Appendix

Cost-effectiveness of emergency preparedness measures in response to infectious respiratory disease outbreaks: a systematic review and econometric analysis: Supplementary Information

Appendix 1. Search concept construction

OVID MEDLINE

Date of Search	OVID Medline		
	#	Search Terms	Hits
29/7/2019	1	Economics/	27061
	2	"costs and cost analysis"/	47439
	3	Cost allocation/	1997
	4	Cost-benefit analysis/	77184
	5	Cost control/	21373
	6	Cost savings/	11287
	7	Cost of illness/	25397
	8	Cost sharing/	2443
	9	"deductibles and coinsurance"/	1716
	10	Medical savings accounts/	529
	11	Health care costs/	37249
	12	Direct service costs/	1171
	13	Drug costs/	15395
	14	Employer health costs/	1088
	15	Hospital costs/	10427
	16	Health expenditures/	18983
	17	Capital expenditures/	1987
	18	Value of life/	5653
	19	exp economics, hospital/	23708
	20	exp economics, medical/	14108
	21	Economics, nursing/	3989
	22	Economics, pharmaceutical/	2874
	23	exp "fees and charges"/	29802
	24	(low adj cost).mp.	51166
	25	(high adj cost).mp.	13286
	26	(health?care adj cost$).mp.	10352
	27	(fiscal or funding or financial or finance).tw.	136748
	28	(cost adj estimate$).mp.	2132
	29	(cost adj variable).mp.	42
	30	(unit adj cost$).mp.	2368
	31	(economic$ or pharmacoeconomic$ or price$ or pricing).tw.	277405
	32	Economic evaluation.mp.	9144
	33	(Cost?effectiveness analysis or CEA).mp.	21933
	34	(Cost?utility analysis or CUA).mp.	1153
	35	(Cost?benefit analysis or CBA).mp.	26471
	36	(Cost?consequence analysis or CCA).mp.	7687
	37	(Cost?minimi?sation analysis or CMA).mp.	3583
	38	(cost?outcome or marginal analysis).mp.	204
	39	exp Cost benefit analysis/ or exp budgets/	90077
	40	investment$.mp. or investments/	39609
	41	or/1-40	769608
	42	exp Emergency Preparedness/	2678
	43	exp Preparedness, Emergency/	2678
	44	(Community Preparedness or Community Recovery or Emergency Operations Coordination or (Emergency Public Information and Warning) or Fatality Management or Information Sharing or Mass Care or Medical Countermeasure Dispensing or (Medical Materiel Management and Distribution)	2614

