Supplementary Digital Content

Household transmission of 2009 pandemic influenza A(H1N1): a systematic review and meta-analysis

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eTable 1: Articles excluded after reviewing the full-length text

First Author	Journal	Year	Title	Reason for exclusion
	MMWR Morb Mortal Wkly Rep	2009	Introduction and transmission of 2009 pandemic influenza A (H1N1) Virus – Kenya, June-July 2009	Less than 5 households were included in the SIR calculation.
Carcione, D.	Euro Surveill	2010	Association between 2009 seasonal influenza vaccine and influenza-like illness during the 2009 pandemic: preliminary results of a large households transmission study in Western Australia	More complete report of this study published elsewhere[19]
Carrillo-Santisteve, P.	Euro Surveill	2010	2009 pandemic influenza A(H1N1) outbreak in a complex of school in Paris, France, June 2009	Single outbreak study, household contacts were not followed up, SIR cannot be calculated.
Cauchemez, S.	Proc Natl Acad Sci USA	2011	Role of social networks in shaping disease transmission during a community outbreak of 2009 H1N1 pandemic influenza	Information to extract a crude SIR not included in the article.
Chan, P.P.	Ann Acad Med Singapore	2010	Outbreak of novel influenza A (H1N1-2009) linked to a dance club	Single outbreak study, household contacts were not followed up, SIR cannot be calculated.
Cohen, N.J.	Emerg Infect Dis	2011	Respiratory Illness in households of school-dismissed students during pandemic (H1N1) 2009	Data to extract a SIR not included in this report.
de Serres, G.	Emerg Infect Dis	2010	Contagious period for pandemic (H1N1) 2009	More complete report of the study published elsewhere[35]
Dill, C.E.	Disaster Med Public Health	2009	Novel influenza A (H1N1) outbreak on board a US navy vessel	Confined outbreak in military settings. Secondary infectivity rate reported, but not equivalent to household SIR
Donnelly, C.A.	Clin Infect Dis	2011	Serial intervals and the temporal distribution of secondary infections within households of 2009 pandemic influenza A (H1N1): implications for influenza control recommendations	More complete report of the study published elsewhere[20,24,32]
Faber, M.	Gesundheitswesen	2009	Investigation of a family cluster of influenza A/H1N1 infections in Germany, 2009	Data to extract a SIR not included in this report.
Ghani, A.C.	PLoS Curr	2009	The Early Transmission Dynamics of H1N1pdm Influenza in the United Kingdom	More complete report of the study published elsewhere[36]
Gould, D.	Evid Based Nurs	2010	Hand hygiene and facemask use within 36 hours of index patient symptom onset reduces flu transmission to household	Commentary, not an original study.

			contacts	
Janusz, K.B.	Clin Infect Dis	2011	Influenza-like illness in a community surrounding a school-based outbreak of 2009 pandemic influenza A (H1N1)	Household survey to track FARI performed, however SIR data not included.
Kelly, H.	Euro Surveill	2009	Interim analysis of pandemic influenza (H1N1) 2009 in Australia: surveillance trends, age of infection and effectiveness of seasonal vaccination	Surveillance report. Information to extract a crude SIR not included in the article.
Klick, B.	Epidemiol	2011	Transmissibility of seasonal and pandemic influenza in a cohort of households in Hong Kong in 2009	Only serological evidence of infections reported in this study.
Lee, D.H.	Am J Infect Control	2010	Risk factors for laboratory-confirmed household transmission of pandemic H1N1 2009 infection	Households were grouped according to available RT-PCR samples and matching home addresses. No other household contacts were followed up. Households were only included in the study if transmission occurred.
Marchbanks, T.L.	Clin Infect Dis	2011	An outbreak of 2009 pandemic influenza A (H1N1) virus infection in an elementary school in Pennsylvania	Household contact rates of FARI reported, however cannot classify as secondary transmission due to lack of temporal sequence.
Peltola, V.	Influenza Other Respi Viruses	2011	Pandemic influenza A(H1N1) virus in households with young children	Study faced unavoidable selection bias due to the focus on children younger than 1.5 years and faced an extraordinarily limited sample size
Simmerman, J.M.	Clin Infect Dis	2010	Influenza virus contamination of common household surfaces during the 2009 influenza A (H1N1) pandemic in Bangkok, Thailand: implications for contact transmission	More complete report of the study published elsewhere[40]
Yang, Y.	Science	2009	The transmissibility and control of pandemic influenza A (H1N1) virus	SIR reported, but source of the estimate never shown, thus crude SIR and sample size could not be extracted.
Zhang, Y.	Zhonghua Liu Xing Bing Xue Za Zhi	2009	Pattern on the spread of novel influenza A(H1N1) and qualitative assessment of containment in mainland China	Information to extract a crude SIR not included in the article.

