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**Table S1** Electronic search strategies

Databases [Platform] Searches run April 2020	Results
PubMed	1253
Cochrane Library	517
Embase	1781
WOS	2611
Other sources (ClinicalTrials.gov, gray literature, and reference lists of articles)	844
TOTAL	7006
Duplicate	1512

**Database:** PubMed <April 9th 2020> 1253

Search Strategy:

#	Searches	Results
#1	"Masks"[Mesh]	9270
#2	Search Terms: (mask OR facemask OR FFP2 OR respirators OR masks OR N95 OR respirator OR "personal protection equipment" OR "personal protective equipment" OR protective devices OR respiratory protective devices) Search Fields: Title/Abstract	43723
#3	#1 OR #2	46102
#4	Search Terms: ("particulate matter" OR respiratory OR ARI OR chickenpox OR CRI OR droplet OR particle OR pathogen OR epidemic OR flu OR H1N1 OR coronavirus OR haemophilus OR aerosol OR "health care acquired" OR "health care associated" OR "healthcare acquired" OR "healthcare associated" OR "chicken pox" OR "hospital acquired" OR adenovirus OR "hospital associated" OR communicable OR HiB OR ILI OR bioaerosol OR infect OR cross infect OR influenza OR airborne OR measles OR MERS OR metapneumovirus OR bacteri OR "Middle East respiratory syndrome" OR pandemic OR orthomyxoviridae OR parainfluenza OR particle OR paramyxoviridae OR pathogen OR "respiratory disease" OR pneumonia OR "respiratory illness" OR "respiratory hygiene" OR "respiratory tract" OR "respiratory infection" OR rhinovirus OR virus OR "respiratory virus" OR RSV OR SARS-CoV-2 OR COVID-19 OR SARS OR virion OR "severe acute respiratory syndrome" OR viral OR pertussis OR varicella OR "whooping cough") Search Fields: Title/Abstract	1859227
#5	"Respiratory Tract Infections"[Mesh]	353327
#6	#4 OR #5	2047316
#7	"Clinical Trials, Phase II as Topic"[Mesh] OR "Clinical Trials, Phase III as Topic"[Mesh] OR "Clinical Trials, Phase IV as Topic"[Mesh] OR "Controlled Clinical Trials as Topic"[Mesh] OR "Randomized Controlled Trials as Topic"[Mesh] OR "Intention to Treat Analysis"[Mesh] OR "Pragmatic Clinical Trials as Topic"[Mesh] OR "Clinical Trials, Phase II"[Publication Type] OR "Clinical Trials, Phase III"[Publication Type] OR "Clinical Trials, Phase IV"[Publication Type] OR "Controlled Clinical Trials"[Publication Type] OR "Randomized Controlled Trials"[Publication Type] OR "Pragmatic Clinical Trials as Topic"[Publication Type] OR "Single-Blind Method"[Mesh] OR "Double-Blind Method"[Mesh]	325776
#8	Search Terms: (random* OR singleblind* OR blind* OR doubleblind* OR tripleblind* OR trebleblind*) Search Fields: Title/Abstract	1255768
#9	#7 OR #8	1352738
#10	#3 AND #6 AND #9	1253

Database: Cochrane Library <April 9th 2020> 517

Search Strategy:

#	Searches	Results
#1	[Masks] explode all trees	1513
#2	(mask or facemask or FFP2 or respirators or masks or N95 or respirator or "personal protection equipment" or "personal protective equipment" or protective devices or respiratory protective devices):ti	4941
#3	#1 OR #2	5396
#4	[Respiratory Tract Infections] explode all trees ("particulate matter" or respiratory or ARI or chickenpox or CRI or droplet or particle or pathogen or epidemic or flu or H1N1 or coronavirus or haemophilus or aerosol or "health care acquired" or "health care associated" or "healthcare acquired" or "healthcare associated" or "chicken pox" or "hospital acquired" or adenovirus or "hospital associated" or communicable or HiB or ILI or bioaerosol or infect or cross infect or influenza or airborne or measles or MERS or metapneumovirus or bacteri or "Middle East respiratory syndrome" or pandemic or orthomyxoviridae or parainfluenza or particle or paramyxoviridae or pathogen or "respiratory disease" or pneumonia or "respiratory illness" or "respiratory hygiene" or "respiratory tract" or "respiratory infection" or rhinovirus or virus or "respiratory virus" or RSV or SARS-CoV-2 or COVID-19 or SARS or virion or "severe acute respiratory syndrome" or viral or pertussis or varicella or "whooping cough"):ti	14230
#5		63755
#6	#4 OR #5	71118
#7	#3 AND #6	517