		or Medical Surge or Non-Pharmaceutical Interventions or Public Health Laboratory Testing).mp.	
	45	exp Public Health Surveillance/	2623
	46	(Epidemiological Investigation or (Responder Safety adj Health) or Volunteer Management).mp.	2867
	47	(disaster preparedness or public health emergencies).mp.	2012
	48	((Detection adj assessment) or policy development or policy implementation or policy adaptation or health services or (coordination adj communication) or emergency risk communication or personal preparedness).mp.	393599
	49	((state or local or national or legal or business or healthcare) and preparedness).mp.	4359
	50	(vaccination or immuni?ation or anti?viral medication or personal hygiene or hand hygiene or household ventilation or ((food and safety) or storage) or food hygiene or respiratory etiquette or (washing and saniti?ing) or social distancing or triage or food security or (emergency adj3 food) or (school adj3 closure) or public gathering* or public meeting* or household isolation or quarantine or PPE or personal protective equipment or (environmental adj3 cleaning)).mp.	545475
	51	or/42-50	940853
	52	exp disease outbreak/ or exp communicable diseases/	119498
	53	(disease outbreak or outbreak or epidemic or pandemic or public health emergency).mp.	150101
	54	(avian flu or abola or EVD or H1N1 or H5N1 or infectious disease or influenza or swine flu or flu or MERS or Middle East Respiratory Syndrome).mp.	165207
	55	(SARS or Severe Acute Respiratory syndrome or measles or zika or cholera or H7N9 or dengue or fever or plague or fever or malaria or polio).mp.	381260
	56	(Bacillus cereus or Campylobacter jejuni or Clostridium or Cryptosporidium or Cyclospora cayetanensis or (E adj coli) or Hepatitis A or Listeria monocytogenes or Noroviruses or Salmonella or Shigella or Staphylococcus aureus or Staphylococcus or Vibrio parahaemolyticus or Vibrio vulnificus).mp.	493801
	57	(Diphtheria or Haemophilus influenzae type b or Hib or Hepatitis B or Human Papillomavirus or HPV).mp.	165778
	58	((Meningococcal adj Infection$) or Mump$ or Pertussis or Whooping Cough or Pneumococcal Infection$ or Polio or Rotavirus or Rubella or German Measles or Tetanus or varicella or chicken pox or vectorbourne diseases or vector?bourne disease$ or waterbourne diseases or water?bourne disease$ or Cholera or Diarrhea or diarrhoea).mp.	255768
	59	(Typhoid fever or Giardiasis or Schistosomiasis or Dracunculiasis or Dysentery or Cryptosporidiosis or amoebiasis or Traveler$s diarrhea or travelers diarrhoea).mp.	68954
	60	exp infectious disease medicine/ or exp malaria/ or exp influenza, human/ or SARS virus/ or exp norovirus/ or exp coronavirus infections/ or exp measles/ or exp poliomyelitis/ or exp chickenpox/	165698
	61	(anthrax or botulism or brucellosis or campylobacter enteritis or chikungunya or chlamydia$ or CJD or Creutzfeldt?Jakob).mp.	63613
	62	(diptheria or echinococcosis or gonococcal or haemophilus influenzae or hepatitis or HIV or AIDS or human immunodeficiency virus or acquired immunodeficiency syndrome).mp.	714394
	63	(legionnaires?disease or leptospirosis or listeriosis or lyme or streptococcus pneumoniae or Q fever or rabies or congenital rubella or salmonella or shiga toxin or verocytotoxin?producing E?coli or STEC or VTEC or HUS or haemoltic?uraemic or hemoltic?uremic).mp.	182938
	64	(shigellosis or smallpox or syphilis or congenital syphilis or tick?borne viral encephalitis or congenital toxoplasmosis or	341238

		trichinellosis or tuberculosis or TB or typhoid or paratyphoid or VHF or viral hemorrhagic fever$ or viral haemorrhagic fever$ or West Nile virus or Yellow fever or (enteritis adj3 yersinia)).mp.	
	65	or/52-64	2357602
	66	41 and 51 and 65 (studies before 2003 excluded)	18127

EMBASE

Date of Search	EMBASE		
	#	Search Terms	Hits
29/7/2019	1	Socioeconomics/	133589
	2	Cost benefit analysis/	81690
	3	Cost effectiveness analysis/	143890
	4	Cost of illness/	18428
	5	Cost control/	65812
	6	Economic aspect/	110246
	7	Financial management/	110636
	8	Health care cost/	181209
	9	Health care financing/	13089
	10	Health economics/	32080
	11	Hospital cost/	20343
	12	(fiscal or financial or finance or funding).tw.	178545
	13	Cost minimization analysis/	3375
	14	(cost adj estimate$).mp.	3181
	15	(cost adj variables$).mp.	188
	16	(unit adj cost$).mp.	4210
	17	investment$.mp. or investments/	49607
	18	or/1-17	906830
	19	"Emergency Preparedness".tw.	1780
	20	(Community Preparedness or Community Recovery or Emergency Operations Coordination or (Emergency Public Information and Warning) or Fatality Management or Information Sharing or Mass Care or Medical Countermeasure Dispensing or (Medical Materiel Management and Distribution) or Medical Surge or Non-Pharmaceutical Interventions or Public Health Laboratory Testing).mp.	3358
	21	exp Public Health Surveillance/	210835
	22	(Epidemiological Investigation or (Responder Safety adj Health) or Volunteer Management).mp.	3638
	23	(disaster preparedness or public health emergencies).mp.	2176
	24	((Detection adj assessment) or policy development or policy implementation or policy adaptation or health services or (coordination adj communication) or emergency risk communication or personal preparedness).mp.	124325
	25	((state or local or national or legal or business or healthcare) and preparedness).mp.	5302
	26	(vaccination or immuni?ation or anti?viral medication or personal hygiene or hand hygiene or household ventilation or ((food and safety) or storage) or food hygiene or respiratory etiquette or (washing and saniti?ing) or social distancing or triage or food security or (emergency adj3 food) or (school adj3 closure) or public gathering* or public meeting* or household isolation or quarantine or PPE or personal protective equipment or (environmental adj3 cleaning)).mp.	703894
	27	or/19-26	1031364

