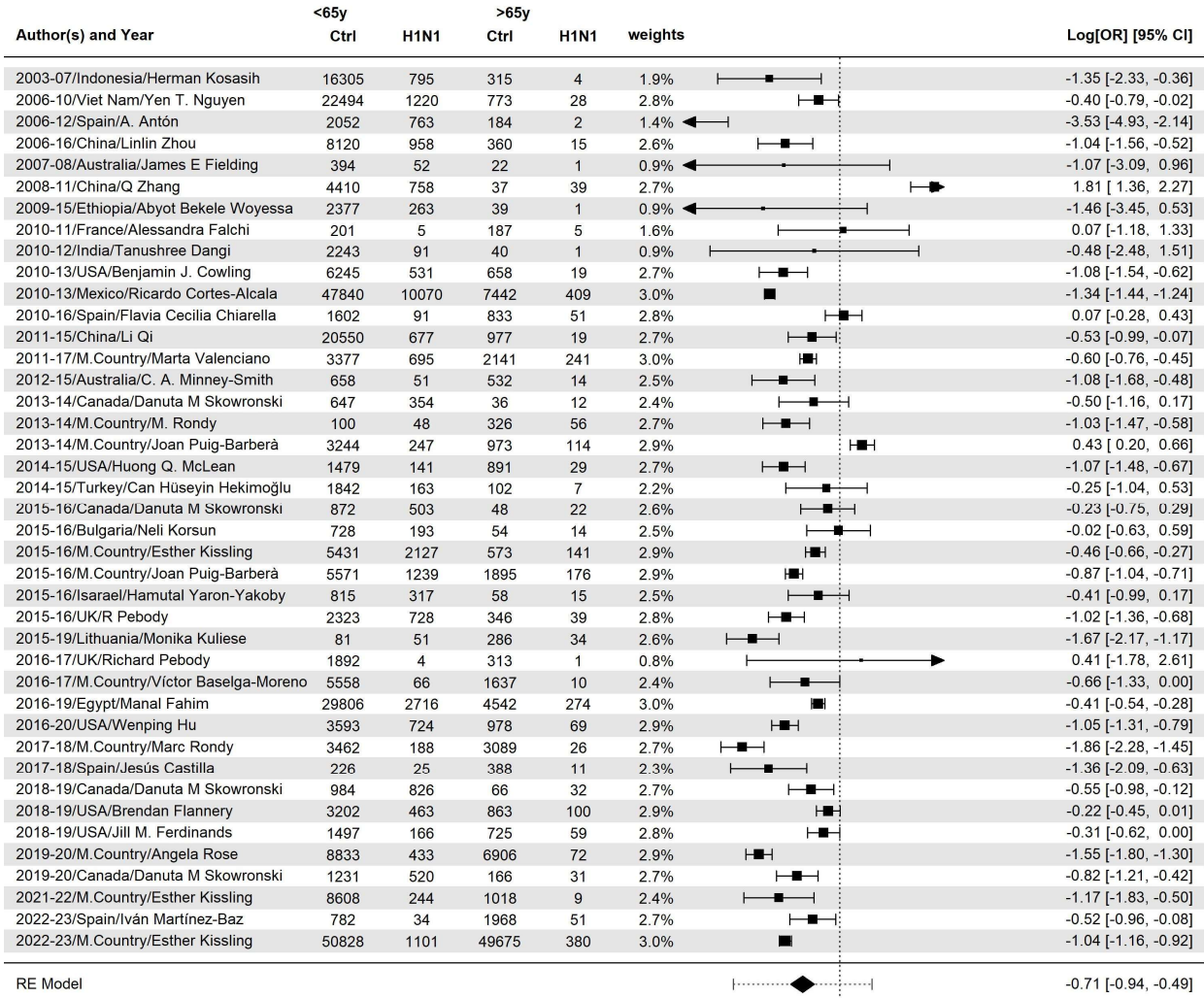
Heterogeneity: $\tau^2 = 0.73$; $\chi^2 = 1860.62$, $df = 35$ ($P < 0.01$) ; $I^2 = 98\%$
 Test for overall effect: $Z = -1.62$ ($P = 0.11$)



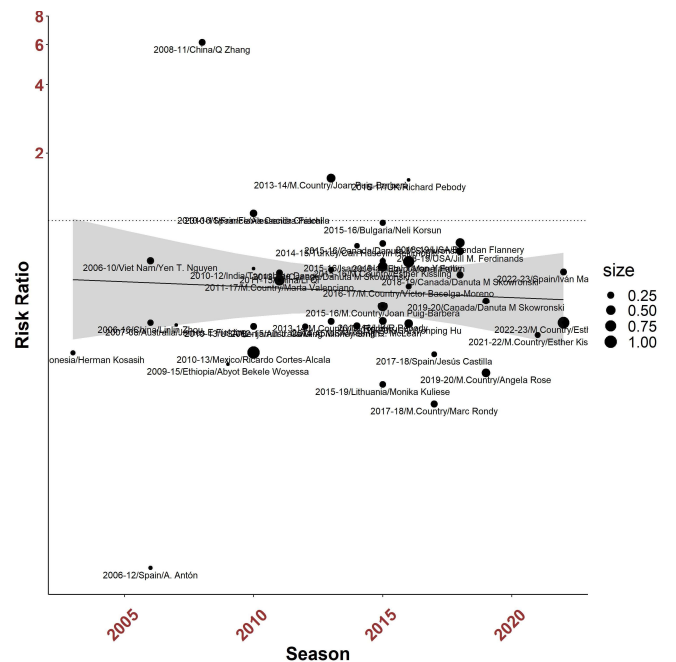
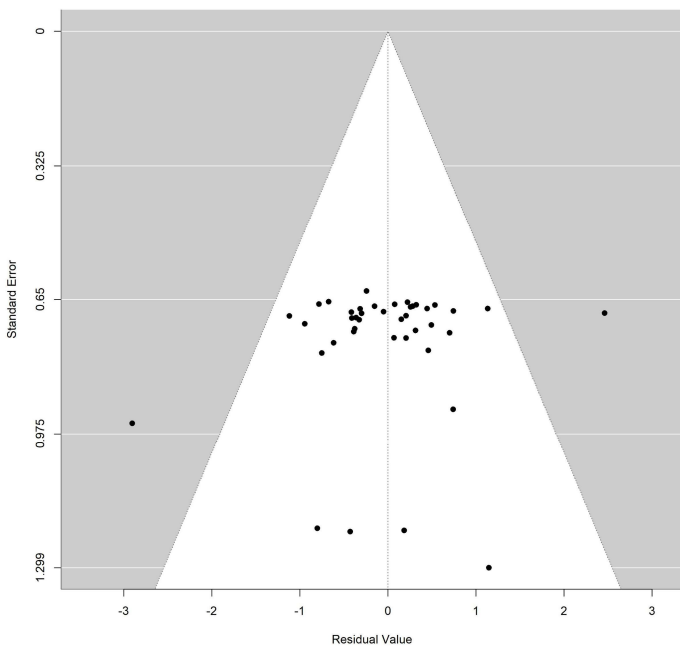
H1N1

b

<65 vs >65



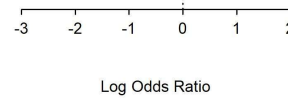
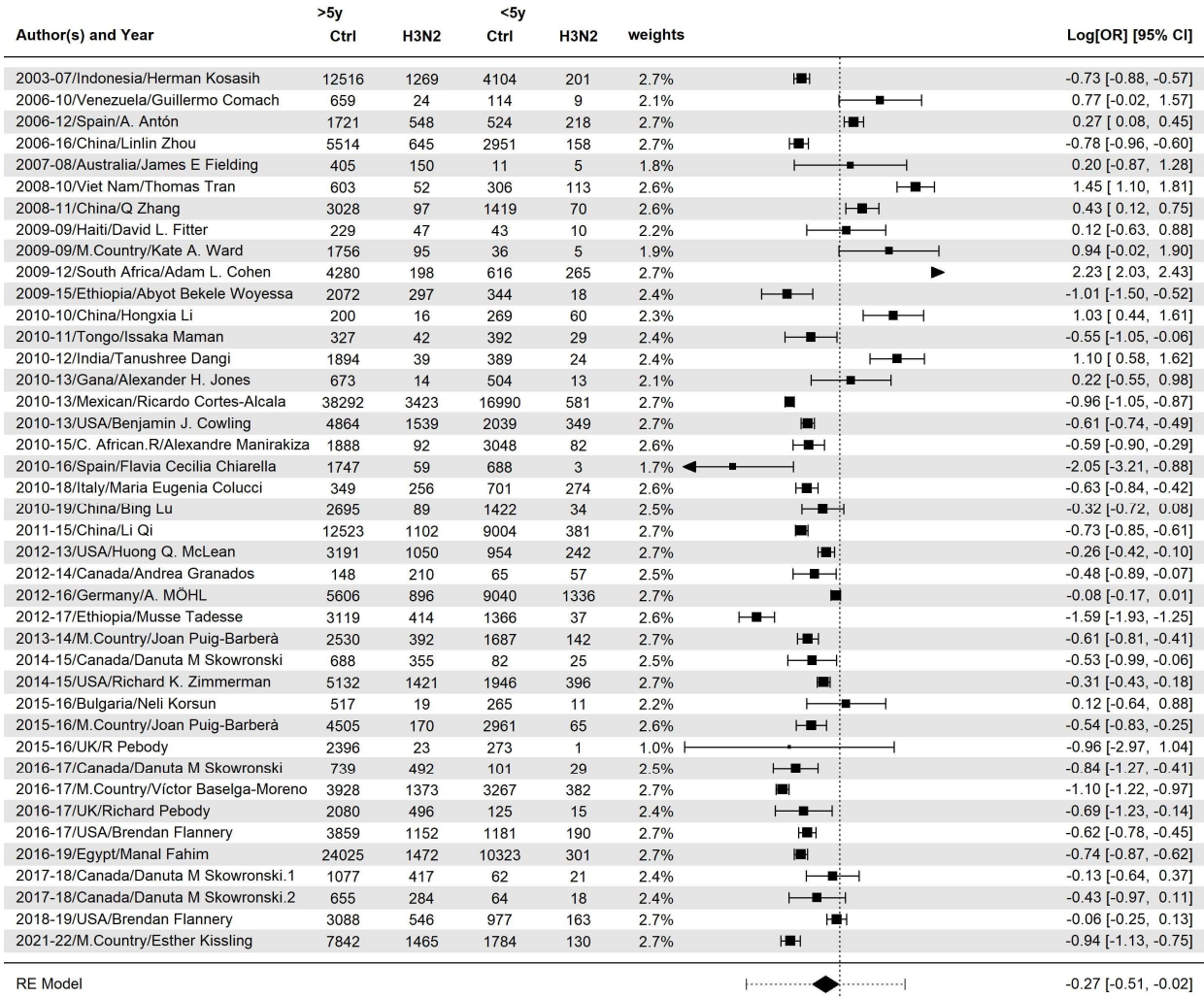
Heterogeneity: $\tau^2 = 0.44$; $\chi^2 = 598.86$, $df = 40$ ($P < 0.01$); $I^2 = 95\%$
 Test for overall effect: $Z = -6.17$ ($P < 0.01$)



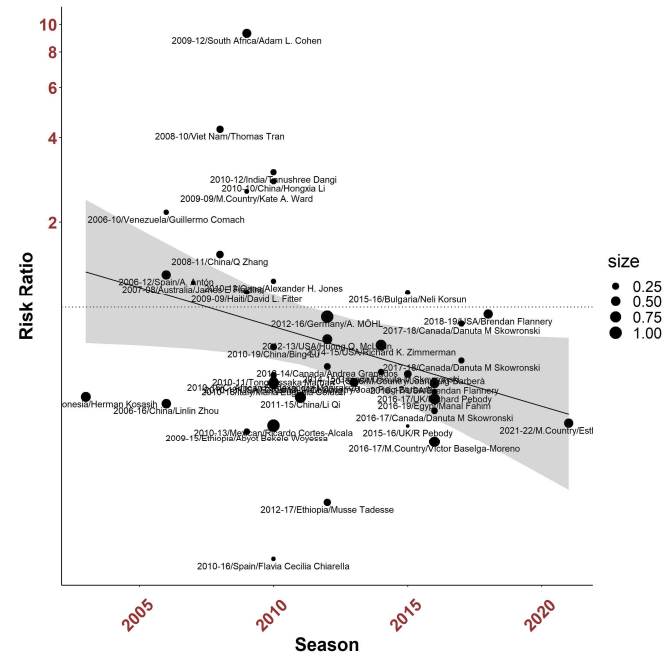
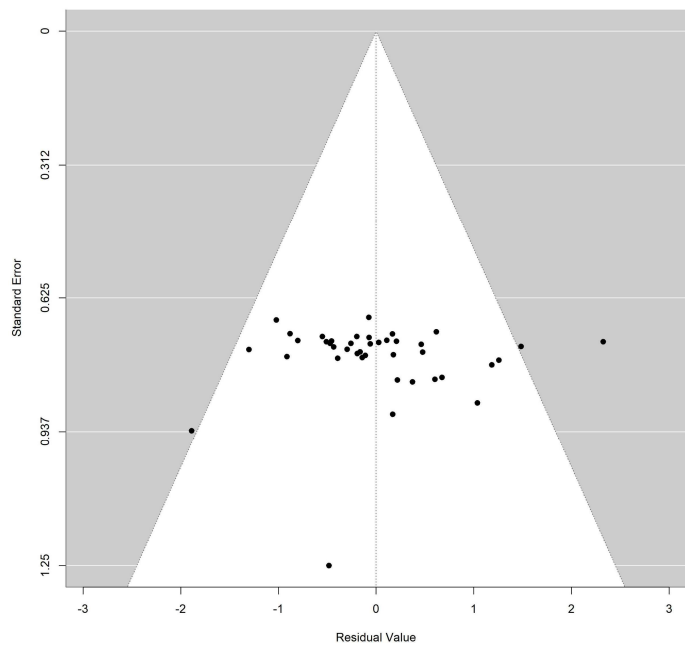
H3N2

