Supplemental Information

SUPPLEMENTAL TABLE 4 Crude and Adjusted VE by Vaccine Type, Age Group, and Influenza Season

		Influenza Positive (Cases)		Influenza Negative (Controls)		Crude		Adjusted[a]	
		No. Vaccinated/Total	% Vaccinated	No. Vaccinated/Total	% Vaccinated	VE, %	95% CI	VE, %	95% CI
2010–2011									
2–17 y	LAIV	21/267	8	95/640	15	51	20 to 70	57	25 to 76
	IIV	66/314	21	411/956	43	65	52 to 74	66	52 to 76
2–8 y	LAIV	14/173	8	64/379	17	57	20 to 76	45	−12 to 72
	IIV	35/196	18	261/576	45	74	61 to 82	70	53 to 81
9–17 y	LAIV	7/94	7	31/261	12	40	−41 to 75	59	−10 to 85
	IIV	31/118	26	150/380	39	45	14 to 65	53	20 to 73
2011–2012									
2–17 y	LAIV	12/225	5	140/990	14	66	37 to 81	67	37 to 83
	IIV	51/264	19	448/1298	35	55	37 to 67	55	35 to 69
2–8 y	LAIV	6/132	5	90/586	15	74	39 to 89	71	29 to 88
	IIV	31/157	20	294/790	37	58	37 to 73	51	22 to 69
9–17 y	LAIV	6/93	6	50/404	12	51	−18 to 80	62	−10 to 87
	IIV	20/107	19	154/508	30	47	11 to 69	61	29 to 79
2012–2013									
2–17 y	LAIV	61/722	8	144/869	17	54	36 to 66	46	24 to 62
	IIV	198/859	23	424/1149	37	49	37 to 58	45	31 to 56
2–8 y	LAIV	35/391	9	93/470	20	60	40 to 74	57	32 to 73
	IIV	110/466	24	261/638	41	55	42 to 66	46	27 to 60
9–17 y	LAIV	26/331	8	51/399	13	42	4 to 65	31	−19 to 60
	IIV	88/393	22	163/511	32	38	17 to 54	41	18 to 57
2013–2014									
2–17 y	LAIV	34/220	15	130/818	16	3	−46 to 36	−1	−57 to 35
	IIV	36/222	16	432/1120	39	69	55 to 79	60	41 to 73
2–8 y	LAIV	22/125	18	70/455	15	−18	−99 to 31	−33	−144 to 27
	IIV	21/124	17	284/669	42	72	55 to 83	61	34 to 77
9–17 y	LAIV	12/95	13	60/363	17	27	−42 to 62	43	−17 to 72
	IIV	15/98	15	148/451	33	63	34 to 79	60	25 to 79

[a] Adjusted models included age at enrollment (groups), gender, study site, race or ethnicity, presence of high-risk health condition, parent- or guardian-rated general health status, interval from onset to enrollment, and calendar time (2-wk intervals).

SUPPLEMENTAL TABLE 5 Crude and Adjusted VE by Influenza Type or Subtype, Vaccine Type, and Influenza Season for All Participants Aged 2–17 y

		Influenza Positive (Cases)		Influenza Negative (Controls)		Crude		Adjusted[a]	
		No. Vaccinated/Total	% Vaccinated	No. Vaccinated/Total	% Vaccinated	VE, %	95% CI	VE, %	95% CI
A(H1N1)pdm09									
2010–2011	LAIV	7/61	13	95/640	15	26	−68 to 67	15	−110 to 65
	IIV	9/63	14	411/956	43	78	55 to 89	75	49 to 88
2011–2012	LAIV	0/27	0	140/990	14	NR	—	NR	—
	IIV	1/28	4	448/1298	35	NR	—	NR	—
2012–2013	LAIV	2/12	17	144/869	17	NR	—	NR	—
	IIV	0/10	0	424/1149	37	NR	—	NR	—
2013–2014	LAIV	24/179	13	130/818	16	18	−31 to 49	9	−53 to 46
	IIV	27/182	15	432/1120	39	72	57 to 82	60	38 to 75
A(H3N2)									
2010–2011	LAIV	8/91	9	95/640	15	45	−18 to 74	67	16 to 87
	IIV	20/105	19	411/956	43	69	48 to 81	74	54 to 85
2011–2012	LAIV	10/155	6	140/990	14	58	19 to 76	58	11 to 80
	IIV	42/187	22	448/1298	35	45	21 to 62	51	26 to 68
2012–2013	LAIV	27/290	9	144/869	17	48	20 to 65	45	11 to 66
	IIV	99/362	27	424/1149	37	36	16 to 50	31	7 to 48
2013–2014	LAIV	7/18	39	130/818	16	NR	—	NR	—
	IIV	7/18	39	432/1120	39	NR	—	NR	—
B									
2010–2011	LAIV	5/113	4	95/640	15	73	33 to 89	77	32 to 92
	IIV	37/145	26	411/956	43	55	33 to 69	48	19 to 67
2011–2012	LAIV	2/43	5	140/990	14	NR	—	NR	—
	IIV	8/49	16	448/1298	35	NR	—	NR	—
2012–2013	LAIV	30/408	7	144/869	17	60	40 to 73	51	33 to 69
	IIV	96/474	20	424/1149	37	57	44 to 66	52	37 to 64
2013–2014	LAIV	1/16	6	130/818	16	NR	—	NR	—
	IIV	1/16	6	432/1120	39	NR	—	NR	—