Database: Embase <April 9th 2020> 1781

Search Strategy:

#	Searches	Results
#1	'mask'/exp	34117
#2	Search Terms: (mask OR facemask OR FFP2 OR respirators OR masks OR N95 OR respirator OR "personal protection equipment" OR "personal protective equipment" OR protective devices OR respiratory protective devices) Search Fields: Title/Abstract	55540
#3	#1 OR #2	75059
#4	'respiratory tract infection'/exp	453102
#5	Search Terms: ("particulate matter" OR respiratory OR ARI OR chickenpox OR CRI OR droplet OR particle OR pathogen OR epidemic OR flu OR H1N1 OR coronavirus OR haemophilus OR aerosol OR "health care acquired" OR "health care associated" OR "healthcare acquired" OR "healthcare associated" OR "chicken pox" OR "hospital acquired" OR adenovirus OR "hospital associated" OR communicable OR HiB OR ILI OR bioaerosol OR infect OR cross infect OR influenza OR airborne OR measles OR MERS OR metapneumovirus OR bacteri OR "Middle East respiratory syndrome" OR pandemic OR orthomyxoviridae OR parainfluenza OR particle OR paramyxoviridae OR pathogen OR "respiratory disease" OR pneumonia OR "respiratory illness" OR "respiratory hygiene" OR "respiratory tract" OR "respiratory infection" OR rhinovirus OR virus OR "respiratory virus" OR RSV OR SARS-CoV-2 OR COVID-19 OR SARS OR virion OR "severe acute respiratory syndrome" OR viral OR pertussis OR varicella OR "whooping cough") Search Fields: Title/Abstract	2283350
#6	#4 OR #5	2507169
#7	'phase 2 clinical trial (topic)'/exp OR 'multicenter study (topic)'/exp OR 'phase 3 clinical trial (topic)'/exp OR 'controlled clinical trial (topic)'/exp OR 'phase 4 clinical trial (topic)'/exp OR 'randomized controlled trial (topic)'/exp OR 'double blind procedure'/exp' OR single blind procedure'/exp	427430
#8	Search Terms: (random* OR singleblind* OR blind* OR doubleblind* OR tripleblind* OR trebleblind*) Search Fields: Title/Abstract	1707345
#9	#7 OR #8	1865091
#10	#3 AND #6 AND #9	1781

**Database:** WoS<April 9th 2020> 2611

Search Strategy:

#	Searches	Results
#1	TOPIC: (mask or facemask or FFP2 or respirators or masks or N95 or respirator or "personal protection equipment" or "personal protective equipment" or protective devices or respiratory protective devices)  TOPIC: ("particulate matter" or respiratory or ARI or chickenpox or CRI or droplet or particle or pathogen or epidemic or flu or H1N1 or coronavirus or haemophilus or aerosol or "health care acquired" or "health care associated" or "healthcare acquired" or "healthcare associated" or "chicken pox" or "hospital acquired" or adenovirus or "hospital associated" or communicable or HiB or ILI or bioaerosol or infect or cross infect or influenza or airborne or measles or MERS or metapneumovirus or bacteri or "Middle East respiratory syndrome" or pandemic or orthomyxoviridae or parainfluenza or particle or paramyxoviridae or pathogen or "respiratory disease" or pneumonia or "respiratory illness" or "respiratory hygiene" or "respiratory tract" or "respiratory infection" or rhinovirus or virus or "respiratory virus" or RSV or SARS-CoV-2 or COVID-19 or SARS or virion or "severe acute respiratory syndrome" or viral or pertussis or varicella or "whooping cough")	155777
#2	TOPIC: (randomized controlled trial OR Clinical trial OR Controlled Clinical trial OR random* OR singleblind* OR blind* OR doubleblind* OR tripleblind* OR trebleblind*)	3570063
#3	#3 AND #2 AND #1	2305918
#4		2611