	28	exp disease outbreak/ or exp communicable diseases/	119087
	29	(disease outbreak or outbreak or epidemic or pandemic or public health emergency).mp.	207717
	30	(avian flu or abola or EVD or H1N1 or H5N1 or infectious disease or influenza or swine flu or flu or MERS or Middle East Respiratory Syndrome).mp.	198862
	31	(SARS or Severe Acute Respiratory syndrome or measles or zika or cholera or H7N9 or dengue or fever or plague or fever or malaria or polio).mp.	561066
	32	(Bacillus cereus or Campylobacter jejuni or Clostridium or Cryptosporidium or Cyclospora cayetanensis or (E adj coli) or Hepatitis A or Listeria monocytogenes or Noroviruses or Salmonella or Shigella or Staphylococcus aureus or Staphylococcus or Vibrio parahaemolyticus or Vibrio vulnificus).mp.	579612
	33	(Diphtheria or Haemophilus influenzae type b or Hib or Hepatitis B or Human Papillomavirus or HPV).mp.	241684
	34	((Meningococcal adj Infection$) or Mump$ or Pertussis or Whooping Cough or Pneumococcal Infection$ or Polio or Rotavirus or Rubella or German Measles or Tetanus or varicella or chicken pox or vectorbourne diseases or vector?bourne disease$ or waterbourne diseases or water?bourne disease$ or Cholera or Diarrhea or diarrhoea).mp.	421975
	35	(Typhoid fever or Giardiasis or Schistosomiasis or Dracunculiasis or Dysentery or Cryptosporidiosis or amoebiasis or Traveler$s diarrhea or travelers diarrhoea).mp.	56723
	36	exp infectious disease medicine/ or exp malaria/ or exp influenza, human/ or SARS virus/ or exp norovirus/ or exp coronavirus infections/ or exp measles/ or exp poliomyelitis/ or exp chickenpox/	213621
	37	(anthrax or botulism or brucellosis or campylobacter enteritis or chikungunya or chlamydia$ or CJD or Creutzfeldt?Jakob).mp.	78479
	38	(diptheria or echinococcosis or gonococcal or haemophilus influenzae or hepatitis or HIV or AIDS or human immunodeficiency virus or acquired immunodeficiency syndrome).mp.	938033
	39	(legionnaires?disease or leptospirosis or listeriosis or lyme or streptococcus pneumoniae or Q fever or rabies or congenital rubella or salmonella or shiga toxin or verocytotoxin?producing E?coli or STEC or VTEC or HUS or haemoltic?uraemic or hemoltic?uremic).mp.	206207
	40	(shigellosis or smallpox or syphilis or congenital syphilis or tick?borne viral encephalitis or congenital toxoplasmosis or trichinellosis or tuberculosis or TB or typhoid or paratyphoid or VHF or viral hemorrhagic fever$ or viral haemorrhagic fever$ or West Nile virus or Yellow fever or (enteritis adj3 yersinia)).mp.	313309
	41	or/28-40	2651637
	42	18 and 27 and 41 (studies before 2003 excluded)	14223