C

>5 vs <5



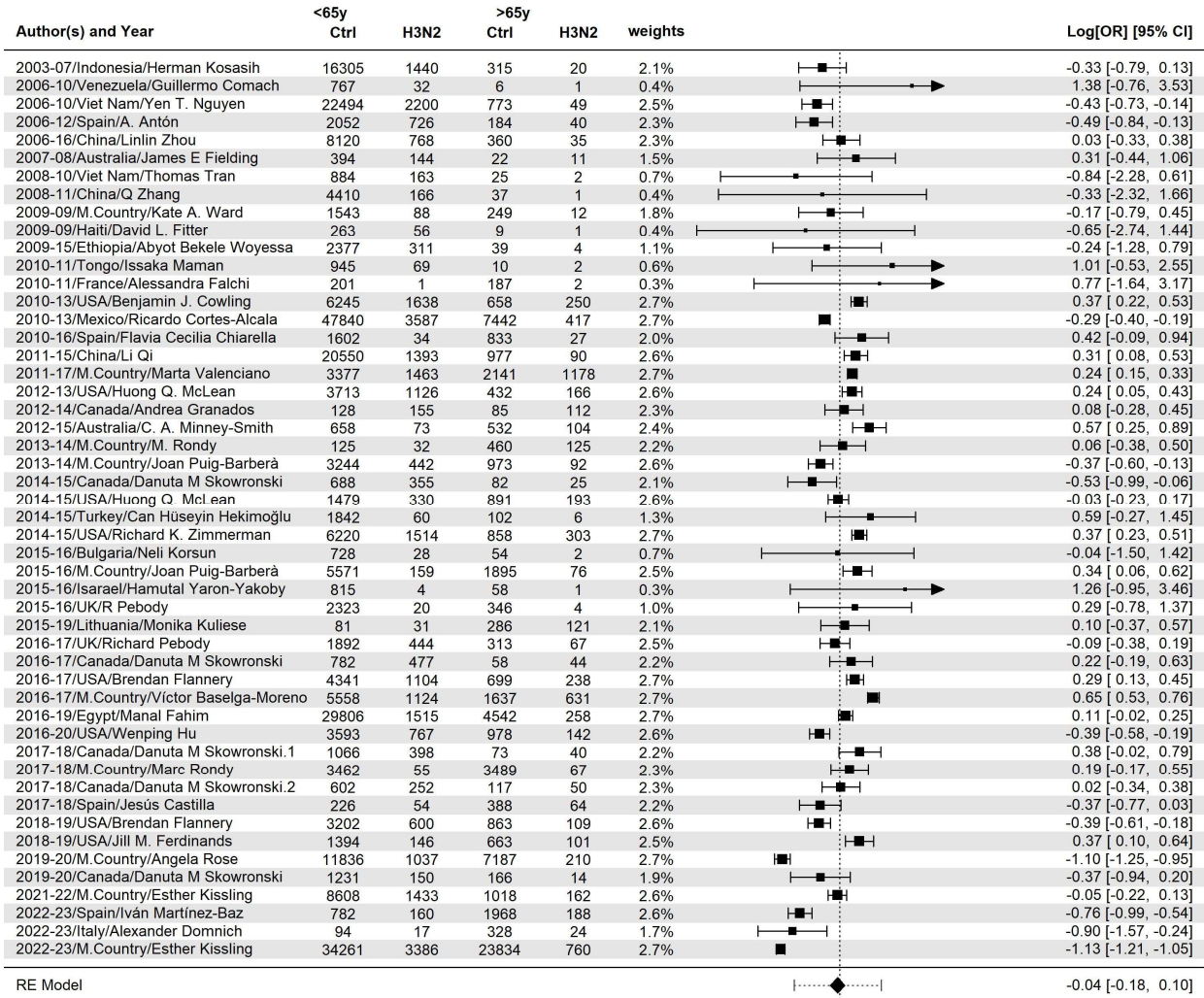
Heterogeneity: $\tau^2 = 0.59$; $\chi^2 = 1447.94$, $df = 40$ ($P < 0.01$); $I^2 = 98\%$
 Test for overall effect: $Z = -2.13$ ($P = 0.03$)



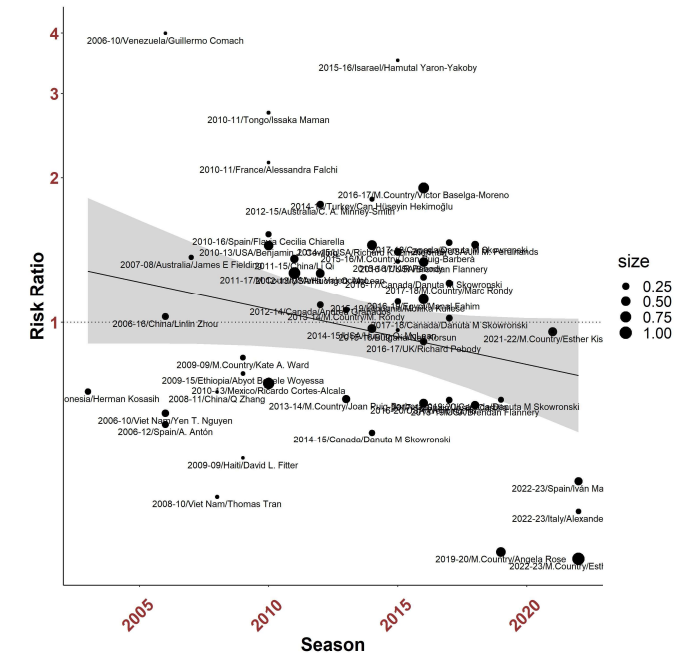
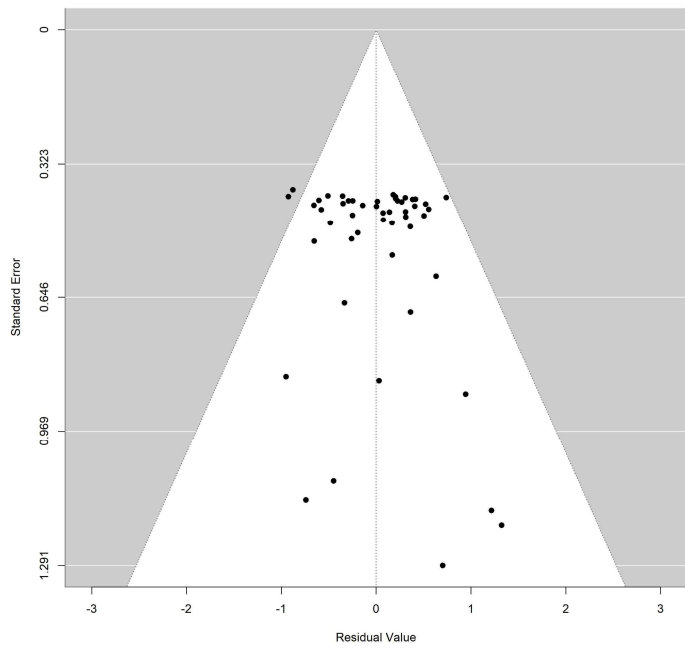
H3N2

<65 vs >65

d



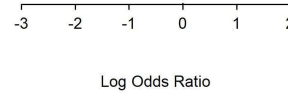
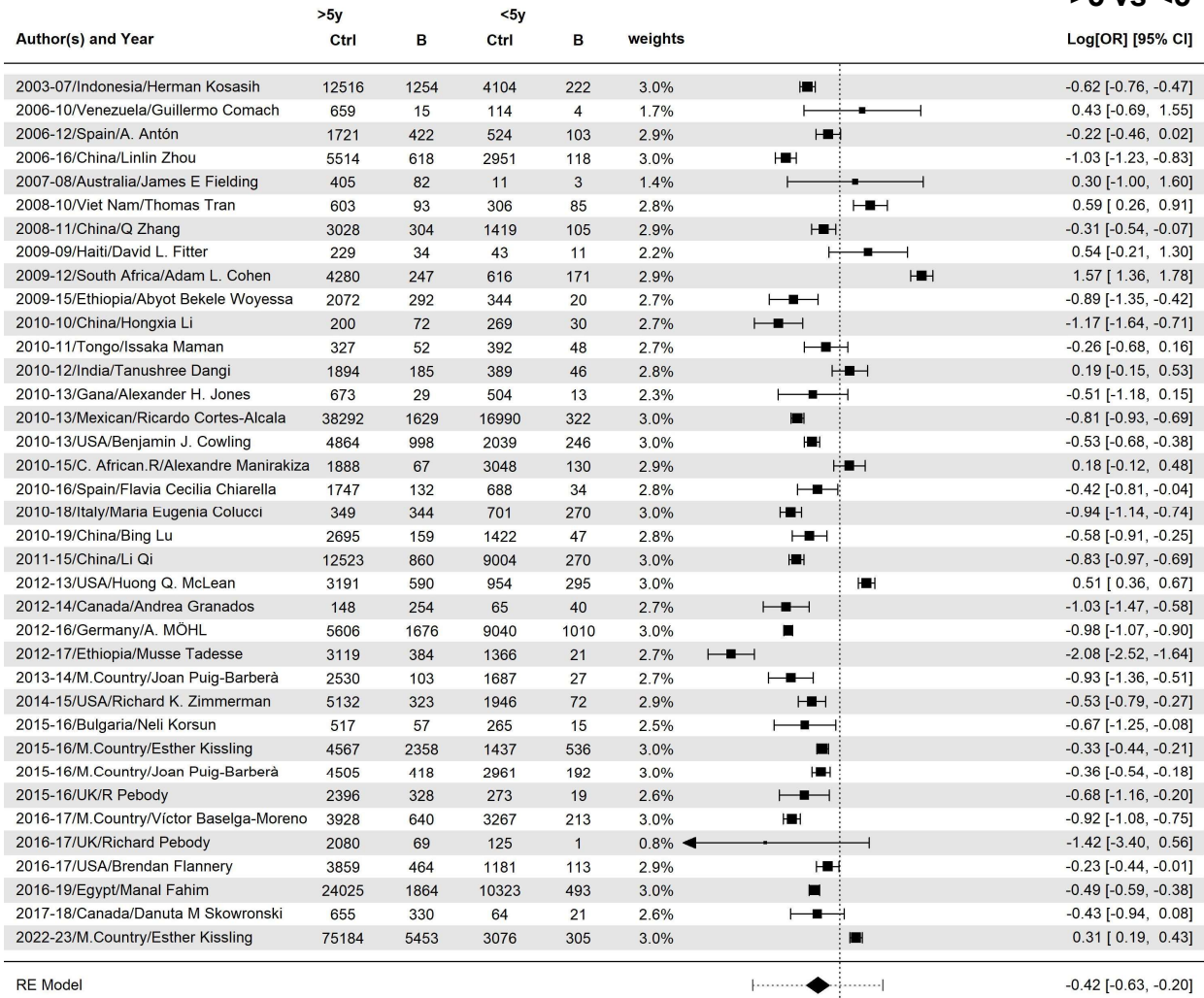
Heterogeneity: $\tau^2 = 0.18$; $\chi^2 = 1302.67$, $df = 49$ ($P < 0.01$); $I^2 = 93\%$
 Test for overall effect: $Z = -0.59$ ($P = 0.55$)