**Database: WHO International Clinical Trials Registry Platform (ICTRP) Search Portal** <April 27th 2020> 86

Search terms: "mask"; applied filters: "With Results" and "Interventional"

**Database: Clinical trial registry** <April 27th 2020> 351

Search terms: "mask"; applied filters: "With Results" and "Interventional"

**Database: Gray literature** <April 27th 2020> 402

Search term: "mask": 402

**Table S2** Excluded studies: 34

Title	Author, year	Reason for Exclude
Results of the respiratory protection effectiveness clinical trial (respect)	Radonovich, L, 2018	Abstract
The First Randomized, Controlled Clinical Trial of Mask Use in Households to Prevent Respiratory Virus Transmission	MacIntyre, C. R, 2018	Abstract
A randomized intervention trial of mask use and hand hygiene to reduce seasonal influenza-like illness and influenza infections among young adults in a university setting	Aiello, A. E, 2010	Abstract
Influence of household contacts on the effectiveness of face masks for preventing influenza in a healthcare setting: a comment on Cowling <i>et al.</i>	Williams, C. J, 2010	Comment
Health care worker use of N95 respirators vs medical masks did not differ for workplace-acquired influenza	Glatt, A. E, 2020	Comment
A randomised controlled pilot study to compare filtration factor of a novel non-fit-tested high-efficiency particulate air (HEPA) filtering facemask with a fit-tested N95 mask	Au, S. S, 2010	Laboratory research
Efficacy of face masks and respirators in preventing upper respiratory tract bacterial colonization and co-infection in hospital healthcare workers - Comment on the article by MacIntyre et al	Soerokromo, N. S, 2014	Letters
Surgical masks vs N95 respirators for preventing influenza	Clynes, N, 2010	Letters
The efficacy and safety of laryngeal mask versus endotracheal tubes for laparoscopic surgery: A meta-analysis	Yasen, Y, 2017	Wrong intervention
Airway Complications during and after General Anesthesia: A Comparison, Systematic Review and Meta-Analysis of Using Flexible Laryngeal Mask Airways and Endotracheal Tubes	Xu, R, 2016	Wrong intervention
Effect of reduction in household air pollution on childhood pneumonia in Guatemala (RESPIRE): a randomised controlled trial	Smith, K. R, 2011	Wrong intervention
The use of gowns and masks to control respiratory illness in pediatric hospital personnel	Murphy, D, 1981	Wrong intervention: multiple interventions
Comparison of laryngeal mask airway Supreme and laryngeal mask airway Pro-Seal for controlled ventilation during general anaesthesia in adult patients: Systematic review with meta-analysis	Maitra, S, 2014	Wrong intervention
Optimal dose of succinylcholine for laryngeal mask airway insertion: systematic review, meta-analysis and metaregression of randomised control trials	Liao, A. H, 2017	Wrong intervention
The impact of laryngeal mask versus other airways on perioperative respiratory adverse events in children: A systematic review and meta-analysis of randomized controlled trials	Li, L, 2019	Wrong intervention
Effect of airway clearance techniques in patients experiencing an acute exacerbation of chronic obstructive pulmonary disease: A systematic review	Hill, K, 2010	Wrong intervention
The effect of sevoflurane versus desflurane on the incidence of upper respiratory morbidity in patients undergoing general anesthesia with a Laryngeal Mask Airway: A meta-analysis of randomized controlled trials	De Oliveira Jr, G. S, 2013	Wrong intervention
A systematic review and meta-analysis of the i-gel((R)) vs laryngeal mask airway in adults	de Montblanc, J, 2014	Wrong intervention
Laryngeal Mask Airway Versus Other Airway Devices for Anesthesia in Children With an Upper Respiratory Tract Infection: A Systematic Review and Meta-analysis of Respiratory Complications	de Carvalho, A. L. R, 2018	Wrong intervention
Non-invasive ventilation improves respiratory distress in children with acute viral bronchiolitis: A systematic review	Combret, Y, 2017	Wrong intervention
Comparison of the effectiveness of inhaler devices in asthma and chronic obstructive airways disease: a systematic review of the literature	Brocklebank, D. Ram, F, 2001	Wrong intervention
The advantages of the LMA over the tracheal tube or facemask: a meta-analysis	Brimacombe, J, 1995	Wrong intervention
Comparative efficacy and safety of the Ambu((R)) AuraOnce() laryngeal mask airway during general anaesthesia in adults: a systematic review and meta-analysis	Baidya, D. K, 2014	Wrong intervention
Household transmission of influenza A and B in a school-based study of non-pharmaceutical interventions	Azman, A. S, 2013	Wrong intervention
Protection by Face Masks against Influenza A(H1N1)pdm09 Virus on Trans-Pacific Passenger Aircraft, 2009	Zhang, L. J, 2013	Wrong research design
Respiratory consequences of N95-type Mask usage in pregnant healthcare workers-a controlled clinical study	Tong, P. S. Y, 2015	Wrong research design: CCT
Public perceptions of non-pharmaceutical interventions for reducing transmission of respiratory infection: systematic review and synthesis of qualitative studies	Teasdale, E, 2014	Wrong research design
Facemasks and intensified hand hygiene in a German household trial during the 2009/2010 influenza A(H1N1) pandemic: adherence and tolerability in children and adults	Suess, T, 2011	Wrong research design
Who should wear mask against airborne infections? Altering the contact network for controlling the spread of contagious diseases	Schimit, P. H. T, 2010	Wrong research design
The efficacy of medical masks and respirators against respiratory infection in healthcare workers	MacIntyre, C. R, 2017	Wrong research design
Prevalence of preventive behaviors and associated factors during early phase of the H1N1 influenza epidemic	Lau, J. T. F, 2010	Wrong research design
Impact of the flu mask regulation on health care personnel influenza vaccine acceptance rates	Edwards, F, 2016	Wrong research design
Aerosol transmission is an important mode of influenza A virus spread	Cowling, B. J, 2013	Wrong research design
Facemasks for the prevention of infection in healthcare and community settings	MacIntyre, C. R, 2015	Wrong research design

