Supplemental Information— Data Supporting the Modeling of the Disease Course of Influenza

Table S1. Seasonal Influenza Incubation Period Data Found in Literature

Source	Number Observed	Incubation Period (Hours)	Incubation Period (Days)
Alford et al. 1966[1]	-	36	2
	4	48	2
Burnet et al. 1940[2]	1	41	2
	1	51	3
Couch et al. 1971[3]	-	48	2
	-	72	3
MacDonald et al. 1918[4]	2	41	2
	2	48	2
Moser et al. 1979[5]	1	24	1
	15	36	2
	7	48	2
	13	60	3
	1	72	3
Armstrong et al. 1921[6]	42	24	1
	57	48	2
	37	72	3
	40	96	4
	17	120	5
	13	144	6
	3	168	7
Lessler et al. 2009[7]	37	24	1
	16	36	2
	53	48	2
	13	60	3
	7	72	3
	7	96	4

Table S2. Incubation Period of Pandemic Influenza

Source	Number Infected in Study	Mean Incubation Period (Days)	Median Incubation Period (Days)	Min Incubation Period (Days)	Max Incubation Period (Days)
Cao et al. 2009[8]	125	-	2	1	7

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[8] Cao B et al. (2009) Clinical features of the initial cases of 2009 pandemic influenza A (H1N1) virus infection in China. *New England Journal of Medicine.* 361 (26)**:** 2507-2517.

Source	Number Infected in Study	Mean Incubation Period (Days)	Median Incubation Period (Days)	Min Incubation Period (Days)	Max Incubation Period (Days)
Tuite et al. 2010[9]	316	4.3	5	1	7
Ghani et al. 2009[10]	16	2.05	-	1.9	-
Li et al. 2010[11]*	15	-	4	1	7
Wang et al. 2012[12]**	79	-	1.6	-	-
Weighted	**-**	**4.2**	**4.1**	**-**	**-**

**Excluded from the weighted median because the study only examined hemodialysis patients.*
***Excluded from the weighted median because these data were from a middle school, and thus over-represent children.*

Table S3. Percent of Individuals that Stop Shedding Virus Each Day after Symptom Onset

Source	Day(s) after Symptom Onset	Percent that Stop Shedding
Doyle et al. 1998[13]	1	0%
	2	0%
	3	17%
	4	10%
	5	15%
	6	27%
	7	26%
	8+	5%

Table S4. Asymptomatic Seasonal Influenza Infections

Source	Percent of Individuals who Shed Influenza Virus while Remaining Asymptomatic
Lau et al. 2010[14]	14%
Loeb et al. 2012[15]	10%
Suess et al. 2012[16]	14%
Mean	**13%**

[9] Tuite AR et al. (2010) Estimated epidemiologic parameters and morbidity associated with pandemic H1N1 influenza. *Canadian Medical Association Journal.* 182 (2)**:** 131-136.
[10] Ghani A et al. (2009) The Early Transmission Dynamics of H1N1pdm Influenza in the United Kingdom. *PLoS currents.* 1**:** RRN1130.
[11] Li H, Wang SX. (2010) Clinical features of 2009 pandemic influenza A (H1N1) virus infection in chronic hemodialysis patients. *Blood Purif.* 30 (3)**:** 172-177.
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[13] Doyle WJ et al. (1998) Effect of rimantadine treatment on clinical manifestations and otologic complications in adults experimentally infected with influenza A (H1N1) virus. *J Infect Dis.* 177 (5)**:** 1260-1265.
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[15] Loeb M *et al* (2012) Longitudinal study of influenza molecular viral shedding in Hutterite communities. *Journal of Infectious Diseases* 206**:** 1078-1084
[16] Suess T et al. (2012) Comparison of shedding characteristics of seasonal influenza virus (sub) types and influenza A (H1N1) pdm09; Germany, 2007–2011. *PloS one.* 7 (12)**:** e51653.

Table S5. Weighted Mean Percentage of Influenza-Associated Symptoms					
Symptom	**Prevalence in Individuals with Seasonal Influenza**			**Prevalence in Individuals with Pandemic Influenza**	
	≤17 Years (sources 17-23)	18-64 Years (sources 24-40)	≥65 Years (sources 41-43)	≤17 Years (sources 44-58)	≥ 18 Years (sources 59-73)
Abdominal Pain	N/A	N/A	N/A	11%	8%
Bronchospasm	N/A	N/A	N/A	4%	4%*
Chest Pain	N/A	N/A	N/A	8%*	8%
Chills	35%	55%	30%	27%	27%
Confusion	N/A	N/A	N/A	10%*	10%
Conjunctivitis	N/A	N/A	N/A	12%	15%
Cough	66%	81%	95%	85%	69%
Diarrhea	14%	5%	15%	10%	8%
Dyspnea	N/A	N/A	N/A	42%	39%
Fatigue or Malaise	87%*	87%	87%*	48%	49%
Fever	80%	72%	71%	93%	75%
Headache	38%	70%	54%	31%	36%
Loss of Appetite	N/A	N/A	N/A	21%	37%
Myalgia	23%	67%	33%	26%	27%
Nasal Congestion	89%*	89%	89%*	62%	21%
Nosebleed	N/A	N/A	N/A	17%	8%
Rhinorrhea	55%	78%	63%*	40%	41%
Sore Throat	46%	70%	14%	40%	40%
Vomiting	27%	15%	5%	18%	7%

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**Age specific data not available, weighted mean obtained from all age data points.*

Table S6. Estimated Annual Influenza-Associated Excess Mortality by Age[81]

Age Range	Percent Excess Mortality
0 – 4 years	0.00025%
5 – 49 years	0.00020%
50 – 64 years	0.00130%
65+ years	0.02210%

Table S7. Percentage of Pandemic Influenza Infected Individuals who Die, by Pandemic

Pandemic	Percent Mortality of Infected Persons
1918 Spanish Flu[82]	2.5% - 10%
2009 H1N1[83]	0.010% - 0.043%

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