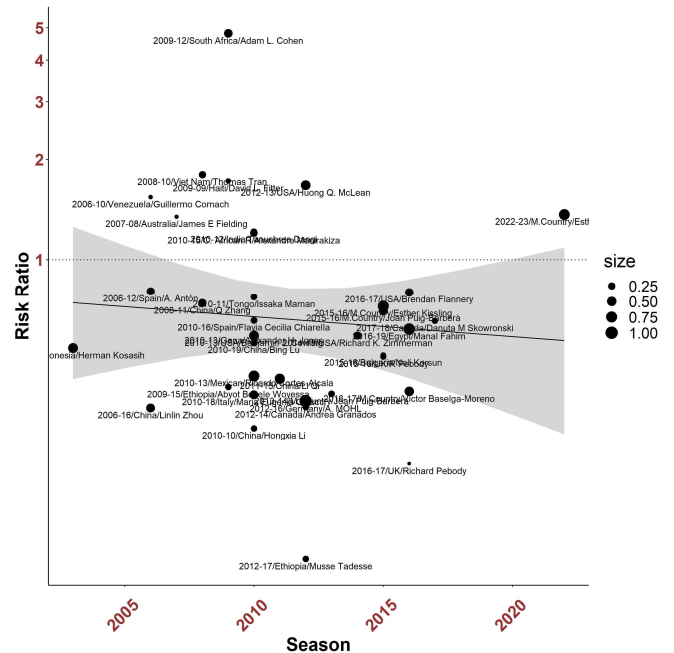
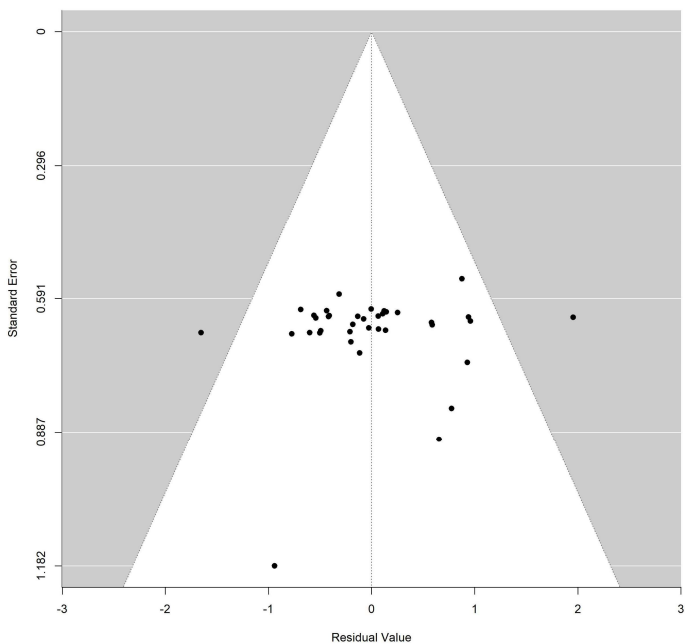
B

e

>5 vs <5



Heterogeneity: $\tau^2 = 0.39$; $\chi^2 = 1125.85$, $df = 36$ ($P < 0.01$); $I^2 = 97\%$
 Test for overall effect: $Z = -3.83$ ($P < 0.01$)



B

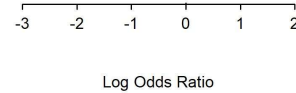
f

<65 vs >65

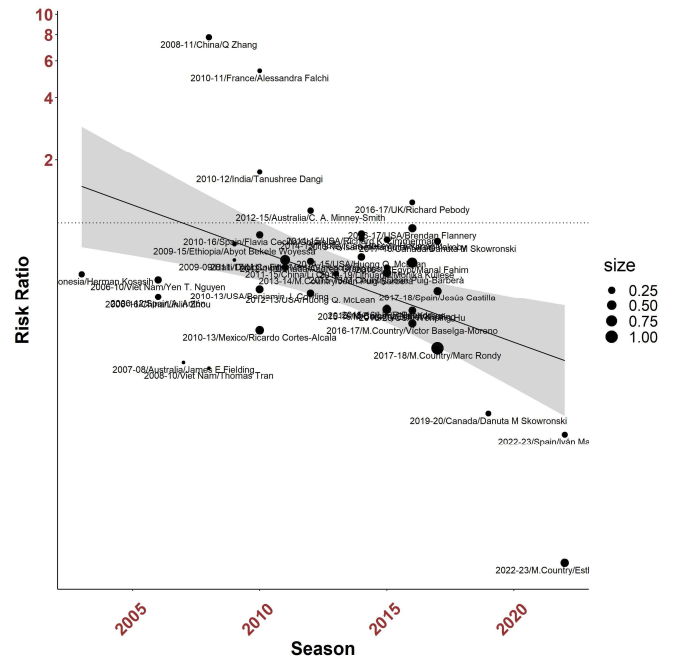
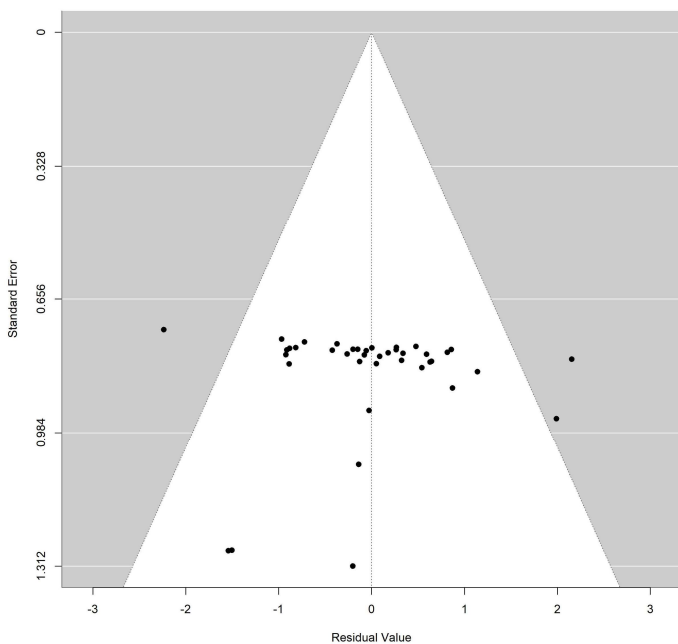
Author(s) and Year	<65y		>65y		weights	Log[OR] [95% CI]
	Ctrl	B	Ctrl	B		
2003-07/Indonesia/Herman Kosasih	16305	1460	315	16	2.6%	-0.57 [-1.07, -0.06]
2006-10/Viet Nam/Yen T. Nguyen	22494	2124	773	39	2.7%	-0.63 [-0.95, -0.30]
2006-12/Spain/A. Antón	2052	505	184	20	2.6%	-0.82 [-1.29, -0.35]
2006-16/China/Linlin Zhou	8120	722	360	14	2.6%	-0.83 [-1.37, -0.29]
2007-08/Australia/James E Fielding	394	84	22	1	1.2%	-1.55 [-3.56, 0.47]
2008-10/Viet Nam/Thomas Tran	884	177	25	1	1.2%	-1.61 [-3.62, 0.39]
2008-11/China/Q Zhang	4410	384	37	25	2.6%	2.05 [1.53, 2.57]
2009-09/Haiti/David L. Fitter	263	44	9	1	1.2%	-0.41 [-2.50, 1.68]
2009-15/Ethiopia/Abyot Bekele Woyessa	2377	308	39	4	2.1%	-0.23 [-1.27, 0.80]
2010-11/France/Alessandra Falchi	201	4	187	20	2.0%	1.68 [0.59, 2.77]
2010-12/India/Tanushree Dangi	2243	224	40	7	2.3%	0.56 [-0.25, 1.38]
2010-13/USA/Benjamin J. Cowling	6245	1184	658	60	2.7%	-0.73 [-1.00, -0.46]
2010-13/Mexico/Ricardo Cortes-Alcala	47840	1863	7442	88	2.8%	-1.19 [-1.41, -0.98]
2010-16/Spain/Flavia Cecilia Chiarella	1602	114	833	52	2.7%	-0.13 [-0.47, 0.21]
2011-15/China/Li Qi	20550	1098	977	32	2.7%	-0.49 [-0.85, -0.13]
2011-17/M.Country/Marta Valenciano	3377	669	2141	282	2.8%	-0.41 [-0.56, -0.26]
2012-13/USA/Huong Q. McLean	3713	840	432	45	2.7%	-0.78 [-1.09, -0.46]
2012-14/Canada/Andrea Granados	128	205	85	89	2.7%	-0.42 [-0.80, -0.05]
2012-15/Australia/C. A. Minney-Smith	658	40	532	37	2.6%	0.13 [-0.33, 0.60]
2013-14/M.Country/Joan Puig-Barberà	3244	111	973	19	2.6%	-0.56 [-1.05, -0.07]
2014-15/USA/Huong Q. McLean	1479	157	891	65	2.7%	-0.38 [-0.68, -0.07]
2014-15/Turkey/Can Hüseyin Hekimoğlu	1842	322	102	15	2.6%	-0.17 [-0.73, 0.38]
2014-15/USA/Richard K. Zimmerman	6220	352	858	43	2.7%	-0.12 [-0.45, 0.20]
2015-16/Bulgaria/Neli Korsun	728	70	54	2	1.7%	-0.95 [-2.39, 0.48]
2015-16/M.Country/Esther Kissling	5431	2782	573	112	2.8%	-0.96 [-1.17, -0.76]
2015-16/M.Country/Joan Puig-Barberà	5571	510	1895	100	2.8%	-0.55 [-0.77, -0.33]
2015-16/Israel/Hamutal Yaron-Yakoby	815	423	58	25	2.6%	-0.19 [-0.67, 0.30]
2015-16/UK/R Pebody	2323	328	346	19	2.6%	-0.94 [-1.42, -0.47]
2015-19/Lithuania/Monika Kuliese	81	38	286	82	2.6%	-0.49 [-0.95, -0.04]
2016-17/UK/Richard Pebody	1892	58	313	12	2.5%	0.22 [-0.41, 0.86]
2016-17/USA/Brendan Flannery	4341	501	699	76	2.7%	-0.06 [-0.31, 0.19]
2016-17/M.Country/Victor Baselga-Moreno	5558	778	1637	75	2.8%	-1.12 [-1.36, -0.87]
2016-19/Egypt/Manal Fahim	29806	2146	4542	211	2.8%	-0.44 [-0.58, -0.29]
2016-20/USA/Wenping Hu	3593	535	978	55	2.7%	-0.97 [-1.26, -0.69]
2017-18/M.Country/Marc Rondy	3462	3747	3489	941	2.8%	-1.39 [-1.48, -1.30]
2017-18/Canada/Danuta M Skowronski	602	303	117	48	2.7%	-0.20 [-0.57, 0.16]
2017-18/Spain/Jesús Castilla	226	275	388	223	2.8%	-0.75 [-0.99, -0.51]
2019-20/Canada/Danuta M Skowronski	1231	672	166	11	2.5%	-2.11 [-2.73, -1.49]
2022-23/Spain/Iván Martínez-Baz	782	66	1968	16	2.6%	-2.34 [-2.89, -1.79]
2022-23/M.Country/Esther Kissling	49221	5680	29039	78	2.8%	-3.76 [-3.98, -3.54]

RE Model

-0.61 [-0.91, -0.32]



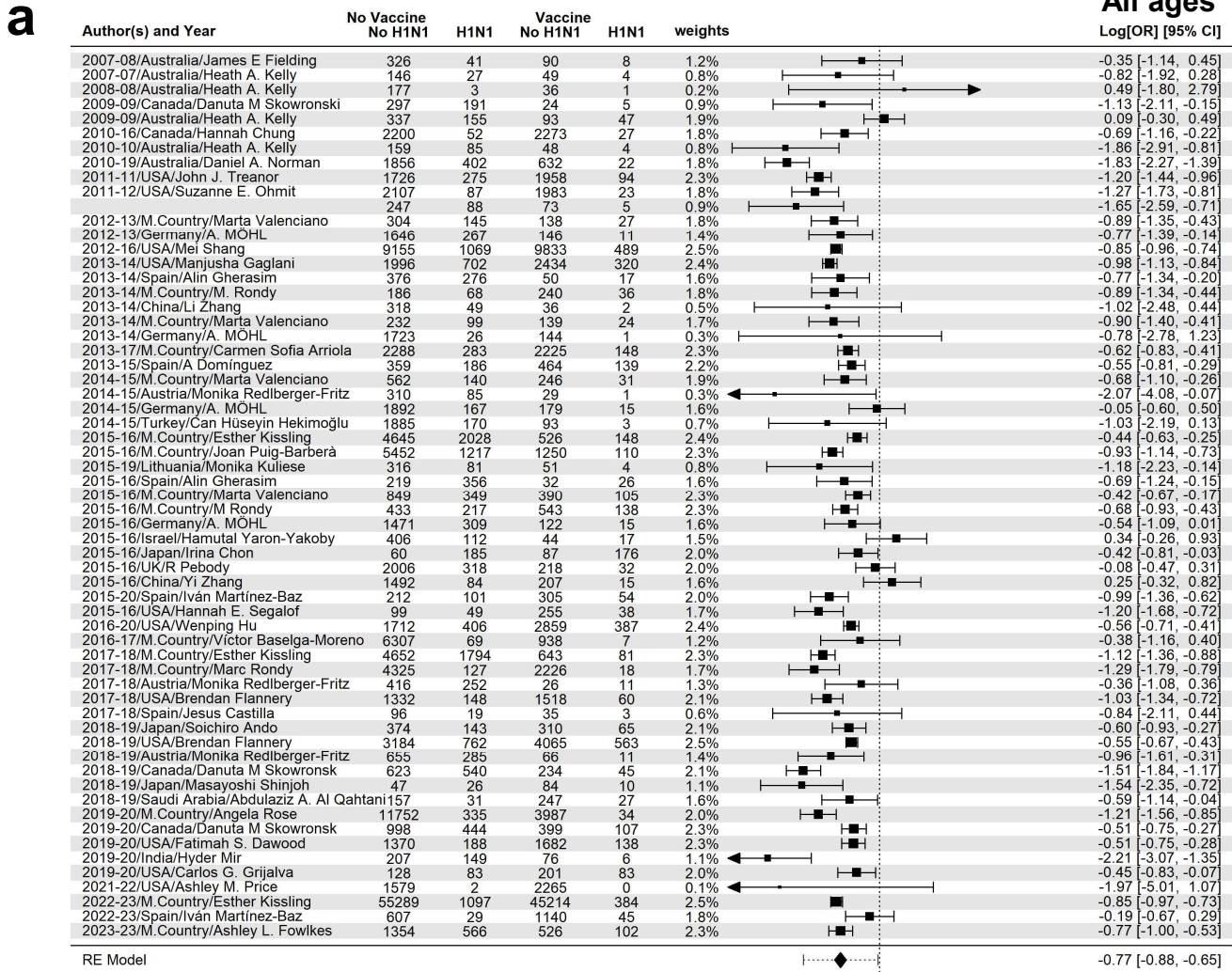
Heterogeneity: $\tau^2 = 0.81$; $\chi^2 = 1235.92$, $df = 39$ ($P < 0.01$); $I^2 = 97\%$
 Test for overall effect: $Z = -4.07$ ($P < 0.01$)