eTable 2: Definitions of household contact used in different studies.

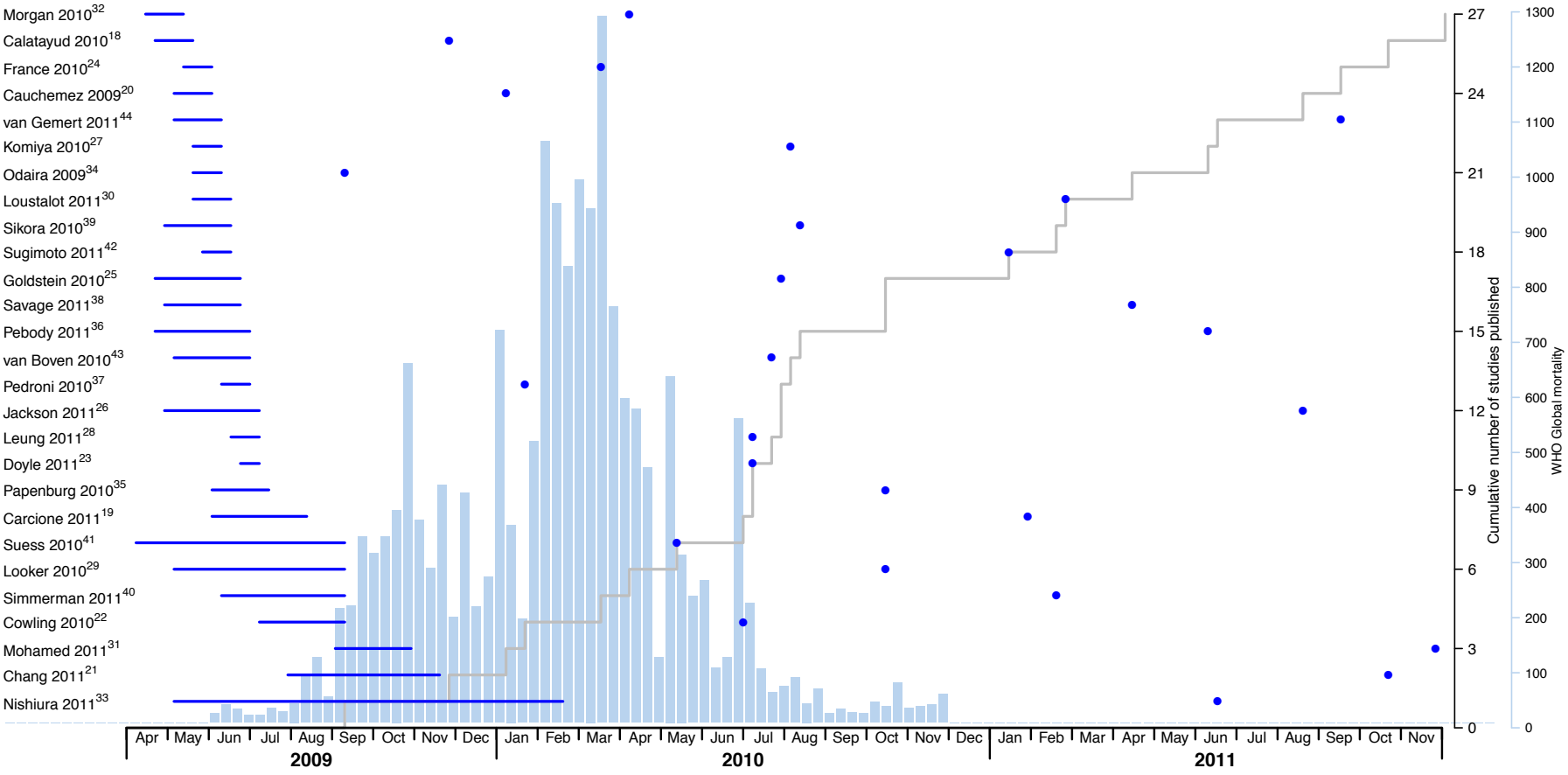
	Definition
Carcione et al 2011[19]	"A household was defined as a group of two or more people living together in a domestic residence; residential institutions, such as boarding schools, hostels or prisons were excluded. A household contact was defined as any person who had resided in the same household as the index case for at least one night during the household exposure period (one day before to seven days after onset of illness in the index case)."
Cauchemez et al 2009[20]	"…household members, who were defined as the index patient plus any person who had stayed overnight in the house at least one night within 7 days before or after the date of symptom onset in the index patient."
France et al 2010[24]	"Household contacts were defined as all persons who spent ≥2 nights per week in the household"
Looker et al 2010[29]	"Household contacts were any other people living in the household"
Loustalot et al 2011[30]	"Household contacts were defined as persons who reportedly spent at least 2 nights per week in the household of the index case"
Morgan et al 2010[32]	"Household members were defined as persons who lived at the same address as a case-patient who had laboratory-confirmed pandemic (H1N1) 2009 infection"
Papenburg et al 2010[35]	"A household contact was defined as someone living in the home of a primary case patient"
Pebody et al 2011[36]	"A household contact was any person who lived in the same household as a confirmed primary case-patient and ≥1 overnight stay after onset of illness in the person who was the primary case-patient"
Savage et al 2011[38]	"Household contacts were defined as persons who had close contact (≥1 hour exposure within two meters) with a laboratory-confirmed case in a household setting (Shared, common accommodation in terms of both sleeping and eating at least one meal)."
Sikora et al 2010[39]	"Household contacts were defined as any individual self-reporting to reside in the same household."
Simmerman et al 2011[40]	"'Eligible index cases' households must have had at least two other members aged ≥1 month who planned to sleep inside the house for a period of at least 21 days from the time of enrollment."
Suess et al 2010[41]	"A household was defined as a domestic unit consisting of the members of a family who live together including nonrelatives and intimate partners…Participants living in one household with the respective index patient were termed "household members" or "household contacts"."
van Boven et al 2010[43]	"Household contacts were defined as persons living in the same residence as the index case."