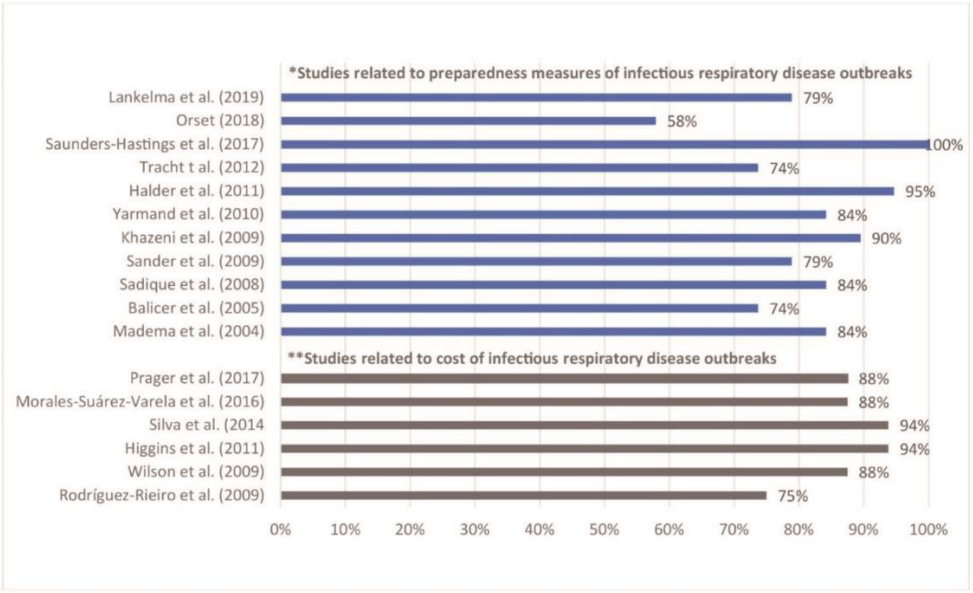
ECONLIT

Date of Search	EconLit		
	#	Search Terms	Hits
30/8/2019	1	cost OR (deductibles and coinsurance) OR Medical savings accounts OR health expenditure OR economic OR (fees and charges) OR Economic evaluation OR cost effectiveness analysis OR Cost utility analysis OR cost benefit analysis OR Cost consequence analysis OR Investment	1,344,466
30/8/2019	2	(Emergency Preparedness) OR Preparedness OR emergency OR Surveillance OR disaster OR (detection or diagnosis or identification or early detection) OR screening OR vaccination OR hygiene OR school closure OR quarantine	48,619
30/8/2019	3	disease outbreak OR disease OR infectious diseases OR communicable diseases OR outbreak OR pandemic OR epidemic	9,194
31/8/2019	4	S1 AND S2 AND S3 (limitation: from 2003 to 2019)	965

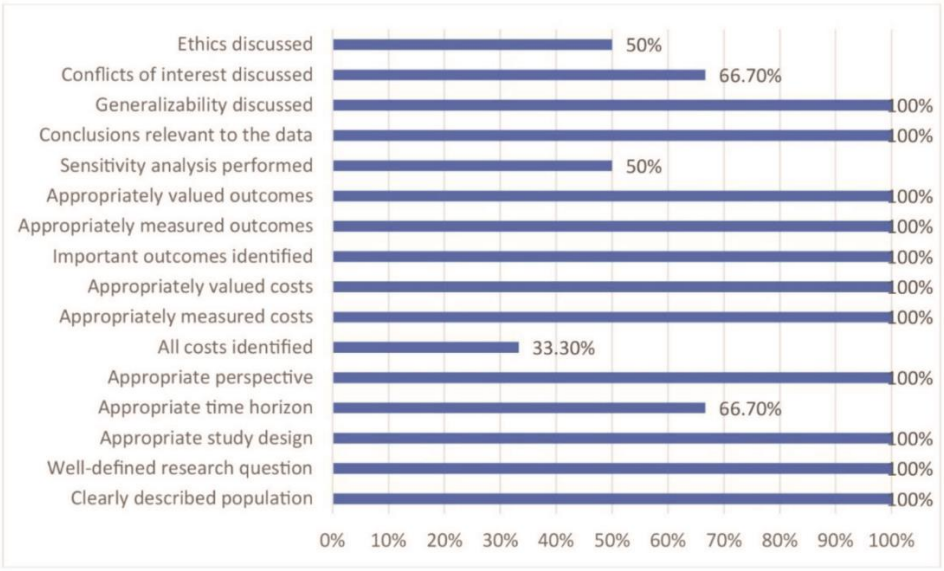
IDEAS REPEC

Date of Search	IDEAS REPEC			
	Search Term 1	Search Term 2	Search Term 3	Results (n)
28/7/2019	cost-effective	infectious		139
28/7/2020	Emergency Public Information and Warning	cost		8
28/7/2021	Health Surveillance	infectious	cost	10
30/7/2022	economics	health preparedness		39
30/7/2023	cost-effectiveness	cost effectiveness	health preparedness	8
30/7/2024	prevention	cost	disease outbreaks	42
30/7/2025	economic evaluation	Public health surveillance		12
30/7/2026	investment	Infectious disease	outbreak	16
30/7/2027	economics	H1N1		16
30/7/2028	economics	flu	outbreak	25
1/8/2019	Cost-effectiveness	ebola		4
1/8/2019	economics	disease threats		171
1/8/2019	pandemic	economic	cost	42