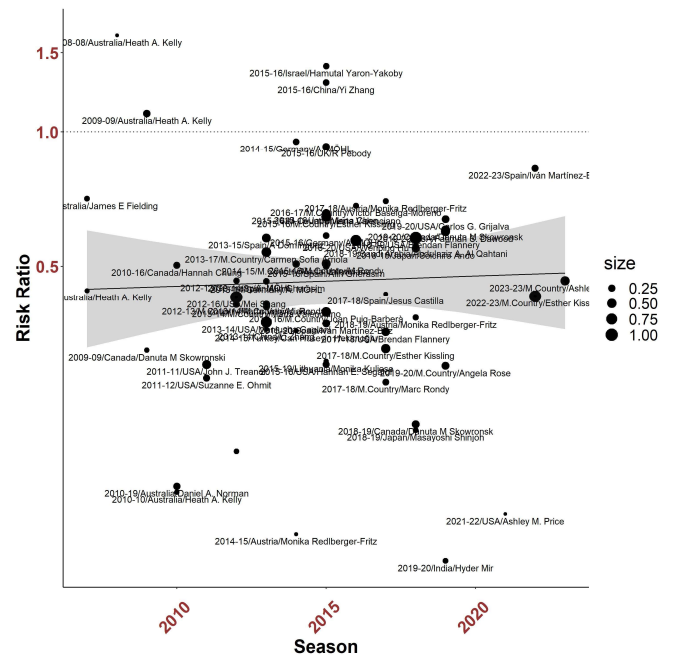
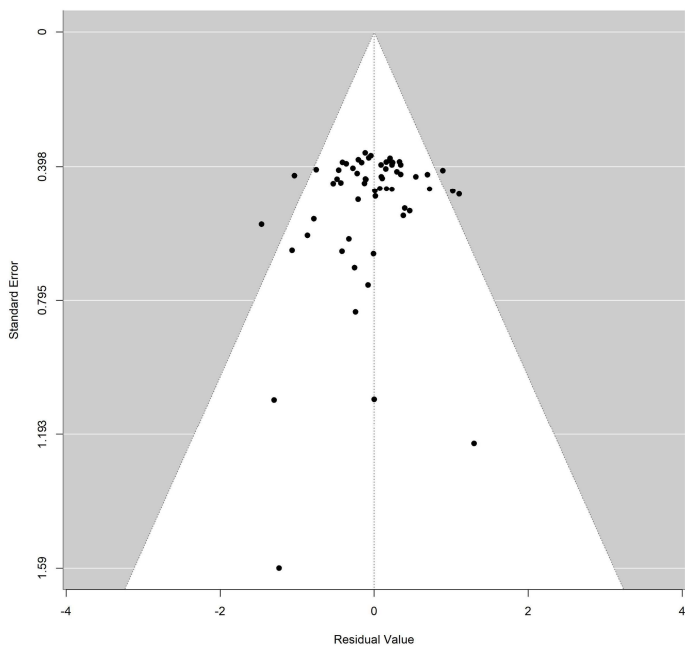
Supplementary Figure S1. Random Forest analysis and assessment of bias in influenza subtype and age groups. Individual random forest analysis performed for H1N1 (a-b), H3N2 (c-d) or B influenza type (e-f). Age groups compare <5 vs >5 yo (a, c, e) or <65 vs >65 yo (b, d, f).

Supplementary Figure S2

Vaccine efficiency vs H1N1



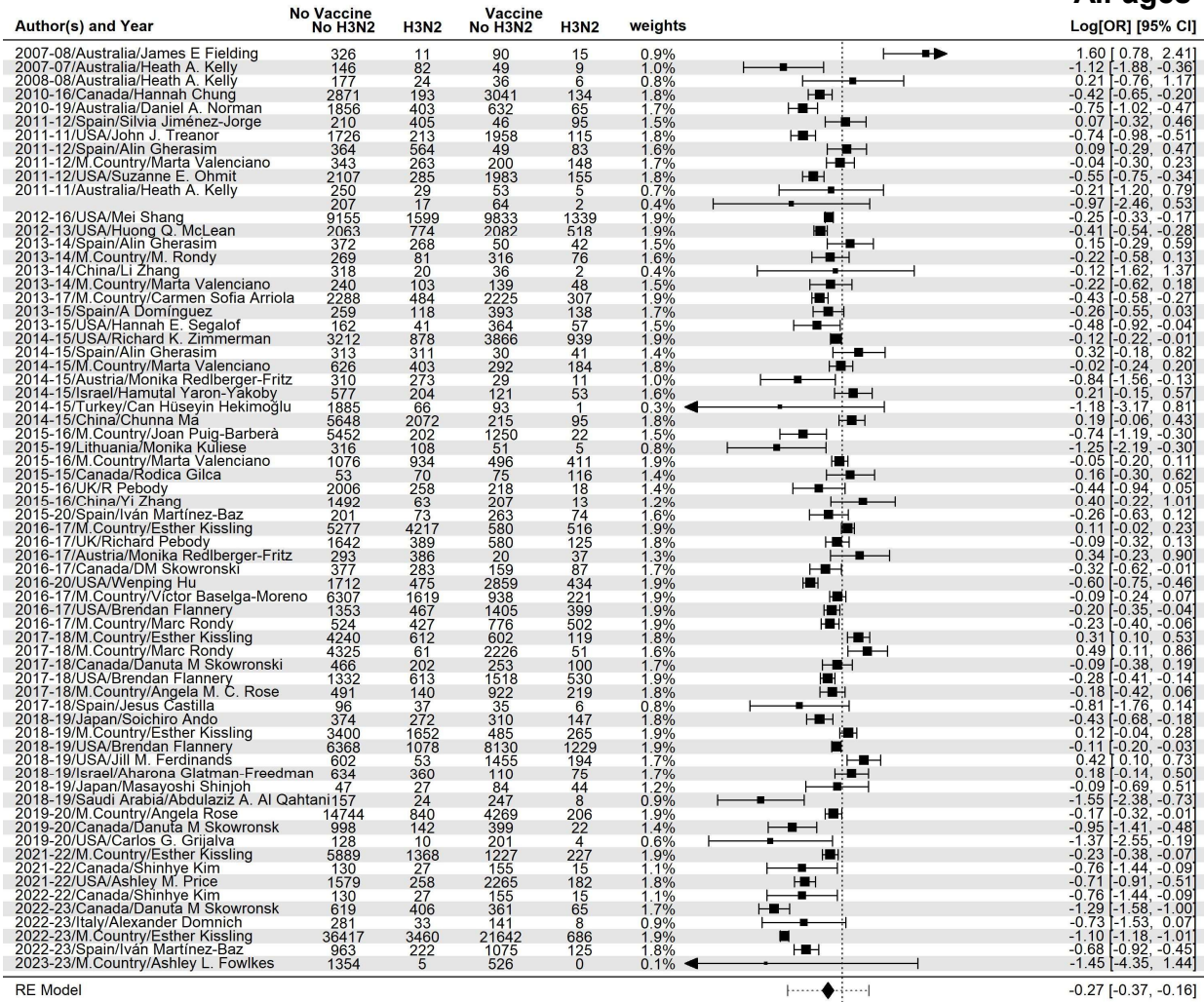
Heterogeneity: $\tau^2 = 0.14$; $\chi^2 = 257.97$, $df = 60$ ($P < 0.01$); $I^2 = 85\%$
 Test for overall effect: $Z = -13.02$ ($P < 0.01$)



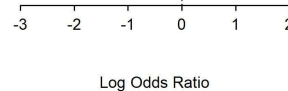
Vaccine efficiency vs H3N2

b

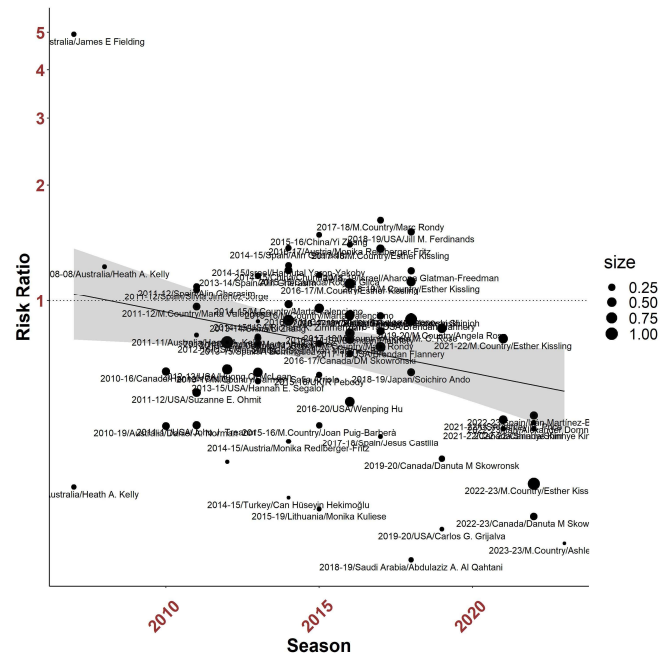
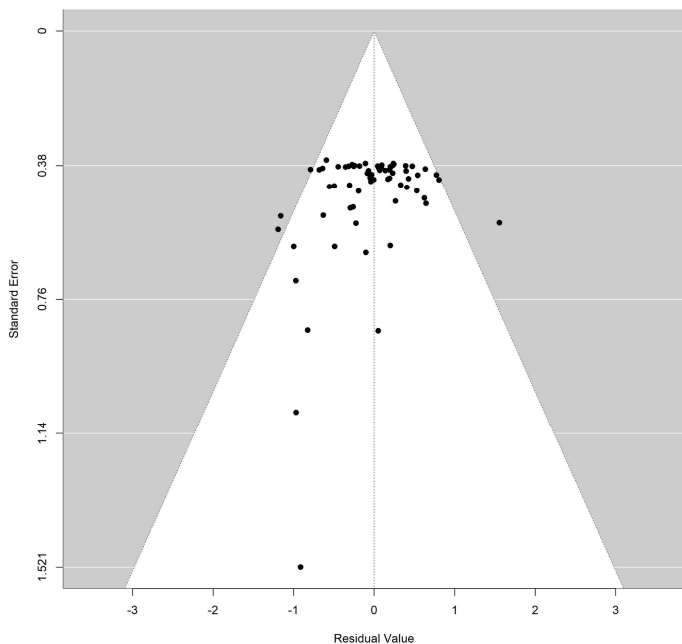
All ages



RE Model

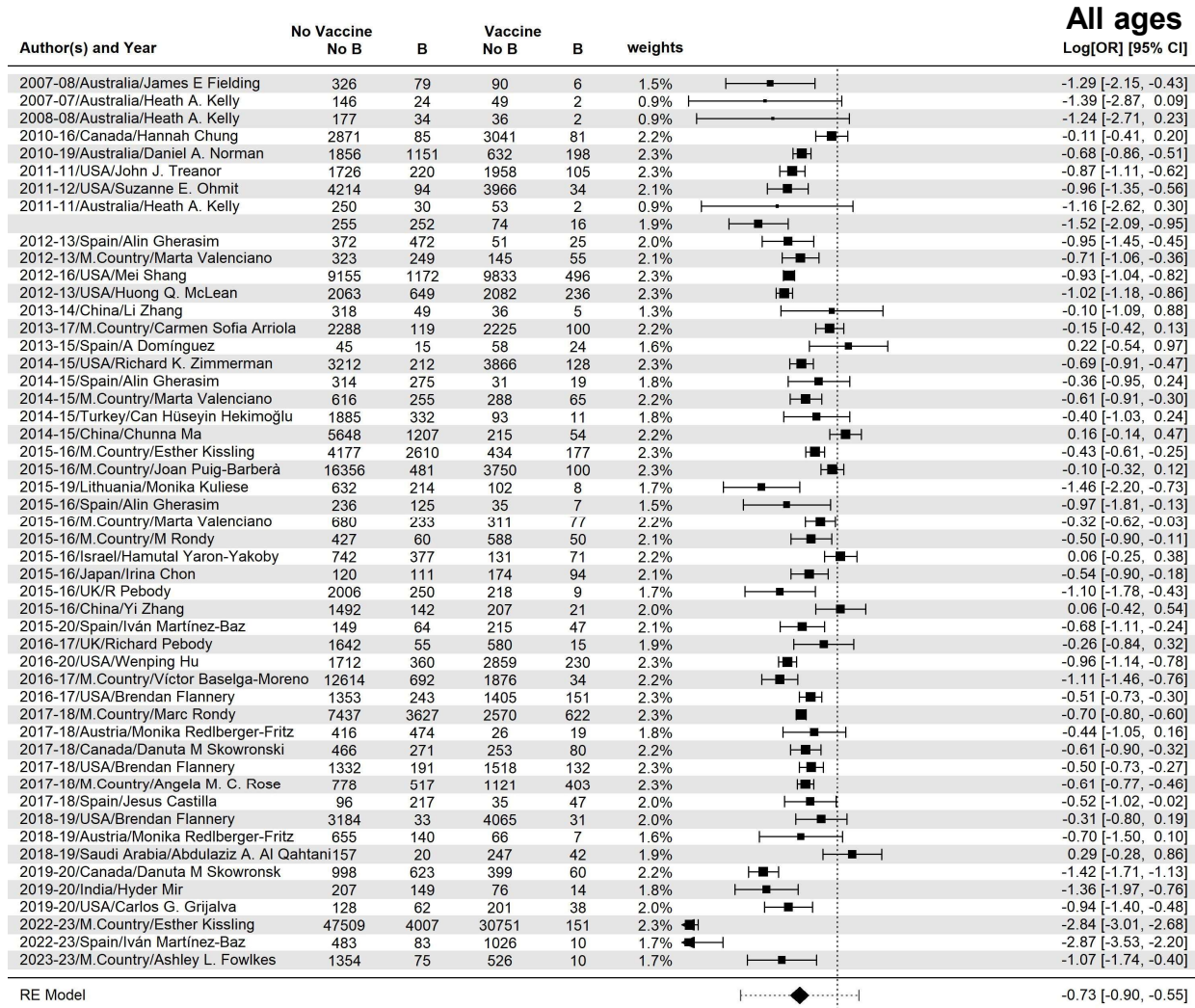


Heterogeneity: $\tau^2 = 0.15$; $\chi^2 = 807.37$, $df = 67$ ($P < 0.01$); $I^2 = 93\%$
 Test for overall effect: $Z = -4.89$ ($P < 0.01$)