eTable 3: Proportion of household contacts with confirmed pH1N1 among all household contacts reporting various clinical signs, symptoms and syndromes.

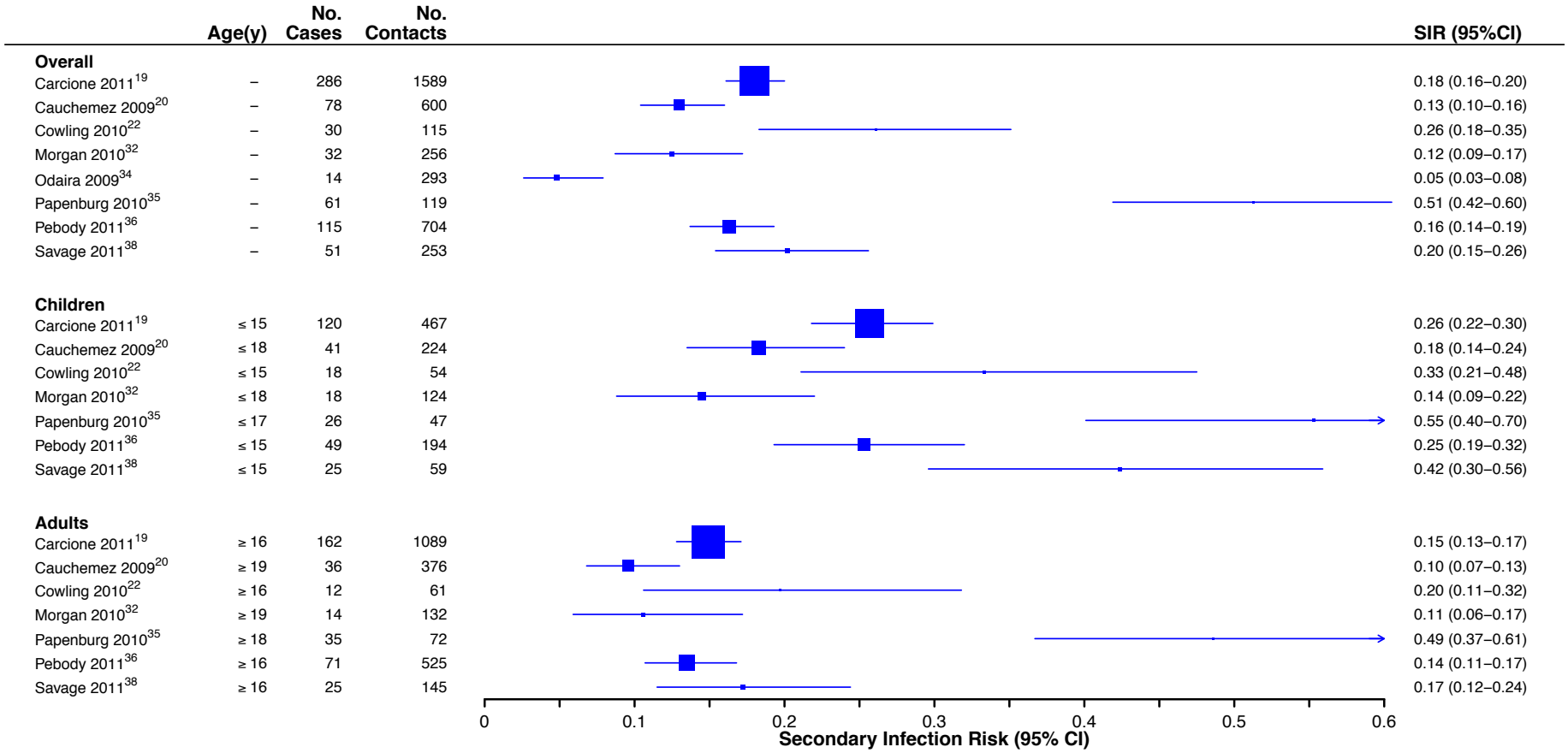
	Cowling 2010[22]			Papenburg 2010[35]		
	No. with sign/symptom	pH1N1 positive		No. with sign/symptom	pH1N1 positive	
	n	n	(%)	n	n	(%)
Cough	33	8	(24.2%)	59	38	(64.4%)
Fever ≥37.8°C	15	5	(33.3%)	35	30	(85.7%)
Sore throat	26	6	(23.1%)	--	--	--
Headache	33	4	(12.1%)	--	--	--
Myalgia	24	3	(12.5%)	--	--	--
Diarrhoea	--	--	--	22	11	(50.0%)
Nausea	--	--	--	8	7	(87.5%)
Runny nose	36	4	(11.1%)	--	--	--
FARI*	13	8	(61.5%)	34	31	(91.2%)
ARI**	39	4	(10.3%)	61	42	(68.9%)
Total	**130**	**9**	**(6.9%)**	**119**	**45**	**(37.8%)**

* Febrile Acute Respiratory Illness (FARI) was defined as fever (≥37.8°C) plus cough and/or sore throat.