**Table S3** Summary of studies included by PICO framework

Study	Country	Objectiveness	Population and Setting	Experimental	Control	Result	Conclusion
Aiello AE,2010	USA	To examine the role of masks and hand hygiene in preventing ILI	1437 students living in university residence halls;1297 residents further analyzed	Hand sanitizer and medical masks and education; medical mask and education	Only education intervention	Compared with the control group, the incidence of ILI in the mask and hand hygiene group decreased significantly, but the incidence of ILI does not seem to be statistically different between the mask group, hand hygiene group, and control group	Hand hygiene and mask intervention may be effective in reducing the occurrence of respiratory diseases and reducing the adverse effects of the pandemic.
Aiello AE,2012	USA	To explore the effects of using masks and hand hygiene in the natural setting to prevent influenza	1178 students living in university residence halls; 1111 residents further analyzed	Hand sanitizer and medical masks and education; medical masks and education	Received the same education but no additional interventions	Compared with the control group, the incidence of influenza in the intervention group (mask group) did not significantly decrease	In the community environment, the combined use of masks and hand hygiene can reduce the occurrence of influenza
Atrie D,2012	Canada	To evaluate the effectiveness of N95 respirators compared to standard surgical masks in reducing influenza infection in health care workers	446 HCWs recruited from eight hospitals	N95 respirator	surgical mask	Compared with the surgical mask group, the laboratory-confirmed influenza cases in the N95 mask group did not decrease significantly	The protection provided by an N95 respirator is not superior to that provided by a standard surgical mask
Barasheed O,2014	Saudi Arabia	To determine the effectiveness of facemasks in preventing influenza	164 Australian pilgrims recruited from 2011 Hajj	Surgical mask	No facemasks provided	Compared with the control group, mask intervention has no significant effect in laboratory-confirmed influenza, but the incidence of ILI has dropped significantly	This was a pilot study with small sample, which has shown the feasibility of a future full-scale study
Canini L,2010	France	To evaluate the effectiveness of facemask use for preventing influenza in households	372 households recruited from general practitioner clinics; 105 households which included 306 household contacts further analyzed	Surgical mask	No facemasks provided	No significant difference in preventing transmission of influenza in households between control and mask-only group	Due to the lack of corresponding evidence, we cannot draw a definite conclusion
Cowling BJ,2008	China	To evaluate the feasibility and efficacy of face masks and hand hygiene to reduce influenza transmission among Hong Kong household members	944 participants recruited from outpatient clinics; 122 households with 350 household contacts further analyzed	Hand sanitizer and education; surgical face masks and education	Healthy diet and lifestyle education	No significant reduction in the secondary influenza attack rate in control, mask or hand group	The secondary attack ratios were lower than anticipated, and lower than reported in other countries, perhaps due to differing patterns of susceptibility
Cowling BJ,2009	China	To investigate whether hand hygiene and use of face-masks prevents household transmission of influenza	407 laboratory-confirmed influenza cases recruited from outpatient clinics; 259 households which included 794 household contacts further analyzed	Hand hygiene; surgical facemasks plus hand hygiene	Healthy diet and lifestyle education	No significant difference in rates of laboratory-confirmed influenza in control, hand-only or mask and hand group	Hand hygiene and facemasks seemed to prevent household transmission of influenza virus when implemented within 36 hours of index patient symptom onset
Jacobs JL,2009	Japan	To evaluate the effectiveness of face masks in reducing influenza infection in HCWs	32 HCWs recruited from a tertiary care hospital in Japan	Surgical mask	No facemasks provided	No difference in self-reported cold symptoms between control and face mask	For health care workers' cold incidence, the benefits of using masks have not been proven
Larson EL,2010	USA	To explore the effectiveness of hand sanitizer and masks in reducing the incidence of upper respiratory infections and influenza	617 households recruited; 509 households with 1842 household contacts further analyzed	Hand sanitizer and surgical mask and education; hand sanitizer and education	Education	No significant reduction in rates of laboratory-confirmed influenza in control, hand-only, mask or hand group	Wearing a mask seems to reduce the spread of influenza