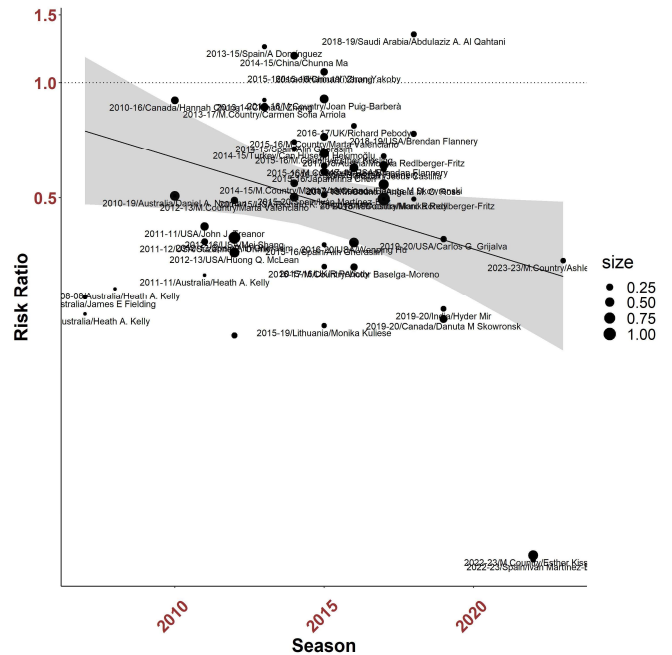
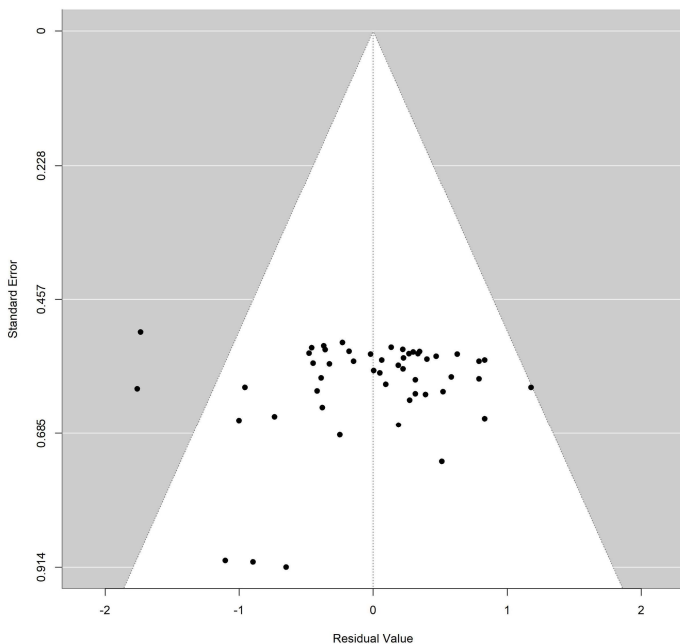
Vaccine efficiency vs B

C



Heterogeneity: $\tau^2 = 0.33$; $\chi^2 = 952.26$, $df = 50$ ($P < 0.01$); $I^2 = 94\%$
 Test for overall effect: $Z = -8.21$ ($P < 0.01$)

Log Odds Ratio



Supplementary Figure 2. Random Forest analysis and assessment of bias in vaccination against influenza, regarding influenza virus subtype and age groups. Individual random forest analysis performed for H1N1 (a-b), H3N2 (c-d) or B influenza type (e-f). Age groups compare <5 vs >5 yo (a, c, e) or <65 vs >65 yo (b, d, f).

Supplementary Table S1

Supplementary Table S1. Summary of articles used in meta-analysis including author, year, country, enrolment year, setting, influenza type and DOI.

ID	Author	Year	Country(Study)	Enrolment(year)	Setting	Influenza Type	DOI
10	Esther Kissling	2019	Europe	2016-18	Primary Care Service	H1N1/H3N2	https://doi.org/10.1016/j.jvacx.2019.100042
47	Richard Pebody	2017	United Kingdom	2016-17	Primary Care Service	H1N1/H3N2/B	https://doi.org/10.2807/1560-7917.ES.2017.22.44.17-00306
49	Danuta M Skowronski	2011	Canada	2009	Primary Care Service	H1N1/H3N2/B	doi:10.1136/bmj.c7297
54	LourdesGarcia-Garcia	2009	Mexico	2008-9	Hospital	H1N1	doi:10.1136/bmj.b3928
64	Angela M. C. Rose	2019	Europe	2017-18	Hospital	H3N2/B	DOI: 10.1111/irv.12714
67	Aharona Glatman-Freedman	2020	Israel	2018-19	Primary Care Service	H3N2	https://doi.org/10.3390/vaccines8010078
68	Soichiro Ando	2020	Japan	2018-19	Primary Care Service	H1N1/H3N2	DOI:10.2169/internalmedicine.3616-19
80	Shinhye Kim	2022	Canada	2021-22	Primary Care Service	H3N2	https://doi.org/10.2807/1560-7917.ES.2022.27.38.2200720
82	Alin Gherasim	2017	Spain	2016	Primary Care Service	H1N1/H3N2	https://doi.org/10.1371/journal.pone.0179160
92	Danuta M Skowronski	2019	Canada	2019	Primary Care Service	H1N1/H3N2	https://doi.org/10.2807/1560-7917.ES.2019.24.15.1900104
93	M. Rondy	2016	Europe	2013-14	Primary Care Service	H1N1/H3N2	http://dx.doi.org/10.1080/21645515.2015.1126013
98	Brendan Flannery	2017	USA	2015-16	Primary Care Service	H1N1	DOI: 10.1093/infdis/jvx34
102	Li Zhang	2018	China	2013-14	Primary Care Service	H1N1/H3N2/B	https://doi.org/10.1080/21645515.2018.1441655
105	Neil Korsun	2017	Bulgaria	2015-16	Primary Care Service	H1N1/H3N2/B	https://doi.org/10.1016/j.meej.2017.01.027
110	Marta Valenciano	2018	Europe	2011-17	Primary Care Service	H1N1/H3N2/B	DOI: 10.1111/irv.12562
122	Esther Kissling	2019	Europe	2018-19	Primary Care Service	H3N2	https://doi.org/10.2807/1560-7917.ES.2019.24.48.1900604
136	Brendan Flannery	2020	USA	2018-19	Primary Care Service	H3N2	DOI: 10.1093/infdis/jz543
146	Esther Kissling	2022	Europe	2021-22	Primary Care Service	H1N1/H3N2	DOI:10.1111/irv.13069
158	Huong Q. McLean	2016	USA	2004-15	Primary Care Service	H1N1/H3N2/B	DOI: 10.1093/infdis/jw335
185	Jill M. Ferdinands	2021	USA	2018-19	Hospital	H1N1/H3N2	DOI: 10.1093/infdis/jiaa772
194	Masayoshi Shinjoh	2020	Japan	2018-19	Hospital	H1N1/H3N2	https://doi.org/10.1371/journal.pone.0249005
210	Marc Rondy	2018	Europe	2017-18	Primary Care Service	H1N1/H3N2/B	https://doi.org/10.2807/1560-7917.ES.2018.23.9.18-00086
214	Angela Rose	2020	Europe	2019-20	Primary Care Service	H1N1/H3N2/B	https://doi.org/10.2807/1560-7917.ES.2020.25.10.2000153
229	Brendan Flannery	2018	USA	2016-17	Primary Care Service	H3N2/B	DOI: 10.1093/cid/ciy775
255	Esther Kissling	2017	Europe	2015-16	Primary Care Service	H1N1/B	DOI: 10.1111/irv.12520
259	Monika Redlberger-Fritz	2020	Austria	2016-19	Primary Care Service	H1N1/H3N2/B	doi: 10.3389/fimmu.2020.00434
268	Linlin Zhou	2019	China	2006-9	Primary Care Service	H1N1/H3N2/B	https://doi.org/10.1186/s12879-019-3689-9
272	Manjusha Gaglani	2016	USA	2013-14	Primary Care Service	H1N1	DOI: 10.1093/infdis/jiv577
293	Emily T. Martin	2020	USA	2017-18	Hospital	H3N2	DOI: 10.1093/infdis/jiaa685
328	M Rondy	2017	Europe	2015-16	Hospital	H1N1/B	http://dx.doi.org/10.2807/1560-7917.ES.2017.22.30.30580
344	Kate A. Ward	2010	Australia	2009	Primary Care Service	H1N1/H3N2	DOI: 10.3201/eid1611.100477
355	N Sugaya	2016	Japan	2014-15	Primary Care Service	H3N2	http://dx.doi.org/10.2807/1560-7917.ES.2016.21.42.30377
365	Bing Lu	2020	China	2010-19	Primary Care Service	H1N1/H3N2/B	https://doi.org/10.1017/S0950268820001387
370	Li Zhang	2020	China	2016-17	Primary Care Service	H1N1/H3N2	https://doi.org/10.1080/21645515.2019.1677438
428	Marc Rondy	2017	Europe	2016-18	Primary Care Service	H3N2	https://doi.org/10.2807/1560-7917.ES.2017.22.41.17-00645
478	Monika Redlberger-Fritz	2015	Austria	2014-15	Primary Care Service	H1N1/H3N2/B	doi:10.1371/journal.pone.0149916
486	Danuta M Skowronski	2019	Canada	2018-19	Primary Care Service	H1N1	https://doi.org/10.2807/1560-7917.ES.2019.24.4.1900055
487	A. MOHL	2017	Germany	2012-16	Hospital	H1N1/H3N2/B	doi:10.1017/S0950268817002709
510	Joan Puig-Barberá	2019	Multy Country	2015-16	Hospital	H1N1/H3N2/B	https://doi.org/10.1186/s12879-019-4017-0
521	Danuta M Skowronski	2020	Canada	2019-20	Primary Care Service	H1N1/H3N2/B	https://doi.org/10.2807/1560-7917.ES.2020.25.7.2000103
524	Ana Martinez	2019	Spain	2011-16	Hospital	H1N1/H3N2/B	https://doi.org/10.1371/journal.pone.0210353
567	Javier Dávila-Torres	2016	Mexico	2013-14	Hospital	H1N1	DOI: 10.1016/j.arcmed.2014.11.005
582	Monika Kuliese	2021	Lituania	2015-19	Hospital	H1N1/H3N2/B	https://doi.org/10.3390/vaccines9050455
595	Hamutal Yaron-Yakoby	2018	Israel	2014-16	Primary Care Service	H1N1/H3N2/B	https://doi.org/10.2807/1560-7917.ES.2018.23.7.17-00026
601	Danuta M Skowronski	2018	Canada	2017-18	Primary Care Service	H3N2/B	https://doi.org/10.2807/1560-7917.ES.2018.23.16.18-00078
607	Mansel Fahim	2021	Egypt	2016-19	Hospital	H1N1/H3N2	DOI: 10.1111/irv.12867
614	Rodica Gilca	2015	Canada	2014-15	Hospital	H3N2	DOI:10.1371/journal.pone.0132195
618	DM Skowronski	2017	Canada	2016-17	Primary Care Service	H3N2	DOI: http://dx.doi.org/10.2807/1560-7917.ES.2017.22.6.30460
627	Can Hüseyin Hekimoğlu	2017	Turkey	2014-15	Primary Care Service	H1N1/H3N2/B	DOI: 10.4274/baakanmedj.2017.0487
629	Jesús Castilla	2018	Spain	2010-16	Primary Care Service/Hospital	H1N1/H3N2/B	https://doi.org/10.2807/1560-7917.ES.2018.23.2.16-00780
632	Huong Q. McLean	2014	USA	2004-13	Primary Care Service	H3N2/B	DOI: 10.1093/cid/ciu680
682	Nazish Badar	2013	Pakistan	2008-11	Primary Care Service	H1N1/H3N2/B	doi:10.1371/journal.pone.0079959
795	JoanPuig-Barberá	2016	Multy Country	2013-14	Hospital	H1N1/H3N2/B	DOI:10.1371/journal.pone.0154970
800	Ivan Martinez-Baz	2015	Spain	2012-13	Primary Care Service	B	http://dx.doi.org/10.1080/21645515.2015.1038002
837	Benjamin J. Cowling	2017	USA	2010-13	Primary Care Service	H1N1/H3N2/B	doi:10.1016/j.vaccine.2015.11.016
847	Alexander H. Jones	2016	Ghana	2010-13	Hospital	H3N2/B	DOI:10.1111/irv.12397
861	Andrea Granados	2017	Canada	2016-17	Hospital	H3N2/B	http://dx.doi.org/10.1016/j.jcv.2016.11.008.1386-6532
864	Hyder Mir	2021	India	2019-20	Hospital	H1N1/B	https://doi.org/10.3390/vaccines9101094
898	Mei Shang	2019	USA	2012-16	Primary Care Service	H1N1/H3N2/B	doi:10.1016/j.vaccine.2018.10.093
931	A. Antón	2016	Spain	2006-12	Primary Care Service	H1/H3/B	http://dx.doi.org/10.1016/j.cmi.2016.06.007
969	S. G. SULLIVAN	2016	Australia	2012-14	Primary Care Service	H1N1/H3N2/B	doi:10.1017/S0950268816000018
985	Irina Chon	2019	Japan	2015-16	Primary Care Service	H1N1/B	https://doi.org/10.1016/j.jvacx.2019.100011
995	Chunna Ma	2017	China	2014-15	Primary Care Service	H3N2/B	https://doi.org/10.1080/21645515.2017.1359364
1040	Danuta M Skowronski	2023	Canada	2022-23	Primary Care Service	H3N2	https://doi.org/10.2807/1560-7917.ES.2023.28.5.2300043
1064	Zekiba Tarnagda	2014	Burkina Faso	2010-12	Primary Care Service	H1N1/H3N2/B	DOI:10.1111/irv.12259
1083	Issaka Maman	2014	Togo	2010-12	Hospital	H1N1/H3N2/B	https://doi.org/10.1186/1471-2458-14-981
1138	R Pebody	2016	United Kingdom	2015-16	Primary Care Service	H1N1/H3N2/B	http://dx.doi.org/10.2807/1560-7917.ES.2016.21.38.30348
1210	C. A. Minney-Smith	2019	Australia	2012-15	Hospital	H1/H3/B	https://doi.org/10.1017/S095026881900195X
1224	Wenping Hu	2021	USA	2016-20	Primary Care Service	H1N1/H3N2/B	https://doi.org/10.1017/S09502688190010058
1229	Guillermo Comach	2012	Venezuela	2006-10	Hospital	H1/H3/B	doi:10.1371/journal.pone.0044511
1245	Maria Eugenia Colucci	2020	Italy	2010-18	Primary Care Service	H1N1/H3N2/B	DOI: 10.23750/abm.v9i13-S.9424
1251	Shinhye Kim	2022	Canada	2021-22	Primary Care Service	H3N2	https://doi.org/10.2807/1560-7917.ES.2022.27.38.2200720
1262	Li Qi	2016	China	2011-15	Hospital	H1N1/H3N2/B	doi:10.1371/journal.pone.0167866
1336	Matthew J. Cummings	2018	Uganda	2009-15	Primary Care Service	H1N1	doi:10.4269/ajtmh.17-0524
1350	Elisabeth Dowling Root	2017	Indonesia	2008-11	Primary Care Service	H1N1/H3N2	DOI: 10.1111/irv.12468
1353	Abdulaziz A. Al Qahtani	2021	Saudi Arabia	2018-19	Primary Care Service	H1N1/H3N2/B	https://doi.org/10.1080/21645515.2020.1764827
1392	Hongxia Li	2013	China	2010-19	Hospital	H1N1/H3N2/B	http://www.virologyj.com/content/10/1/143
1462	Richard K. Zimmerman	2016	USA	2011-12	Primary Care Service	H3N2/B	DOI: 10.1093/cid/ciw635
1475	AnaFreitas Ribeiro	2015	Brazil	2009	Hospital	H1N1	DOI:10.1371/journal.pone.0118772
1704	Astride Jules	2012	USA	2009	Hospital	H1N1	DOI:10.1111/j.1750-2659.2012.00343.x
1709	Flavia Cecilia Chiarella	2017	Spain	2010-16	Hospital	H1N1/H3N2/B	DOI 10.1002/jmv.24857
1741	Cornea Sofia Arriola	2019	South America	2013-17	Hospital	H1N1/H3N2/B	https://doi.org/10.1016/j.jvacx.2019.100047
1778	Alexandre Manirakiza	2017	Central African Republic	2010-15	Primary Care Service	H1N1/H3N2/B	DOI 10.1186/s13690-017-0229-1
1811	Thomas Tran	2018	Viet Nam	2008-10	Hospital	H1N1/H3N2/B	doi: 10.5365/wpsar.2012.3.2.012
1820	Abyot Bekele Woyesa	2012	Ethiopia	2008-10	Primary Care Service	H1N1/H3N2/B	https://doi.org/10.1186/s12879-018-3365-5
1850	Suzanne E. Ohmit	2013	USA	2011-12	Subject Enrollment	B	DOI: 10.1093/cid/cit736
1853	Goundappa K. Balasubramani	2020	USA	2011-16	Subject Enrollment	H1N1/H3N2/B	DOI: 10.1111/irv.12741
1858	Tanushree Dangl	2014	India	2020-22	Primary Care Service	H1N1/H3N2/B	PMCID: PMC4069736
1906	James E Fielding	2011	Australia	2007-8	Primary Care Service	H1/H3/B	http://www.biomedcentral.com/1471-2334/11/170
1949	Musse Tadesse	2020	Ethiopia	2012-17	Primary Care Service	H1N1/H3N2/B	https://doi.org/10.1186/s12879-020-4827-0
2042	Adam L. Cohen	2014	South Africa	2009-12	Hospital	H1N1/H3N2/B	DOI: http://dx.doi.org/10.3201/eid2007.131869
2118	Salaheddin M. Mahmud	2012	Canada	2008-9	Primary Care Service/Hospital	H1N1	DOI: http

