

Supplementary material

Table S1: Pooled seasonal vaccine effectiveness against any influenza, influenza A, A(H3N2), A(H1N1)pdm09 and B, overall, by age group and among target group. VEBIS primary care multicentre study, Europe, influenza season 2022–23.

Influenza type/subtype	Study population	N [†]	Cases	Cases vaccinated	Controls	Controls vaccinated	VE (95% CI)
Any influenza	All ages	33 095	8 025	552	25 070	4 968	53 (48–58)
	0-14 years	9 220	2 891	72	6 329	472	69 (60–76)
	15-64 years	18 936	4 698	247	14 238	1 652	51 (44–58)
	65+ years	4 939	436	233	4 503	2 844	34 (17–47)
	Target group	12 056	1 922	419	10 134	4 020	45 (37–52)
Influenza A	All ages	30 137	5 188	471	24 949	4 953	39 (31–46)
	0-14 years	8 025	1 717	53	6 308	472	53 (36–66)
	15-64 years	17 230	3 079	204	14 151	1 643	40 (29–49)
	65+ years	4 882	392	214	4 490	2 838	30 (11–44)
	Target group	11 518	1 438	371	10 080	4 011	35 (25–44)
Influenza A(H3N2)	All ages	26 637	3 468	268	23 169	4 710	36 (25–45)
	0-14 years	6 951	1 318	35	5 633	436	52 (29–68)
	15-64 years	15 176	1 927	119	13 249	1 529	33 (17–46)
	65+ years	4 510	223	114	4 287	2 745	30 (4–48)
	Target group	10 367	859	203	9 508	3 830	33 (18–45)
Influenza A(H1N1)pdm09	All ages	26 045	1 375	169	24 670	4 947	46 (35–56)
	0-14 years	6 471	287	14	6 184	472	59 (30–78)
	15-64 years	14 969	951	70	14 018	1 640	52 (38–64)
	65+ years	4 491	137	85	4 354	2 781	29 (-4–52)
	Target group	10 497	485	143	10 012	4 006	36 (19–49)
Influenza B	All ages	26 180	2 824	81	23 356	4 787	76 (70–81)
	0-14 years	7 297	1 176	19	6 121	468	84 (75–91)
	15-64 years	14 656	1 607	44	13 049	1 586	72 (62–80)
	Target group	9 854	481	47	9 373	3 869	71 (60–80)

[†] Based on the complete case analysis: records with missing age, sex and chronic condition are dropped.

Abbreviations: VEBIS, Vaccine Effectiveness, Burden and Impact Studies; N, number; VE, vaccine effectiveness; CI, confidence interval

Table S2: Pooled seasonal vaccine effectiveness against any influenza, influenza A, A(H3N2), A(H1N1)pdm09 and B, overall, by age group and among target group excluding SARS-CoV-2 positive controls. VEBIS primary care multicentre study, Europe, influenza season 2022–23.

Influenza type/subtype	Study population	N [†]	Cases	Cases vaccinated	Controls	Controls vaccinated	VE (95% CI)
Any influenza	All ages	29 732	8 025	552	21 707	4 285	54 (49–59)
	0-14 years	8 936	2 891	72	6 045	456	70 (60–77)
	15-64 years	16 599	4 698	247	11 901	1 394	52 (44–58)
	65+ years	4 197	436	233	3 761	2 435	36 (20–49)
	Target group	10 464	1 922	419	8 542	3 445	46 (38–53)
Influenza A	All ages	26 798	5 188	471	21 610	4 275	41 (33–48)
	0-14 years	7 743	1 717	53	6 026	456	54 (38–67)
	15-64 years	14 910	3 079	204	11 831	1 388	41 (30–50)
	65+ years	4 145	392	214	3 753	2 431	32 (14–46)
	Target group	9 936	1 438	371	8 498	3 439	36 (26–45)
Influenza A(H3N2)	All ages	23 554	3 468	268	20 086	4 083	39 (28–48)
	0-14 years	6 697	1 318	35	5 379	422	54 (31–70)
	15-64 years	13 019	1 927	119	11 092	1 292	34 (19–48)
	65+ years	3 838	223	114	3 615	2 369	32 (8–50)
	Target group	8 905	859	203	8 046	3 299	34 (20–46)
Influenza A(H1N1)pdm09	All ages	22 733	1 375	169	21 358	4 270	47 (36–56)
	0-14 years	6 193	287	14	5 906	456	60 (31–78)
	15-64 years	12 668	951	70	11 717	1 385	52 (38–64)
	65+ years	3 782	137	85	3 645	2 386	32 (-1–54)
	Target group	8 925	485	143	8 440	3 435	37 (20–50)
Influenza B	All ages	23 128	2 824	81	20 304	4 150	76 (70–81)
	0-14 years	7 020	1 176	19	5 844	452	84 (75–91)
	15-64 years	12 552	1 607	44	10 945	1 342	72 (61–80)
	Target group	8 418	481	47	7 937	3 333	69 (57–78)

[†] Based on the complete case analysis: records with missing age, sex and chronic condition are dropped.

Abbreviations: VEBIS, Vaccine Effectiveness, Burden and Impact Studies; N, number; VE, vaccine effectiveness; CI, confidence interval