NR, not reported due to instability of logistic models.

[a] Adjusted models included age at enrollment (groups), gender, study site, race or ethnicity, presence of high-risk health condition, parent- or guardian-rated general health status, interval from onset to enrollment, and calendar time (2-wk intervals).

[AQ7]

SUPPLEMENTAL TABLE 6 Descriptive Characteristics of Participants Aged 2–17 y of Age With Medically Attended Acute Respiratory Infections by Season and Influenza RT-PCR Test Result

	2010–2011		2011–2012		2012–2013		2013–2014	
	Test-Negative Controls	Influenza-Positive Cases	Test-Negative Controls	Influenza-Positive Cases	Test-Negative Controls	Influenza-Positive Cases	Test-Negative Controls	Influenza-Positive Cases
All, no. (%)[a]	1051	335	1438	276	1293	920	1250	256
Age at enrollment, y								
2–4	356 (34)	75 (22)	498 (35)	54 (20)	427 (33)	197 (21)	412 (33)	62 (24)
5–8	284 (27)	135 (40)	382 (27)	109 (39)	304 (24)	304 (33)	327 (26)	84 (33)
9–17	411 (39)	125 (37)	558 (39)	113 (41)	562 (43)	419 (46)	511 (41)	110 (43)
Female	502 (48)	141 (42)	716 (50)	142 (51)	628 (49)	445 (48)	613 (49)	129 (50)
Race or ethnicity[b]								
White, non-Hispanic	736 (71)	173 (54)	906 (64)	179 (66)	849 (66)	608 (67)	864 (69)	179 (70)
Black, non-Hispanic	100 (10)	58 (18)	154 (11)	35 (13)	111 (9)	108 (12)	105 (8)	25 (10)
Other race, non-Hispanic	45 (4)	23 (7)	175 (12)	34 (13)	152 (12)	103 (11)	133 (11)	30 (12)
Hispanic, any race	153 (15)	68 (21)	182 (13)	23 (8)	169 (13)	92 (10)	148 (12)	22 (9)
High-risk health condition present[c]	212 (20)	62 (19)	261 (18)	33(12)	319 (25)	198 (22)	301 (24)	38 (15)
Vaccinated in current season	506 (48)	87 (26)	588 (41)	63 (23)	568 (44)	259 (28)	562 (45)	70 (27)
Vaccinated in previous season[d]	370 (35)	75 (22)	727 (51)	102 (37)	635 (49)	332 (36)	681 (54)	91 (36)
Parent- or guardian-rated general health status								
Good, fair, poor	—	—	261 (18)	31 (11)	211 (16)	126 (14)	174 (14)	25 (10)
Excellent, very good	—	—	1177 (82)	245 (89)	1082 (84)	794 (86)	1076 (86)	231 (90)
Self-rated subjective severity (median, interquartile range)[e]	—	—	65 (50–80)	60 (45–70)	65 (50–75)	53 (45–70)	70 (50–80)	60 (45–75)
Fever or feverishness reported[f]	874 (83)	321 (96)	1036 (72)	256 (93)	824 (64)	842 (92)	339/602 (56)	124/139 (89)
Interval between symptom onset and enrollment, d								
≤2	516 (49)	177 (53)	566 (39)	136 (49)	549 (42)	411 (45)	448 (36)	111 (43)
3–4	375 (36)	112 (33)	541 (38)	103 (37)	489 (38)	350 (38)	486 (39)	89 (35)
5–7	160 (15)	46 (14)	331 (23)	37 (13)	255 (20)	159 (17)	316 (25)	56 (22)
Network site								
Michigan	240 (23)	149 (44)	418 (29)	97 (35)	344 (27)	265 (29)	187 (15)	41 (16)
New York	52 (5)	30 (10)	—	—	—	—	—	—
Pennsylvania	—	—	157 (11)	14 (5)	155 (12)	103 (11)	203 (16)	48 (19)
Tennessee	158 (15)	64 (19)	—	—	—	—	—	—
Texas	—	—	274 (19)	16 (6)	344 (27)	165 (18)	235 (19)	43 (17)
Washington	—	—	235 (16)	63 (23)	187 (14)	28 (3)	226 (18)	33 (13)
Wisconsin	601 (57)	92 (27)	354 (25)	86 (31)	279 (22)	359 (39)	399 (32)	91 (36)