2338	Iván Martínez-Baz	2023	Spain	2022-23	Primary Care Service/Hospital	H1N1/H3N2/B	https://doi.org/10.3390/vaccines11091478
2426	Pere Godoy	2018	Spain	2010-16	Hospital	B	https://doi.org/10.2807/1560-7917.ES.2018.23.43.1700732
2476	Ricardo Cortes-Alcala	2018	Mexico	2010-13	Primary Care Service	H1N1/H3N2/B	https://doi.org/10.1080/21645515.2018.1456281
2493	Fatimah S. Dawood	2020	USA	2019-20	Primary Care Service	H1N1/B	DOI: 10.15585/mmwr.mm6907a1
2496	Herman Kosasih	2013	Indonesia	2003-7	Primary Care Service	H1N1/H3N2	DOI: 10.1111/j.1750-2659.2012.00403.x
2514	Brett M. Forshey	2010	Peru	2008-9	Primary Care Service	B	DOI: 10.1111/j.1750-2659.2010.00139.x
2515	A Domínguez	2017	Spain	2013-15	Hospital	H1N1/H3N2/B	http://dx.doi.org/10.2807/1560-7917.ES.2017.22.34.30602
2526	AnaFreitas Ribeiro	2015	Brazil	2009	Hospital	H1N1	doi: 10.1371/journal.pone.0118772
2542	Yi Zhang	2017	China	2015-16	Hospital	H1N1/H3N2/B	http://dx.doi.org/10.1016/j.vaccine.2017.03.084
2800	Huong Q. McLean	2015	USA	2012-13	Primary Care Service	H1N1/H3N2/B	DOI: 10.1093/infdis/jiu647
2801	Jesús Castilla	2018	Spain	2017-18	Primary Care Service/Hospital	H1N1/H3N2/B	https://doi.org/10.2807/1560-7917.ES.2018.23.7.18-00057
2803	Ashley M. Price	2023	USA	2021-22	Primary Care Service	H3N2	https://doi.org/10.1093/cid/ciac941
2804	Ashley L. Fowlkes	2023	South America	2023	Hospital	H1N1/B	DOI: 10.15585/mmwr.mm7237e1
2805	Alexander Domnich	2023	Italy	2022-23	Hospital	H1N1/H3N2/B	https://doi.org/10.1016/j.vaccine.2023.06.072
2806	Esther Kissling	2023	Europe	2022-23	Primary Care Service	H1N1/H3N2/B	https://doi.org/10.2807/1560-7917.ES.2023.28.21.2300116
3015	Carlos G. Grijalva	2021	USA	2019-20	Hospital	H1N1/B	DOI: 10.1093/cid/ciab462
3018	Victor Baséga-Moreno	2019	Northern Hemisphere	2016-17	Hospital	H1N1/H3N2/B	https://doi.org/10.1186/s12889-019-6713-5
3020	Hannah E. Segaloff	2020	USA	2014-16	Hospital	H1N1/H3N2	DOI: 10.1093/aje/kwz248

Supplementary Table S2

Supplementary Table S2. Summary of vaccinated/unvaccinated influenza infected patients with comorbidities from TrinNetX. Data collection for main Groups (a) or subgroups (c) of comorbidities in vaccinated vs unvaccinated patients at 30,60 or 90 days post infection with H1N1, H3N2 or IBV. OddsRatio, 95% CI interval and pvalue of infection of each influenza subtype for the main Groups (b) or subgroups (d) of comorbidities

a)

	Deaths				No Vaccinated Deaths				Vaccinated Deaths				No Vaccinated Deaths				Vaccinated Deaths											
	Pb	Pb.30d	Pb.60d	Pb.90d	Deaths				Deaths				Deaths				Deaths											
	H1	H1.30d	H1.60d	H1.90d	H1Voc	H1Voc.30d	H1Voc.60d	H1Voc.90d	H3	H3.30d	H3.60d	H3.90d	H3Voc	H3Voc.30d	H3Voc.60d	H3Voc.90d	B	B.30d	B.60d	B.90d	Bvcc	Bvcc.30d	Bvcc.60d	Bvcc.90d				
Diseases of the circulatory system	30231716	348023	472140	563136	6039	254	308	337	2307	41	55	68	6954	266	334	376	3295	38	57	71	17489	332	415	477	6234	63	83	104
Neoplasms	16493616	153198	248487	319407	2911	118	154	175	1557	31	46	55	3415	130	179	209	2238	32	48	60	8890	141	195	239	4110	49	68	78
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	12633868	256837	355609	423994	4072	181	253	244	2179	37	51	64	5110	188	234	320	3308	37	57	72	13624	288	367	423	5954	68	87	104
Endocrine, nutritional and metabolic diseases	32607678	304537	418693	499531	7739	244	300	332	2938	41	56	69	9096	264	333	374	4373	38	58	75	28942	315	399	454	9886	64	84	103
Mental, Behavioral and Neurodevelopmental disorders	24993549	204410	302228	365992	8722	179	224	247	2898	38	55	70	6953	205	265	299	3889	36	52	68	26514	248	320	373	10554	65	83	104
Diseases of the nervous system	24265989	267549	362142	428606	5638	207	258	285	2551	39	54	64	5985	205	253	333	3767	40	61	77	18921	277	379	433	8657	71	90	107
Diseases of the respiratory system	32963949	366441	499569	580414	11886	229	278	306	3721	41	56	69	18470	262	333	372	8962	38	57	73	70788	328	409	466	16053	63	83	104
Diseases of the digestive system	31306013	247708	365150	431431	7346	206	256	281	3186	38	53	67	9357	220	285	322	4915	38	55	72	31047	278	358	412	12150	66	86	107
Diseases of the musculoskeletal system and connective tissue	35166823	155153	232307	290443	5819	162	199	233	2880	39	55	67	7704	172	260	292	4443	37	57	74	32569	224	327	379	10889	60	79	99
Diseases of the genitourinary system	26980055	268544	367560	436028	4590	168	206	262	2225	33	43	55	8970	206	253	287	3580	37	54	64	20979	291	365	407	8587	66	86	105

GroupsOdds

b)