Leung NHL,2020	China	To explore the importance of respiratory droplet and aerosol routes of transmission and determining the potential efficacy of surgical face masks to prevent respiratory virus transmission	246 exposed participants recruited from a general outpatient clinic of a private hospital in Hong Kong, China	Surgical face masks	No facemasks provided	Surgical face masks significantly reduced detection of influenza virus RNA in respiratory droplets and coronavirus RNA in aerosols, with a trend toward reduced detection of coronavirus RNA in respiratory droplets	Surgical face masks could prevent transmission of human coronaviruses and influenza viruses from symptomatic individuals
Loeb M,2009	Canada	To compare the surgical mask with the N95 respirator in protecting HCWs against influenza	446 HCWs recruited from emergency departments, medical units, and pediatric units of 8 tertiary care Ontario hospitals	Fit-tested N95 respirator	Surgical mask	No significant difference in preventing Influenza infection between surgical mask group and N95 respirator group	Among nurses in Ontario tertiary care hospitals, compared with N95 respirator, using surgical mask resulted in noninferior rates of laboratory-confirmed influenza
MacIntyre CR,2009	Australia	To compare the efficacy of surgical masks, non-fit-tested P2 masks, and no masks in prevention of ILI in households	286 exposed participants from 143 households recruited from a pediatric health service	Surgical mask; P2 mask	No facemasks provided	No significant difference in rate of laboratory confirmed influenza in control, face mask-only or P2 mask-only group	Face masks is ineffective for controlling seasonal respiratory disease. However, the use of masks may block the spread of the virus during severe epidemic
MacIntyre CR,2011	China	To study the effectiveness and differences of medical masks and N95 respirators for protecting medical staff in the hospital setting	1441 HCWs recruited from 15 Beijing hospitals	Fit-tested N95 respirator; non-Fit-tested N95 respirator	Medical masks	Compared with the N95 respirator group, the incidence of infection in the medical mask group was higher	N95 respirators seem to be more effective than medical masks
MacIntyre CR,2013	China	To study the effectiveness and differences of medical masks and N95 respirators for protecting medical staff in the hospital setting	1669 HCWs recruited from 19 Beijing hospitals	N95 respirators; targeted use of N95 respirators	Medical masks	Compared with the medical mask group, the incidence of CRI is lower in the N95 respirators	N95 respirators are more effective than medical masks for the prevention of CRI, especially continuous use of them
MacIntyre CR,2014	China	To study the effectiveness and differences of medical masks and N95 respirators for protecting medical staff in the hospital setting	1441 HCWs recruited from 15 Beijing hospitals	N95 respirator	Medical masks	N95 respirators were significantly protective against bacterial colonization.	N95 masks have a significant effect on preventing infections of healthcare workers
MacIntyre CR,2015	Vietnam	To study the effectiveness and differences of medical masks and cloth masks for protecting medical staff in the hospital setting	1607 HCWs recruited from 14 hospitals	Medical mask; cloth masks	Usual practice	Compared with the medical mask group, the infection rate in the cloth mask group was significantly higher	The cloth mask group has a higher infection rate and should be used with caution
MacIntyre CR,2016	China	To study the effectiveness of medical masks in preventing infections	245 ILI^ cases and 597 household contacts recruited from fever clinics	Medical mask	No facemasks provided	Clinical respiratory illness, ILI and laboratory-confirmed viral infections were lower in the mask-only group	Medical masks have a potential role in infection control
Radonovich LJJr,2019	USA	To study the effectiveness and differences of medical masks and N95 respirators for protecting medical staff in the hospital setting	2862 HCWs recruited from 7 medical centers, 2371 completed the study	Fit-tested N95 respirator	Medical masks	Compared with the medical mask group, the infection rate of the N95 respirator group did not change significantly	N95 respirators and medical masks are not significantly different in protecting outpatient medical staff from influenza
Simmerman JM,2011	Thailand	To examine the effectiveness of non-pharmaceutical interventions to reduce influenza transmission	1147 household contacts	Hand sanitizer; surgical face mask;	No facemasks provided	Compared with the control group, there was no significant difference in the incidence of influenza in the mask group	Hand hygiene and masks do not seem to reduce the spread of influenza
Suess T,2012	Germany	To investigate efficacy, acceptability, and tolerability of non-pharmaceutical interventions in households with influenza index patients	218 household contacts	Hand sanitizer and surgical face mask; surgical face mask	No facemasks provided	Compared with the control group, there was no significant difference in the incidence of influenza in the mask group	Some interventions, such as mask interventions, may reduce the spread of influenza in the family