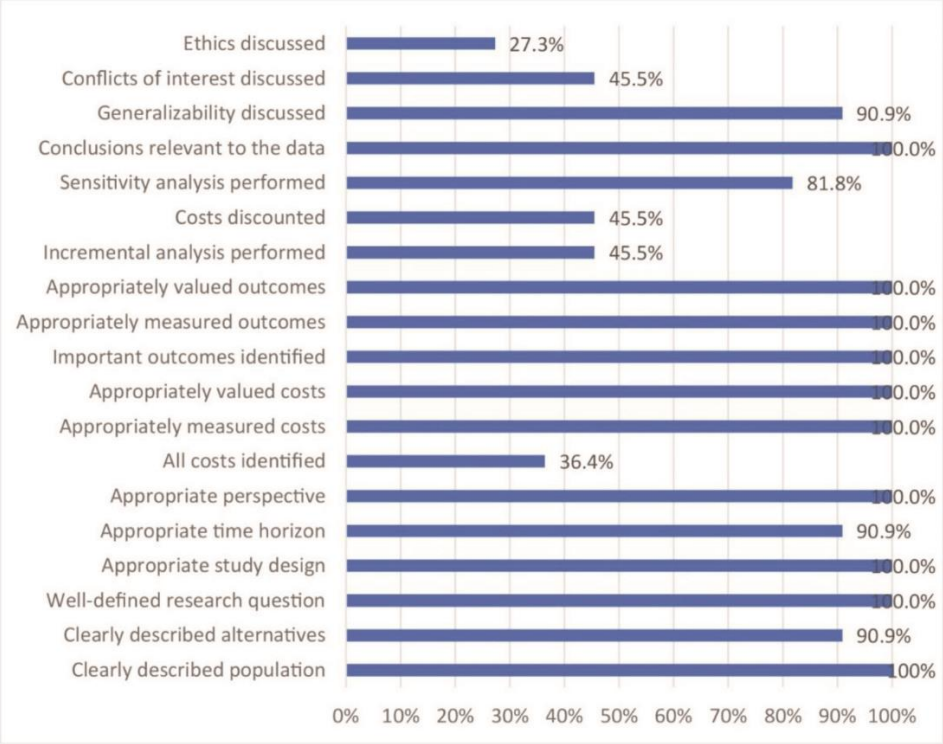
Appendix 2. Total quality appraisal score (in percentages) for all included studies (n=17)



Appendix 3. Quality appraisal score by item/question for the partial economic evaluation studies (n=6)



Appendix 4. Quality appraisal by item/question of the full evaluation studies (n=11)



Appendix 5. Characteristics of cost analyses studies of influenza outbreaks

Study, (Publication Year)	Setting, year	Study population (n)	Economic Evaluation	Approach	Perspective	Time Horizon	Type of Sensitivity analysis
Prager et al. (2017)	USA, n/a	The population of the USA	Cost of illness (although mentions about cost-effective of vaccination in the pandemic scenario, No CEA outcomes)	Simulation model	Healthcare system, Governmental, Societal	Not clearly stated	Performed, unclear
Morales-Suárez-Varela et al. (2016)	Spain, 2009-2010	Unvaccinated women of childbearing age with influenza A (H1N1)	Partial Economic Evaluation (Cost of illness)	Observational	Healthcare system, Societal	4 months	Not performed
Silva et al. (2014)	France, 2010-2011	Population with Influenza B (201)	Partial Economic Evaluation (cost of illness)	Observational	Payer, Societal	3 months	One-way sensitivity analysis and probabilistic analysis
Higgins et al. (2011)	Australia and New Zealand, 2009	All Influenza cases (H1N1) in New Zealand and Australia (762)	Partial Economic Evaluation Cost of illness	Observational	Healthcare system	3 months	Not performed
Wilson et al. (2009)	New Zealand, 2009	All Influenza hospitalisations in New Zealand) 1224 – 1122 hospitalizations and + 122 ICU	Partial Economic Evaluation, Cost of illness (incl. hypothetical cost-effectiveness analysis)	Observational	Healthcare system	12 months	Probabilistic sensitivity analysis
Rodríguez-Rieiro et al. (2009)	Spain, 2009	All Spanish patients with H1N1 (11,449)	Partial Economic Evaluation (Cost of illness)	Observational	Healthcare system	12 months	Not performed

