Appendix S9: Risk of bias assessment: modelling studies

Study-	Rating	Main Assumptions	Limitations
Guputa (2011) [28]	10	Estimated of droplet size and concentration. All droplets same size. Passengers have closed mouths	Tolerance dose of passengers is unknown therefore although dispersion patterns modelled, risk of transmission is unknown. Only accounts for airborne transmission.
Guputa (2012) [5]	7	Conditions of aircraft and viability of virus. Quanta/hour investigated 103 & 5226	Model not validated or applied to real life cases
Merler (2012) [34]	5	Aircraft cabin conditions, peoples movements and speeds. R_0=2	Does not state where influenza data were obtained. Control for confounders not mentioned
Mazumdar (2001) [57]	10	Pulsed and continuous release of contaminants considered. Hypothetic situation specifying precise movements of a crew member. Walking speed assumed.	Study to explain whether transmission could have occurred in very specific circumstances. Not generalisable.
Wan (2009) [26]	12	Index patient ventilation rate 450L/hour. Virus decay negligible. Transfer of pathogens onto hands estimated	Little evidence quantifying frequency of hands touching surfaces and mucous membranes.
Zhu (2012) [46]	10	Virus decay negligible. No persons move in the bus. Doors do not open	Looks at relative risk of passengers seated in locations, does not detail the realistic risk of transmission. The situation investigated is not applicable to real life as does not account for persons' movements.
Coburn & Blower (2014) [53]	4	Quanta/hour released	The model used as its suitability was not explained and main assumptions not described
Furuya (2014) [47]	4	None stated	Does not investigate the suitability of the model
Wagner (2009) [27]	9	Assumes air contamination is uniform	Does not account for possible transmission by large droplets
Quan (2013) [36]	8	None stated	No description of data sources. Does not explore the effects of the outcomes on pathogen spread