Thomas F,2011	USA	To study the impact of wearing masks on radio reception	407 crew members	Surgical facemask or N95-Respirator	No facemasks provided	When the aircraft engine starts, the mask will affect the accurate transmission and reception of some flight terms	the mask maybe affect the accurate transmission and reception of some flight terms
Bartosko, J. J.,2020	Canada	To study the effectiveness and differences of medical masks and N95 respirators for protecting medical staff in the hospital setting	5927 HCWs from Canada, China, and USA	N95 respirators	Medical masks	Compared with the medical mask group, the infection rate of the N95 respirator group did not change significantly	N95 respirators are similar to medical masks in improving protection, however, the quality of evidence currently available is lower
bin-Reza, F,2012	Sweden	To seek evidence to stop the spread of the pandemic	4723 participants from Australia, USA, China, Canada, and Japan	N95 respirators; surgical masks	Surgical masks; no facemasks provided	Compared with the N95 respirator group, the incidence of respiratory disease in the medical mask group was higher	Long-term, continuous use of masks or hand hygiene may be effective for pandemic control
Jefferson T,2011	UK	To study the effect of physical intervention in blocking the respiratory virus transmission	5047 individuals from university, household, and hospital	Facemask Plus Hand Hygiene; surgical mask group; P2 mask; N95 respirators	No facemasks provided; Medical masks	Masks are useful for virus transmission	Masks are useful for virus transmission, and N95 respirators are better than medical masks
Long YL, 2020	China	To study the effectiveness and differences of medical masks and N95 respirators for protecting medical staff and households	286 exposed adults from 143 households recruited from a pediatric healthcare service in Australia and 7814 HCWs from hospitals in China, Canada, and the US	N95 respirators; P2 mask	Surgical masks; Lifestyle measures	Compared with the medical mask group, the infection rate of the N95 respirator group did not change significantly	N95 respirators are similar to medical masks in improving protection
Offeddu V, 2017	Singapore	To study the effectiveness and differences of medical masks and N95 respirators for protecting medical staff in the hospital setting	5195 HCWs in hospitals from China, Japan, Vietnam, and Canada	N95 respirators; medical masks	No facemasks provided; surgical masks	Compared with the N95 respirator group, the incidence of respiratory disease in the medical mask group was higher	Masks have a beneficial effect on the spread of respiratory viruses. N95 respirators are better than medical masks, but the currently available evidence is of low quality and quantity
Saunders-Hastings P, 2017	Canada	To examine the effectiveness of personal protective measures in preventing pandemic influenza transmission in human populations.	84 laboratory-confirmed influenza cases and 218 household contacts recruited by general practitioners or pediatricians in Germany	Hand sanitizer and face mask; face mask	No facemasks provided	Facemask use provided a non-significant protective effect against 2009 pandemic influenza infection	Regular hand hygiene and facemask may be effective at limiting transmission during future pandemics
Smith, J. D,2016	Canada	To study the effectiveness and differences of medical masks and N95 respirators for protecting medical staff in the hospital setting	3556 HCWs in hospitals from Canada and China	N95 respirators	Surgical masks	Compared with the medical mask group, the infection rate of the N95 respirator group did not change significantly	N95 respirators are similar to medical masks in improving protection
Wong, V. W. Y,2014	China	To study the effectiveness of non-pharmacological interventions such as masks and hand hygiene in blocking the spread of influenza in the community	5612 participants come from university, hospital, clinics, households in developed and developing countries	Hand sanitizer and education; surgical face masks and education; hand sanitizer and face mask and education	No facemasks provided; healthy diet and lifestyle education	Combined hand hygiene and facemask showed significant reduction in both laboratory confirmed influenza outcomes	Personal interventions such as masks and hand hygiene are important to stop the influenza virus
Xiao, J,2020	China	To study the effectiveness of personal non-pharmacological interventions such as masks and hand hygiene in blocking influenza viruses	7806 participants from Australia and other countries.	Facemask Plus Hand Hygiene; surgical mask group; P2 mask; N95 respirators	No facemasks provided; education	No significant reduction in influenza transmission with the use of face masks	Limited evidence on the effectiveness of improved hygiene and environmental cleaning