Appendix 6. Characteristics of studies on preparedness and response measures of influenza outbreaks

Study, (Publication year)	Setting, Year	Population (n)	Economic Evaluation Approach	Perspective	Timeframe	Discount	Sensitivity analysis
Observational studies							
Lankelma et al. (2019)	Netherlands, 2017-2018	Patients with acute RTI at the emergency department (1546 tests, 624 cases)	Partial Economic Evaluation	Healthcare system	4,5 months	N/A	Not performed
Sadique et al. (2008)	UK, 2005	Working parents with depending children	Partial Economic Evaluation	Societal	1 year	N/A	Scenarios
Simulation or mathematical models							
Orset (2018)	France, 2014	200 participants, data extrapolated	Both cost-benefit and cost-effectiveness analysis	Public health and societal	1 year	1% for costs	Not performed
Saunders-Hastings et al. (2017)	Canada, n/a	A simulation of Ottawa, Canada (1.2 million)	cost-effectiveness analysis	Healthcare system	Lifetime	1.5%	Multivariate sensitivity analyses
Halder et al. (2011)	Australia. 2009	A community in Western Australia (30,000)	cost-effectiveness analysis	Healthcare and Societal	Lifetime	3%	Scenarios
Tracht et al. (2012)	USA, (2009-2010 influenza season)	Simulation of the US (302 million people:73 million children, 191 million adults, and 38 million seniors)	cost-effectiveness analysis	Healthcare system and societal	1 year	N/A	Multivariate sensitivity analyses
Yarmand et al. (2010)	USA, (2009-2010 influenza season)	North Carolina State University undergraduate students (23,087)	cost-effectiveness analysis	Healthcare system	5 months	N/A	One-way and two-way sensitivity analyses
Sander et al. (2009)	USA, n/a	Residents of a 1 632-million-person city	Cost Utility Analysis	Societal	6 months	3%	Multivariate sensitivity analyses
Khazeni et al. (2009)	USA, n/a	A U.S. metropolitan city (8.3 million)	cost-effectiveness analysis	Societal	Lifetime	3% for benefits/ costs	Monte Carlo probabilistic sensitivity analysis
Balicer et al. (2005)	Israel, n/a	Population of Israel (1 618 200 cases)	Cost-benefit analysis	Healthcare system Societal	Lifetime	Not specified	Multivariate sensitivity analyses
Medema et al. (2004)	UK, Germany, Netherlands, (2004)	Developed Countries (1 Billion people)	Cost-effectiveness analysis	Healthcare system	Not clearly stated	5%	Performed unclear

RTI: Acute respiratory tract infection, N/A: Not applicable, UK: United Kingdom, US: United States

Appendix 7. Comparative analysis of health indexes when averting/responding to respiratory disease outbreaks

Study / year	Intervention(s)/Screening methods vs. comparators	Outcomes/benefits
Prager et al. 2016	Case 1: No Vaccination, Seasonal Outbreak Case 2: No Vaccination, Pandemic Outbreak Vs. Case 3: Vaccination, Seasonal Outbreak Case 4: Vaccination, Pandemic Outbreak	**Productivity loss and behavioural response** **In the case of a pandemic influenza outbreak** Vaccination: 1. Reduces illness-related workday losses from 83.3 million days to 61.1 million days (a reduction of 22.2 million days). 2. Causes 7.4 million days of workday losses due to the time that people spend on getting the vaccination doses. 3. Can reduce public avoidance behaviours by 25%. **In the case of a seasonal influenza outbreak** Vaccination: 1. Reduces illness-related workday losses from 18.7 million days to 13.9 million days (a reduction of 4.8 million days). 2. Causes 6.7 million days of workday losses due to the time that people spend obtaining vaccinations. 3. Can reduce public avoidance behaviours by 25%.
Madema et al. 2004	1. Egg-based vaccine manufacture 2. Cell culture-based vaccine manufacture Vs. No intervention	**Cases, PCP consultations and hospitalizations prevented** **Cell culture-based intervention vs no intervention:** Cell culture-based intervention avoids 75 million influenza cases, 3.78 million PCP consultations for influenza treatment and, respectively, 5.81 million and 1.21 million influenza-related hospitalizations and excess deaths. **Egg-based vaccine intervention vs no intervention:** Egg-based vaccine intervention leads to vaccination of 17% of the population, which avoids 29.8 million influenza cases, 1.74 million PCP visits, 2.67 million hospitalizations and 556 000 deaths **Cell culture-based intervention vs egg-based vaccine intervention with 17% vaccine coverage:** Cell culture-based intervention strategy leads to vaccination of 37% of the population, avoiding an additional 35 million influenza cases, 2.04 million PCP consultations for influenza treatment, 3.14 million influenza-related hospitalizations and 654 500 excess deaths **Years of life lost (YLL)** Cell culture-based intervention strategy: 2.56 million