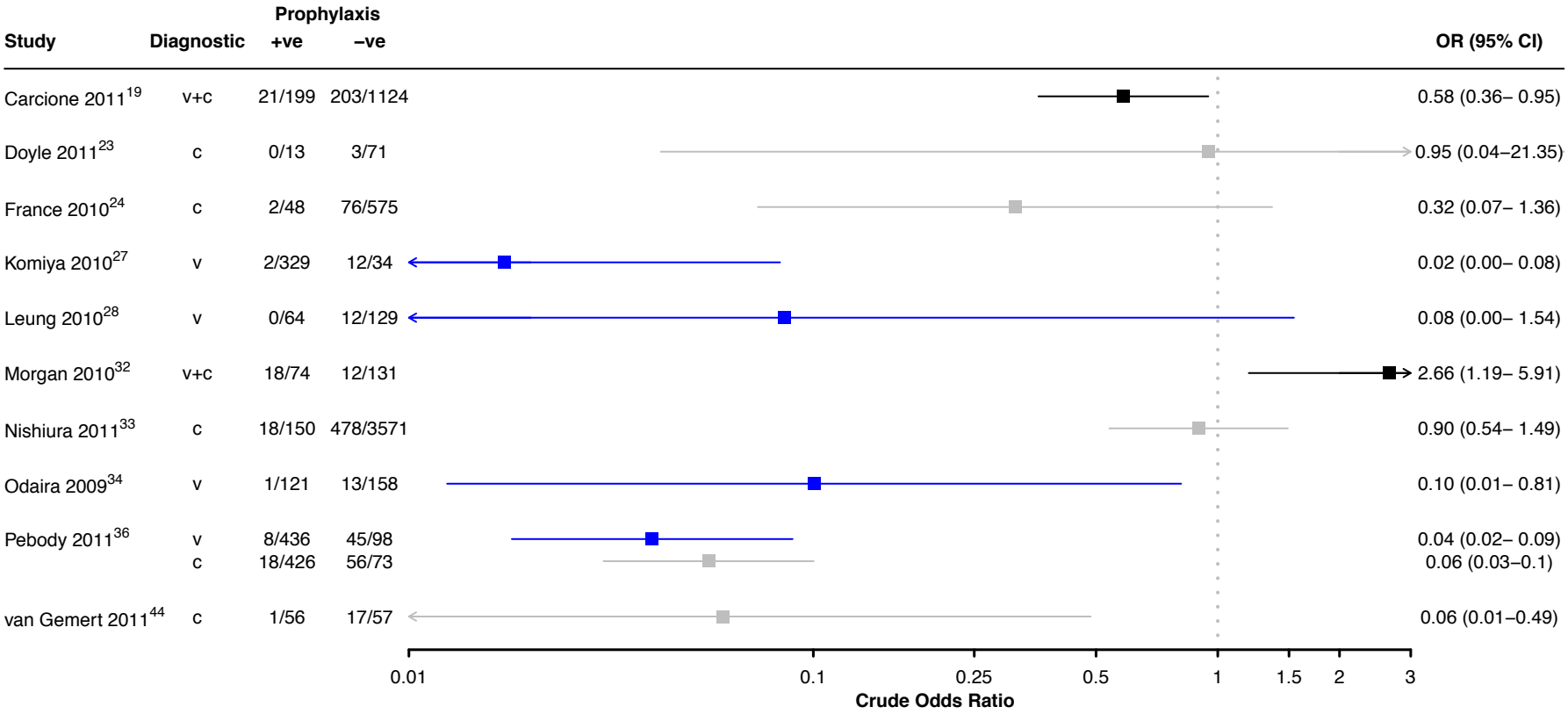
** Acute Respiratory Illness (ARI) was defined as the presence of at least two of the following symptoms: fever or feverishness, cough, sore throat, rhinorrhea, aches or pains in muscles, headache and phlegm



eFigure 1: Participant recruitment dates (solid horizontal lines), eventual publication dates of studies included in the review (points) and the cumulative proportion of studies published (gray line) compared to the histogram of confirmed pH1N1 deaths reported to the World Health Organization (underlying histogram).



eFigure 2: Secondary infection risks (SIR_{ARI}) according to report of acute respiratory illness.



eFigure 3: Crude odds ratios for the effect of antiviral prophylaxis on risk of pH1N1 among household contacts assessed by virologic testing (v), clinical acute respiratory illness (c), or both (v+c). Odds ratios were estimated in studies with a zero cell by adding 0.5 as a standard correction.