ILI, Influenza-like illness; HCWs, healthcare workers; CRI, clinical respiratory illness

**Table S4** Quality assessment results for SRs (AMSTAR-2)

Author	Items 1	Items 2	Items 3	Items 4	Items 5	Items 6	Items 7	Items 8	Items 9	Items 10	Items 11	Items 12	Items 13	Items 14	Items 15	Items 16	Total
Bartoszk 2020	1	1	3	1	1	1	3	1	1	1	1	1	1	3	3	3	Moderate quality
bin-Reza, 2012	1	1	1	1	1	1	3	1	3	3	4	4	3	3	4	1	Critically Low
Jefferson 2011	1	1	1	1	1	1	3	1	2	3	1	1	1	1	1	1	Moderate quality
Long, 2020	1	1	1	1	1	1	1	2	1	3	1	1	1	3	3	1	Moderate quality
Offeddu, 2017	1	1	1	1	1	1	3	1	2	3	1	1	1	3	1	1	Moderate quality
Saunders 2017	1	1	1	1	1	1	3	2	1	1	1	1	1	1	1	1	High quality
Smith 2016	1	1	1	1	1	1	3	2	1	3	1	1	1	3	3	3	Moderate quality
Wong 2014	1	1	1	1	1	1	3	3	1	1	1	1	3	3	3	3	Critically Low
Xiao 2020	1	2	1	1	1	1	3	1	3	3	1	1	1	1	3	3	Critically Low

SRs, systematic reviews; AMSTAR-2, Assessment of Multiple Systematic Reviews-2; 1, Yes; 2, Partial Yes; 3, No; 4, No meta-analysis conducted.