Saunders-Hastings et al. 2017	1. Vaccination and antiviral treatment 2. Vaccination, antiviral treatment and antiviral prophylaxis 3. Community-contact reduction, personal protective measures and voluntary isolation 4. Community-contact reduction, personal protective measures, voluntary isolation and antiviral treatment 5. School closure, community-contact reduction, personal protective measures, voluntary isolation and quarantine 6. All interventions Vs. 7. No intervention	**Hospitalizations** In case of no intervention, a total of 2 472 pandemic-associated hospitalizations have been estimated. Following no intervention, vaccination interventions (combined with other interventions) contributed to 765-815 hospitalizations. Last, school closure, combined with other interventions, contributed to 108-550 hospitalizations. **YLL** 1. 3,026 2. 2,801 3. 1,767 4. 1,607 5. 1,393 6. 267 7. 9,421 **Reductions of illness (H2N2 cases)** Vaccination, personal protective measures, combined voluntary isolation and quarantine procedures resulted in the greatest reductions, producing attack rates of 50.0%, 45.5% and 33.9%, respectively. Antiviral treatment, antiviral prophylaxis, school closure and community-contact reduction produced only small reductions in illness attack rate, whether implemented alone or in combination with other interventions. Even in the absence of any pharmaceutical intervention, adherence to rigorous non-pharmaceutical protocols -school closure, community-contact reduction, personal protective measures, voluntary isolation and quarantine-resulted in a reduction of the illness attack rate to 15.2%,
Khazeni et al. 2009	1) Vaccination and antiviral pharmacotherapy in quantities similar to those currently available in the U.S. stockpile (stockpiled strategy), 2) Stockpiled strategy but with the expanded distribution of antiviral agents (expanded prophylaxis strategy), and 3) Stockpiled strategy but with the adjuvanted vaccine (expanded vaccination strategy). Vs. no intervention	**Clinical attack rate** The clinical attack rate has been 11%, 17%, 19% and 33% for expanded adjuvanted vaccination, expanded antiviral prophylaxis, Stockpiled strategy and for no intervention, respectively. **Deaths averted** Expanded adjuvanted vaccination – 45 941 deaths averted Expanded antiviral prophylaxis – 32 745 deaths averted Stockpiled strategy – 29 761 deaths averted No intervention - No deaths averted
Sander et al.	1. HTAP25 with a stockpile for 25% of the population 2. HTAP50 with a stockpile for 50% of the population 3. HTAP with an unlimited stockpile	**QALYs gained, total** Expanded adjuvanted vaccination – 404 030 total QALYs gained Expanded antiviral prophylaxis – 282 329 total QALYs gained