	No Vaccinated							Vaccinated							Efficiency(%) Unvaccinated															
	H1(30d)	CI 95%	pvalue	H3(30d)	CI 95%	pvalue	B(30d)	CI 95%	pvalue	H1Vcc(30d)	CI 95%	pvalue	H3Vcc(30d)	CI 95%	pvalue	BVcc(30d)	CI 95%	pvalue	H1(30d)	H3(30d)	B(30d)									
Diseases of the circulatory system	3.78	3.33	4.29	<0.001	3.44	3.04	3.88	<0.001	1.67	1.5	1.86	<0.001	1.56	1.15	2.13	0.008	1.01	0.73	1.39	0.935	0.88	0.69	1.13	0.341	58.73015873	70.63953488	47.30538922			
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)									
	3.38	3.01	3.79	<0.001	3.18	2.85	3.55	<0.001	1.53	1.39	1.69	<0.001	1.54	1.18	2.01	0.003	1.11	0.85	1.44	0.439	0.85	0.68	1.06	0.152	54.43786982	65.09433962	44.44444444			
	H1(90d)	CI 95%	pvalue	H3(90d)	CI 95%	pvalue	B(90d)	CI 95%	pvalue	H1Vcc(90d)	CI 95%	pvalue	H3Vcc(90d)	CI 95%	pvalue	BVcc(90d)	CI 95%	pvalue	H1(90d)	H3(90d)	B(90d)									
	3.1	2.78	3.46	<0.001	3.01	2.71	3.34	<0.001	1.48	1.35	1.62	<0.001	1.6	1.26	2.04	<0.001	1.16	0.92	1.47	0.22	0.89	0.74	1.09	0.281	48.38709677	61.61679402	39.86486486			
Neoplasms	H1(30d)	CI 95%	pvalue	H3(30d)	CI 95%	pvalue	B(30d)	CI 95%	pvalue	H1Vcc(30d)	CI 95%	pvalue	H3Vcc(30d)	CI 95%	pvalue	BVcc(30d)	CI 95%	pvalue	H1(30d)	H3(30d)	B(30d)									
	4.51	3.75	5.42	<0.001	4.22	3.54	5.03	<0.001	1.72	1.46	2.93	<0.001	2.17	1.52	3.09	<0.001	1.55	1.09	2.19	0.02	1.29	0.97	1.71	0.087	51.88470667	63.27014218	25			
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)									
	3.65	3.1	4.3	<0.001	3.62	3.11	4.2	<0.001	1.47	1.27	1.69	<0.001	1.99	1.48	2.67	<0.001	1.43	1.08	1.91	<0.001	1.1	0.87	1.4	0.442	45.47945205	60.49273757	25.17006803			
	H1(90d)	CI 95%	pvalue	H3(90d)	CI 95%	pvalue	B(90d)	CI 95%	pvalue	H1Vcc(90d)	CI 95%	pvalue	H3Vcc(90d)	CI 95%	pvalue	BVcc(90d)	CI 95%	pvalue	H1(90d)	H3(90d)	B(90d)									
	3.24	2.78	3.77	<0.001	3.3	2.87	3.8	<0.001	1.4	1.23	1.59	<0.001	1.85	1.42	2.43	<0.001	1.39	1.08	1.8	0.014	0.98	0.78	1.23	0.91	42.90123457	57.87878788	30			
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	H1(30d)	CI 95%	pvalue	H3(30d)	CI 95%	pvalue	B(30d)	CI 95%	pvalue	H1Vcc(30d)	CI 95%	pvalue	H3Vcc(30d)	CI 95%	pvalue	BVcc(30d)	CI 95%	pvalue	H1(30d)	H3(30d)	B(30d)									
	2.24	1.93	2.6	<0.001	1.84	1.59	2.13	<0.001	1.04	0.93	1.17	0.504	0.83	0.6	1.15	0.323	0.55	0.39	0.75	<0.001	0.56	0.44	0.71	<0.001	62.94642857	70.10869565	46.15384615			
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)									
	2.29	2.01	2.6	<0.001	1.66	1.45	1.89	<0.001	0.96	0.86	1.06	0.407	0.83	0.63	1.09	0.195	0.61	0.47	0.79	<0.001	0.51	0.41	0.63	<0.001	63.75545852	63.25301205	46.875			
	H1(90d)	CI 95%	pvalue	H3(90d)	CI 95%	pvalue	B(90d)	CI 95%	pvalue	H1Vcc(90d)	CI 95%	pvalue	H3Vcc(90d)	CI 95%	pvalue	BVcc(90d)	CI 95%	pvalue	H1(90d)	H3(90d)	B(90d)									
	1.84	1.61	2.09	<0.001	1.92	1.72	2.15	<0.001	0.92	0.84	1.02	0.106	0.87	0.68	1.12	0.311	0.64	0.51	0.81	<0.001	0.51	0.42	0.62	<0.001	52.7173913	66.66666667	44.56521739			
Endocrine, nutritional and metabolic diseases	H1(30d)	CI 95%	pvalue	H3(30d)	CI 95%	pvalue	B(30d)	CI 95%	pvalue	H1Vcc(30d)	CI 95%	pvalue	H3Vcc(30d)	CI 95%	pvalue	BVcc(30d)	CI 95%	pvalue	H1(30d)	H3(30d)	B(30d)									
	3.45	3.04	3.92	<0.001	3.17	2.81	3.58	<0.001	1.3	1.17	1.46	<0.001	1.5	1.1	2.04	0.012	0.93	0.68	1.28	0.753	0.71	0.55	0.9	0.004	56.52173913	70.66246057	45.38461538			
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)									
	3.1	2.76	3.48	<0.001	2.92	2.62	3.26	<0.001	1.2	1.09	1.33	<0.001	1.49	1.15	1.95	0.005	1.03	0.8	1.34	0.788	0.67	0.54	0.83	<0.001	51.93548387	64.72802774	44.16666667			
	H1(90d)	CI 95%	pvalue	H3(90d)	CI 95%	pvalue	B(90d)	CI 95%	pvalue	H1Vcc(90d)	CI 95%	pvalue	H3Vcc(90d)	CI 95%	pvalue	BVcc(90d)	CI 95%	pvalue	H1(90d)	H3(90d)	B(90d)									
	2.88	2.58	3.21	<0.001	2.75	2.48	3.05	<0.001	1.14	1.04	1.26	0.005	1.54	1.22	1.96	<0.001	1.12	0.89	1.41	0.324	0.69	0.57	0.84	<0.001	46.52777778	59.27272727	39.47368421			
Mental, Behavioral and Neurodevelopmental disorders	H1(30d)	CI 95%	pvalue	H3(30d)	CI 95%	pvalue	B(30d)	CI 95%	pvalue	H1Vcc(30d)	CI 95%	pvalue	H3Vcc(30d)	CI 95%	pvalue	BVcc(30d)	CI 95%	pvalue	H1(30d)	H3(30d)	B(30d)									
	3.92	3.37	4.55	<0.001	3.68	3.21	4.23	<0.001	1.15	1.01	1.3	0.037	1.8	1.31	2.48	<0.001	1.13	0.82	1.57	0.432	0.75	0.59	0.96	0.02	54.08163265	69.29347826	34.7826087			
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)									
	3.33	2.91	3.8	<0.001	3.24	2.86	3.66	<0.001	1	0.89	1.11	1	1.77	1.35	2.31	<0.001	1.11	0.84	1.46	0.462	0.65	0.52	0.8	<0.001	48.84684685	65.74074074	35			
	H1(90d)	CI 95%	pvalue	H3(90d)	CI 95%	pvalue	B(90d)	CI 95%	pvalue	H1Vcc(90d)	CI 95%	pvalue	H3Vcc(90d)	CI 95%	pvalue	BVcc(90d)	CI 95%	pvalue	H1(90d)	H3(90d)	B(90d)									
	3.04	2.67	3.45	<0.001	3.02	2.69	3.4	<0.001	0.96	0.87	1.06	0.436	1.86	1.47	2.36	<0.001	1.2	0.94	1.52	0.142	0.67	0.55	0.81	<0.001	38.81578947	60.26490066	30.20833333			
Diseases of the nervous system	H1(30d)	CI 95%	pvalue	H3(30d)	CI 95%	pvalue	B(30d)	CI 95%	pvalue	H1Vcc(30d)	CI 95%	pvalue	H3Vcc(30d)	CI 95%	pvalue	BVcc(30d)	CI 95%	pvalue	H1(30d)	H3(30d)	B(30d)									
	3.42	2.98	3.93	<0.001	3.18	2.77	3.66	<0.001	1.33	1.18	1.5	<0.001	1.39	1.01	1.91	0.046	0.96	0.7	1.31	0.876	0.74	0.59	0.94	0.01	59.35672515	69.81132075	44.36090226			
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)									
	3.17	2.97	3.54	<0.001	2.91	2.57	3.3	<0.001	1.35	1.22	1.49	<0.001	1.43	1.09	1.87	0.014	1.09	0.84	1.4	0.501	0.69	0.56	0.85	<0.001	54.88989991	62.54295533	48.88888889			
	H1(90d)	CI 95%	pvalue	H3(90d)	CI 95%	pvalue	B(90d)	CI 95%	pvalue	H1Vcc(90d)	CI 95%	pvalue	H3Vcc(90d)	CI 95%	pvalue	BVcc(90d)	CI 95%	pvalue	H1(90d)	H3(90d)	B(90d)									
	2.96	2.63	3.34	<0.001	3.28	2.93	3.66	<0.001	1.3	1.18	1.43	<0.001	1.43	1.12	1.83	0.007	1.16	0.93	1.45	0.194	0.7	0.58	0.84	<0.001	51.68918919	64.63414634	46.15384615			
Diseases of the nervous system	H1(30d)	CI 95%	pvalue	H3(30d)	CI 95%	pvalue	B(30d)	CI 95%	pvalue	H1Vcc(30d)	CI 95%	pvalue	H3Vcc(30d)	CI 95%	pvalue	BVcc(30d)	CI 95%	pvalue	H1(30d)	H3(30d)	B(30d)									
	1.75	1.53	1.99	<0.001	1.28	1.13	1.45	<0.001	0.41	0.37	0.46	<0.001	0.99	0.73	1.35	1	0.67	0.41	0.79	<0.001	0.35	0.27	0.45	<0.001	43.42857143	55.46875	14.63414634			
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)									
	1.56	1.38	1.75	<0.001	1.19	1.07	1.33	0.002	0.38	0.34	0.42	<0.001	0.99	0.76	1.29	1	0.63	0.48	0.81	<0.001	0.34	0.27	0.42	<0.001	36.53846154	47.05882353	10.52631579			
	H1(90d)	CI 95%	pvalue	H3(90d)	CI 95%	pvalue	B(90d)	CI 95%	pvalue	H1Vcc(90d)	CI 95%	pvalue	H3Vcc(90d)	CI 95%	pvalue	BVcc(90d)	CI 95%	pvalue	H1(90d)	H3(90d)	B(90d)									
	1.47	1.32	1.65	<0.001	1.15	1.03	1.27	0.01	0.37	0.34	0.41	<0.001	1.05	0.83	1.34	0.662	0.69	0.55	0.87	0.001	0.36	0.3	0.44	<0.001	28.57142857	40	2.702702703			
Diseases of the digestive system	H1(30d)	CI 95%	pvalue	H3(30d)	CI 95%	pvalue	B(30d)	CI 95%	pvalue	H1Vcc(30d)	CI 95%	pvalue	H3Vcc(30d)	CI 95%	pvalue	BVcc(30d)	CI 95%	pvalue												

Subgroups

c)

	Deaths				No Vaccinated Deaths				Vaccinated Deaths				No Vaccinated Deaths				Vaccinated Deaths											
	Pb	Pb.30d	Pb.60d	Pb.90d																								
	H1	H1.30d	H1.60d	H1.90d	H1Vcc	H1Vcc.30d	H1Vcc.60d	H1Vcc.90d	H3	H3.30d	H3.60d	H3.90d	H3Vcc	H3Vcc.30d	H3Vcc.60d	H3Vcc.90d	B	B.30d	B.60d	B.90d	Bvcc	Bvcc.30d	Bvcc.60d	Bvcc.90d				
Acute rheumatic fever	41130	488	712	882	20	0	10	10	22	0	0	0					33	10	10	10	33	0	10	10				
Chronic rheumatic heart diseases	1392806	46418	69645	83823	598	35	46	54	360	16	19	27	878	55	69	75	582	15	25	31	1058	71	91	101	599	26	38	44
Hypertensive diseases	19229842	194738	274328	332838	3035	128	163	184	1377	31	38	49	3716	171	221	251	1988	36	50	60	9377	228	301	336	3560	53	71	85
Ischemic heart diseases	7173309	159435	213982	252479	2100	135	166	187	837	25	34	41	2419	154	203	233	1137	32	48	64	3702	189	242	272	1563	45	62	70
Cerebrovascular diseases	4671061	156215	201971	232912	1351	105	135	145	755	32	40	45	1795	130	167	188	1101	31	47	55	2760	129	164	198	1464	42	52	61
Diseases of arteries, arterioles and capillaries	4985438	84784	120527	146896	1684	93	119	133	917	28	37	46	2002	115	145	167	1228	24	37	48	3402	127	162	183	1839	41	55	67
Diabetes mellitus	8791297	99837	141519	172076	2227	100	126	139	938	23	28	35	2296	107	138	153	1190	20	33	43	5674	120	158	183	2487	34	49	61
Overweight, obesity and other hyperalimentation	9198882	52946	73015	87215	2343	65	83	94	1242	23	30	35	2456	60	80	96	1695	14	25	32	9480	80	106	123	4288	18	24	30
Asthma	6683762	21601	32050	40199	2785	35	43	50	1462	17	21	25	3706	36	49	57	2238	14	24	28	12734	62	78	85	5531	20	26	31
Other chronic obstructive pulmonary disease	2941068	73390	104492	126992	1377	85	109	133	631	23	25	31	1648	104	139	155	775	15	21	30	2486	123	160	174	1019	33	43	48
Diseases of liver	3829178	106410	142901	166608	1406	86	125	143	753	29	39	43	1387	87	116	132	938	20	33	41	3373	132	158	175	1946	28	37	43
Acute kidney failure and chronic kidney disease	5817303	269846	350999	403000	2377	196	238	258	996	45	61	68	2805	240	290	327	1367	42	64	75	4335	289	357	391	1688	57	77	92