[a] Data are presented as no. (column %).
[b] Race or ethnicity was missing for 30 participants in 2010–2011, 26 participants in 2011–2012, and 21 participants in 2012–2013.
[c] Presence of a high-risk health condition is defined as the presence of ≥1 medical record–documented high-risk code in the year before enrollment, as defined by the ACIP guidance for conditions that increase risk for complications from influenza.[1]
[d] Previous season vaccination does not include monovalent pandemic H1N1pdm09 vaccine for the 2010–2011 season.
[e] Self-rated subjective severity was on a scale of 1–100 where 0 represents "the worst health you can imagine" and 100 represents "the best health you can imagine."
[f] Data from all sites in 2011–2012 and 2012–2013 and from 2 sites (Wisconsin and Pennsylvania) in 2013–2014

SUPPLEMENTAL TABLE 7 Adjusted ORs and 95% CIs for Relative Effectiveness of LAIV to IIV by Influenza Season and Age Group Where Study Population Is Restricted to Those Without High-Risk Health Conditions

Influenza Season	Age Group, y	Vaccine	Total	No. (%) Influenza Positive	Adjusted OR[a] (95% CI)
2010–2011	2–17	LAIV	111	20 (18)	1.58 (0.78 to 3.22)
		IIV	327	39 (12)	Reference
	2–8	LAIV	76	14 (18)	1.78 (0.71 to 4.55)
		IIV	209	23 (11)	Reference
	9–17	LAIV	35	6 (17)	1.84 (0.37 to 9.09)
		IIV	118	16 (14)	Reference
2011–2012	2–17	LAIV	139	11 (8)	0.61 (0.26 to 1.41)
		IIV	355	41 (12)	Reference
	2–8	LAIV	89	6 (7)	0.49 (0.15 to 1.61)
		IIV	241	25 (10)	Reference
	9–17	LAIV	50	5 (10)	0.57 (0.15 to 2.22)
		IIV	114	16 (14)	Reference
2012–2013	2–17	LAIV	178	56 (31)	0.97 (0.63 to 1.51)
		IIV	406	131 (32)	Reference
	2–8	LAIV	111	32 (29)	0.86 (0.46 to 1.59)
		IIV	243	69 (28)	Reference
	9–17	LAIV	67	24 (36)	1.15 (0.57 to 2.33)
		IIV	163	62 (28)	Reference
2013–2014	2–17	LAIV	147	31 (21)	2.54 (1.38 to 4.67)
		IIV	325	31 (10)	Reference
	2–8	LAIV	84	20 (24)	3.97 (1.73 to 9.13)
		IIV	220	18 (8)	Reference
	9–17	LAIV	63	11 (17)	1.79 (0.62 to 5.19)
		IIV	105	13 (12)	Reference

[a] Fully adjusted models included age (group or years), gender, study site, race or ethnicity, parent- or guardian-rated general health status, interval from onset to enrollment, and calendar time (2-wk intervals).

SUPPLEMENTAL TABLE 8 Adjusted ORs and 95% CIs for Relative Effectiveness of LAIV to IIV by Influenza Season and Age Group Where Study Population Includes Partially Vaccinated Participants

Influenza Season	Age Group, y	Vaccine	Total	No. (%) Influenza Positive	Adjusted OR[a] (95% CI)
2010–2011	2–17	LAIV	159	27 (17)	1.21 (0.71 to 2.07)
		IIV	617	92 (15)	Reference
	2–8	LAIV	121	20 (17)	1.14 (0.60 to 2.17)
		IIV	436	61 (14)	Reference
2011–2012	2–17	LAIV	177	16 (9)	0.73 (0.38 to 1.39)
		IIV	580	65 (11)	Reference
	2–8	LAIV	121	10 (8)	0.63 (0.28 to 1.43)
		IIV	406	45 (11)	Reference
2012–2013	2–17	LAIV	233	67 (29)	0.92 (0.64 to 1.33)
		IIV	705	223 (32)	Reference
	2–8	LAIV	156	41 (26)	0.71 (0.44 to 1.13)
		IIV	454	135 (30)	Reference
2013–2014	2–17	LAIV	178	36 (20)	3.22 (1.85 to 5.61)
		IIV	514	37 (7)	Reference
	2–8	LAIV	106	24 (23)	5.83 (2.69 to 12.62)
		IIV	351	22 (6)	Reference

[a] Adjusted models included age at enrollment (groups), gender, study site, race or ethnicity, presence of high-risk health condition, parent- or guardian-rated general health status, interval from onset to enrollment, and calendar time (2-wk intervals).