2009	4. School closure for 26 weeks 5. Prevaccination 70% of the population with a low efficacy vaccine 6. HTAP25 + school closure: 7. HTAP50 + school closure: 8. HTAP + school closure: 9. Prevaccination + school closure: Prevaccinating 70% population with the low-efficacy vaccine, plus closing all schools for 26 weeks 10. Treatment only: Treating all cases with antivirals 11. FTAP25 for household contacts and 60% of work/school contacts, stockpile for 25% of the population 11. FTAP50 for household contacts and 60% of work/school contacts, stockpile for 50% of population 12. FTAP for household contacts and 60% of work/school contacts, stockpile unlimited 14. FTAP25 + school closure 13. 15. FTAP50 + school closure 14. 16. FTAP + school closure	Stockpiled strategy – 258 342 total QALYs gained No intervention - No QALYs gained **QALYs per 1000 population, total** All interventions gained a similar amount of QALYs, with some differences between them (21,141 for no intervention to 21 403 for prevaccination and school closure). Compared to FTAP not involving school closure, FTAP plus school closure or prevaccination plus school closure gains 51 QALYs **QALYs per 1000 population, incremental** FTAP and school closure and the intervention of prevaccination and school closure contributed to the most incremental QALYs (262) **Deaths per 1000 population** Pre-vaccination intervention was the most effective strategy. Only 1 death/1000 population occurred via this strategy. On the other side, most deaths have been seen in case of no intervention (13 deaths/1000 population) and FTAP25 with 12 deaths. **Number of cases** Full TAP is the most effective single strategy, reducing the number of cases by 54% Pre-vaccination reduces the number of cases by 48% Adding school closure to full TAP or pre-vaccination further improves health outcomes
Yarm and et al. 2010	Self-isolation and mandatory quarantine Vs. vaccination	**Effectiveness in low-levels of interventions** Vaccination is more effective than self-isolation. **Effectiveness in high-levels of interventions** Self-isolation is more effective than vaccination. This has been shown due to weaknesses of vaccinations, such as delays in effectiveness.
Halder et al. 2011	Antiviral drugs combined with limited duration school closure Vs. 1. School closure as a sole intervention alone and as dual, triple, quadruple strategy 2. Other social distancing strategies, such as reduced workplace attendance	**The illness attack rate of interventions (symptomatic)** The illness attack rate ranges from 2.4% (SD 0.37) to 8.5% (SD 1.1) while that of the unmitigated attack rate is 13% (SD 0.9). The individual school closure for 2 weeks along with the continuous – 50% workplace closure, antiviral treatment, household antiviral prophylaxis and extended antiviral prophylaxis showed the lowest illness attack rate (2.4%). This combination is the most effective intervention. Short-duration school closure is less effective (6.5 to 8.2 illness attack rate) Continuous school closure is more effective, with an attack rate of 3.2.

Orset 2018	Home confinement Vs. No intervention	**Incidence rate reduction by the home confinement intervention** There are studies that indicate the higher the compliance rate regarding home confinement, the higher the reduction of the incidence rate of influenza will be. More particularly: In case of a 70% compliance rate: 83% reduction of incidence rate In the case of 80% compliance rate: 91% reduction of incidence rate The compliance rate with home confinement is between 75.90 and 94.44%, for this study. **Rate reduction threshold in the incidence due to intervention** The higher the proportion of all cases complying with home confinement, the higher the reduction rate of the threshold for VSL will be. For example: In case of 49.24% of all cases complying with home confinement: €7.65 million Threshold for VSL In case of 51.39% of all cases complying with home confinement: €5.06 million Threshold for VSL
Tracht t al. 2012	Mask wearing group Vs. No intervention	**When there are no interventions (no masks worn)** **Cumulative number of cases/ based on three scenarios - R avg/unc*** In the case of 1.25; A total of 101,424,384 cases. Most of them identified at 18-64 age group. In the case of 1.3; A total of 117 673 024 cases. Most of them identified at 18-64 age group. In the case of 1.35; A total of 130 043 351 cases. Most of them identified at 18-64 age group. **Hospitalizations** Based on three different scenarios - R avg/unc: 1.25, 1.3, and 1.35 In the case of 1.25: For all age groups, a total of 3 275 616 hospitalizations have been estimated. 75.8% of them found to be in 18-64 ages In the case of 1.3: For all age groups, a total of 3 793 350 hospitalizations have been estimated. 74.8% of them found to be in 18-64 ages In the case of 1.35: For all age groups, a total of 4 184 352 hospitalizations have been estimated. 73.7% of them found to be in 18-64 ages **Deaths** More deaths have been found in ages 18-64, both in three scenarios, and more than 90% of the total deaths (281 319-349 578)

		As a result, the model showed that in case of 10% of the population wearing masks with an effectiveness of 20% in reducing susceptibility and infectivity, there is a large reduction in the cumulative number of cases.

PCP: Primary care physician, YLL: Yearls of life lost, VSL: Value of statistical life, QALY: Quality-adjusted life year, FTAP: Full-targeted antiviral prophylaxis, SD: Standard deviation,

* Average effective reproduction number (uncontrolled)