SubgroupsOdds

d)

	No Vaccinated									Vaccinated									Efficiency(%) Unvaccinated								
	H1(30d)	CI 95%	pvalue	H3(30d)	CI 95%	pvalue	B(30d)	CI 95%	pvalue	H1Vcc(30d)	CI 95%	pvalue	H3Vcc(30d)	CI 95%	pvalue	BVcc(30d)	CI 95%	pvalue	H1(30d)	H3(30d)	B(30d)						
Chronic rheumatic heart diseases	1.8	1.28	2.54	0.002	1.94	1.48	2.55	<0.001	2.09	1.64	2.66	<0.001	1.35	0.82	2.23	0.238	0.77	0.46	1.28	0.356	1.32	0.89	1.9	0.171	25	60.30927835	36.84210526
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)						
	1.58	1.17	1.24	0.005	1.62	1.27	2.07	<0.001	1.79	1.44	2.22	<0.001	1.06	0.67	1.68	0.809	0.85	0.57	1.27	0.505	1.29	0.93	1.79	0.133	32.91139241	47.5308642	27.93296089
Hypertensive diseases	H1(90d)	CI 95%	pvalue	H3(90d)	CI 95%	pvalue	B(90d)	CI 95%	pvalue	H1Vcc(90d)	CI 95%	pvalue	H3Vcc(90d)	CI 95%	pvalue	BVcc(90d)	CI 95%	pvalue	H1(90d)	H3(90d)	B(90d)						
	1.55	1.17	2.05	0.003	1.46	1.15	1.85	0.003	1.65	1.34	2.02	<0.001	1.27	0.86	1.87	0.223	0.88	0.61	1.26	0.542	1.24	0.91	1.68	0.169	18.06451613	39.7260274	24.84849485
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)						
Ischemic heart diseases	4.31	3.61	5.15	<0.001	4.72	4.05	5.51	<0.001	2.44	2.14	2.78	<0.001	2.25	1.58	3.22	<0.001	1.81	1.3	2.51	0.001	1.48	1.13	1.94	0.007	47.79582367	61.65254237	39.3442623
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)						
	3.93	3.35	4.6	<0.001	4.38	3.82	5.01	<0.001	2.3	2.05	2.57	<0.001	1.96	1.42	2.71	<0.001	1.79	1.35	2.36	<0.001	1.41	1.11	1.78	0.006	50.12722646	59.13242009	38.69565217
Cerebrovascular diseases	H1(90d)	CI 95%	pvalue	H3(90d)	CI 95%	pvalue	B(90d)	CI 95%	pvalue	H1Vcc(90d)	CI 95%	pvalue	H3Vcc(90d)	CI 95%	pvalue	BVcc(90d)	CI 95%	pvalue	H1(90d)	H3(90d)	B(90d)						
	3.67	3.16	4.26	<0.001	4.12	3.62	4.68	<0.001	2.11	1.9	2.36	<0.001	2.1	1.58	2.79	<0.001	1.77	1.37	2.29	<0.001	1.39	1.12	1.72	0.004	42.77929155	57.03883495	34.12322275
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)						
Diseases of arteries, arterioles and capillaries	3.02	2.54	3.6	<0.001	2.99	2.54	3.52	<0.001	2.37	2.04	2.75	<0.001	1.35	0.91	2.02	0.128	1.27	0.9	1.81	0.189	1.3	0.97	1.75	0.085	55.29801325	57.32054541	45.14767932
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)						
	2.79	2.38	3.27	<0.001	2.98	2.58	3.44	<0.001	2.27	2	2.59	<0.001	1.38	0.98	1.94	0.083	1.43	1.07	2.41	0.018	1.34	1.04	1.73	0.026	50.53763441	52.01342282	40.969163
Diabetes mellitus	H1(90d)	CI 95%	pvalue	H3(90d)	CI 95%	pvalue	B(90d)	CI 95%	pvalue	H1Vcc(90d)	CI 95%	pvalue	H3Vcc(90d)	CI 95%	pvalue	BVcc(90d)	CI 95%	pvalue	H1(90d)	H3(90d)	B(90d)						
	2.68	2.31	3.11	<0.001	2.92	2.55	3.34	<0.001	2.17	1.92	2.46	<0.001	1.41	1.03	1.93	0.038	1.63	1.27	2.1	<0.001	1.29	1.01	1.63	0.046	47.3880597	44.17808219	40.55299539
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)						
Overweight, obesity and other hyperalimentation	2.44	2	2.97	<0.001	2.26	1.89	2.7	<0.001	1.42	1.19	1.7	<0.001	1.28	0.9	1.82	0.187	0.84	0.59	1.2	0.401	0.85	0.63	1.16	0.344	47.54098361	62.83185841	40.14084507
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)						
	2.46	2.06	2.93	<0.001	2.27	1.94	2.66	<0.001	1.4	1.2	1.64	<0.001	1.24	0.9	1.7	0.18	0.99	0.74	1.32	1	0.81	0.62	1.07	0.157	49.59349593	56.3876652	42.14285714
Diseases of liver	H1(90d)	CI 95%	pvalue	H3(90d)	CI 95%	pvalue	B(90d)	CI 95%	pvalue	H1Vcc(90d)	CI 95%	pvalue	H3Vcc(90d)	CI 95%	pvalue	BVcc(90d)	CI 95%	pvalue	H1(90d)	H3(90d)	B(90d)						
	2.29	1.93	2.72	<0.001	2.23	1.92	2.59	<0.001	1.48	1.28	1.71	<0.001	1.21	0.89	1.63	0.21	1	0.76	1.31	0.945	0.83	0.64	1.07	0.167	47.16157205	55.15969507	43.91891892
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)						
Acute kidney failure and chronic kidney disease	3.38	2.74	4.16	<0.001	3.52	2.92	4.25	<0.001	2.24	1.88	2.68	<0.001	1.82	1.25	2.65	0.004	1.15	0.77	1.73	0.441	1.32	0.97	1.8	0.086	46.15384615	57.32054545	41.07142857
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)						
	3.07	2.55	3.7	<0.001	3.15	2.66	3.73	<0.001	2.02	1.72	2.36	<0.001	1.7	1.22	2.36	0.003	1.25	0.9	1.74	0.192	1.24	0.95	1.63	0.111	44.62540717	60.31746032	38.61386139
Other chronic obstructive pulmonary disease	H1(90d)	CI 95%	pvalue	H3(90d)	CI 95%	pvalue	B(90d)	CI 95%	pvalue	H1Vcc(90d)	CI 95%	pvalue	H3Vcc(90d)	CI 95%	pvalue	BVcc(90d)	CI 95%	pvalue	H1(90d)	H3(90d)	B(90d)						
	2.82	2.37	3.37	<0.001	3	2.56	3.51	<0.001	1.87	1.61	2.17	<0.001	1.74	1.29	2.34	<0.001	1.34	1	1.79	0.052	1.25	0.98	1.59	0.084	38.29787234	55.33333333	33.15508021
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)						
Asthma	4.09	3.35	5	<0.001	4.26	3.5	5.17	<0.001	1.88	1.57	2.25	<0.001	2.19	1.45	3.31	<0.001	1.49	0.96	2.32	0.098	1.21	0.86	1.69	0.256	46.45476773	65.02347418	35.63829787
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)						
	3.67	3.06	4.39	<0.001	3.91	3.29	4.64	<0.001	1.75	1.49	2.05	<0.001	1.88	1.29	2.74	0.002	1.74	1.23	2.46	0.004	1.23	0.93	1.63	0.151	48.77384196	55.49871223	29.71428571
Diseases of liver	H1(90d)	CI 95%	pvalue	H3(90d)	CI 95%	pvalue	B(90d)	CI 95%	pvalue	H1Vcc(90d)	CI 95%	pvalue	H3Vcc(90d)	CI 95%	pvalue	BVcc(90d)	CI 95%	pvalue	H1(90d)	H3(90d)	B(90d)						
	3.33	2.81	3.96	<0.001	3.58	3.03	4.21	<0.001	1.67	1.44	1.93	<0.001	1.94	1.39	2.72	<0.001	1.88	1.38	2.55	<0.001	1.26	0.98	1.62	0.082	41.74174174	47.48603352	24.5508982
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)						
Acute kidney failure and chronic kidney disease	4.93	3.85	6.31	<0.001	4.33	3.35	5.59	<0.001	1.47	1.18	1.84	0.001	3.26	2.16	4.92	<0.001	1.44	0.85	2.43	0.194	0.73	0.46	1.16	0.224	33.87423935	66.74364896	50.34013605
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)						
	4.59	3.69	5.71	<0.001	4.21	3.37	5.26	<0.001	1.42	1.17	1.72	<0.001	3.09	2.15	4.44	<0.001	1.87	1.26	2.78	0.004	0.7	0.47	1.05	0.085	32.67973856	55.58194774	50.70422535
Diseases of liver	H1(90d)	CI 95%	pvalue	H3(90d)	CI 95%	pvalue	B(90d)	CI 95%	pvalue	H1Vcc(90d)	CI 95%	pvalue	H3Vcc(90d)	CI 95%	pvalue	BVcc(90d)	CI 95%	pvalue	H1(90d)	H3(90d)	B(90d)						
	4.37	3.55	5.37	<0.001	4.25	3.46	5.21	<0.001	1.38	1.15	1.64	<0.001	3.03	2.16	4.24	<0.001	2.01	1.42	2.85	<0.001	0.74	0.51	1.05	0.098	30.66361556	52.70588235	46.37811159
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)						
Acute kidney failure and chronic kidney disease	3.93	2.81	5.48	<0.001	3.03	2.18	4.2	<0.001	1.51	1.18	1.94	0.002	3.63	2.25	5.85	<0.001	1.94	1.15	3.28	0.022	1.12	0.72	1.74	0.554	7.633587786	38.97359736	25.82781457
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%	pvalue	H3Vcc(60d)	CI 95%	pvalue	BVcc(60d)	CI 95%	pvalue	H1(60d)	H3(60d)	B(60d)						
	3.25	2.41	4.4	<0.001	2.78	2.1	3.69	<0.001	1.28	1.02	1.6	0.034	3.02	1.97	4.65	<0.001	2.25	1.5	3.36	<0.001	0.98	0.67	1.44	1	7.076923077	19.0647482	23.4375
Diseases of liver	H1(90d)	CI 95%	pvalue	H3(90d)	CI 95%	pvalue	B(90d)	CI 95%	pvalue	H1Vcc(90d)	CI 95%	pvalue	H3Vcc(90d)	CI 95%	pvalue	BVcc(90d)	CI 95%	pvalue	H1(90d)	H3(90d)	B(90d)						
	3.02	2.28	4	<0.001	2.58	1.99	3.35	<0.001	1.11	0.9	1.37	0.329	2.88	1.94	4.27	<0.001	2.09	1.44	3.04	<0.001	0.93	0.65	1.33	0.794	4.635761589	18.99224806	16.21621622
	H1(60d)	CI 95%	pvalue	H3(60d)	CI 95%	pvalue	B(60d)	CI 95%	pvalue	H1Vcc(60d)	CI 95%																

TRINETX COHORT CODES

H1N1			
MUST HAVE		MUST NOT HAVE	
49521-8	OR		
55464-9			
82167-8			
77026-3			
49520-0			
82168-6			
77028-9			
94395-1			

H3N1			
MUST HAVE		MUST NOT HAVE	
49524-2	OR		
82169-4			
77027-1			
49523-4			
92808-5			

B			
MUST HAVE		MUST NOT HAVE	
40982-1	OR		
76080-1			
82170-2			
49535-8			
76079-3			
92141-1			
85478-6			
92976-0			

H1N1 Vaccinated cohort

MUST HAVE	
49521-8	OR
55464-9	
82167-8	
77026-3	
49520-0	
82168-6	
77028-9	
94395-1	

MUST NOT HAVE	

AND	
MUST HAVE	
90657	OR
90661	
90656	
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90673	
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90686	
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90694	
90666	
90685	
90756	
90630	
90682	
90687	

AND	
CANNOT HAVE	

H1N1 Unvaccinated cohort

MUST HAVE	
49521-8	OR
55464-9	
82167-8	
77026-3	
49520-0	
82168-6	
77028-9	
94395-1	

MUST NOT HAVE	

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MUST HAVE	

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H3N1 Vaccinated cohort

MUST HAVE	
49524-2	OR
82169-4	
77027-1	
49523-4	
92808-5	

MUST NOT HAVE	

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CANNOT HAVE	

H3N1 Unvaccinated cohort

MUST HAVE	
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82169-4	
77027-1	
49523-4	
92808-5	

MUST NOT HAVE	

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90685	
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90682	
90687	

B Vaccinated cohort

MUST HAVE	
40982-1	OR
76080-1	
82170-2	
49535-8	
76079-3	
92141-1	
85478-6	
92976-0	

MUST NOT HAVE	

AND	
MUST HAVE	
90657	OR
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90687	

AND	
CANNOT HAVE	

B Unvaccinated cohort

MUST HAVE	
40982-1	OR
76080-1	
82170-2	
49535-8	
76079-3	
92141-1	
85478-6	
92976-0	

MUST NOT HAVE	

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	OR

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