

Supplementary Material*

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* This supplementary material was provided by the authors to give readers further details on their article. The material was reviewed but not copyedited.

Supplement Table 1. Literature search strategies

KQ 1

RCTS

PubMed MEDLINE

((("Respiratory Protective Devices"[Mesh]) OR ("Masks"[Mesh])) OR (((("N95"[Title/Abstract] OR "N 95"[Title/Abstract] OR mask[Title/Abstract] OR masks[Title/Abstract]) OR ("N95"[Other Term] OR "N 95"[Other Term] OR mask[Other Term] OR masks[Other Term])) OR (facemask OR facemasks OR FFP)) OR (((airborne OR droplet* OR respirator OR respirators) AND (protect OR protection OR protective OR precaution)) NOT (mechanical[Title/Abstract]))) AND (prevent OR prevents OR prevention OR transmit OR transmission OR infect OR infection OR infected) Filters: Randomized Controlled Trial

Elsevier Embase

('respiratory protection'/exp OR 'air-purifying respirator'/exp OR 'face mask'/exp OR n95:ti,ab,kw OR mask:ti,ab,kw OR masks:ti,ab,kw OR facemask:ti,ab,kw OR facemasks:ti,ab,kw OR ffp:ti,ab,kw) AND (prevent OR prevents OR prevention OR transmit OR transmission OR infect OR infection OR infected) AND 'randomized controlled trial'/de AND [embase]/lim NOT ([embase]/lim AND [medline]/lim)

Observational studies

((("Respiratory Protective Devices"[Mesh]) OR ("Masks"[Mesh])) OR (((("N95"[Title/Abstract] OR "N 95"[Title/Abstract] OR mask[Title/Abstract] OR masks[Title/Abstract]) OR ("N95"[Other Term] OR "N 95"[Other Term] OR mask[Other Term] OR masks[Other Term])) OR (facemask OR facemasks OR FFP)) OR (((airborne OR droplet* OR respirator OR respirators) AND (protect OR protection OR protective OR precaution)) NOT (mechanical[Title/Abstract]))) AND (prevent OR prevents OR prevention OR transmit OR transmission OR infect OR infection OR infected) AND (((("COVID-19" [Supplementary Concept]) OR ("SARS Virus"[Mesh]) OR ("Severe Acute Respiratory Syndrome"[Mesh]) OR ("Middle East Respiratory Syndrome Coronavirus"[Mesh]) OR ((coronavirus[Title/Abstract] OR COVID[Title/Abstract] OR "severe acute respiratory syndrome*" [Title/Abstract] OR SARS[Title/Abstract] OR "middle eastern respiratory syndrome" [Title/Abstract] OR MERS[Title/Abstract]) OR (coronavirus[Other Term] OR COVID[Other Term] OR "severe acute respiratory syndrome*" [Other Term] OR SARS[Other Term] OR "middle eastern respiratory syndrome" [Other Term] OR MERS[Other Term])))

Elsevier Embase

('respiratory protection'/exp OR 'air-purifying respirator'/exp OR 'face mask'/exp OR n95:ti,ab,kw OR mask:ti,ab,kw OR masks:ti,ab,kw OR facemask:ti,ab,kw OR facemasks:ti,ab,kw OR ffp:ti,ab,kw) AND (prevent OR prevents OR prevention OR transmit OR transmission OR infect OR infection OR infected) AND ('severe acute respiratory syndrome' OR 'sars-related coronavirus' OR 'middle east respiratory syndrome' OR 'sars' OR 'mers' OR 'covid') AND ('case control study'/de OR 'cohort analysis'/de OR 'comparative study'/de OR 'controlled study'/de OR 'cross sectional study'/de OR 'crossover procedure'/de OR 'observational study'/de OR 'prospective study'/de OR 'retrospective study'/de) AND [embase]/lim NOT ([embase]/lim AND [medline]/lim)

KQ 2

PubMed MEDLINE

((("Respiratory Protective Devices"[Mesh]) OR ("Masks"[Mesh])) OR (((("N95"[Title/Abstract] OR "N 95"[Title/Abstract] OR mask[Title/Abstract] OR masks[Title/Abstract]) OR ("N95"[Other Term] OR "N 95"[Other Term] OR mask[Other Term] OR masks[Other Term])) OR (facemask OR facemasks OR FFP)) OR (((airborne OR droplet* OR respirator OR respirators) AND (protect OR protection OR protective OR precaution)) NOT (mechanical[Title/Abstract]))) AND (reuse OR "re use" OR "extended use" OR "multiuse" OR "multi use" OR "multiple use"))

Elsevier Embase

('respiratory protection'/exp OR 'air-purifying respirator'/exp OR 'face mask'/exp OR n95:ti,ab,kw OR mask:ti,ab,kw OR masks:ti,ab,kw OR facemask:ti,ab,kw OR facemasks:ti,ab,kw OR ffp:ti,ab,kw) AND (prevent OR prevents OR prevention OR transmit OR transmission OR infect OR infection OR infected) AND ('reuse' OR 're use' OR 'extended use' OR 'multiuse' OR 'multi use' OR 'multiple use') AND [embase]/lim NOT ([embase]/lim AND [medline]/lim)

Supplement Table 2. Inclusion criteria

	Include	Exclude
Population	Healthcare workers or community members at risk of contracting COVID-19 or other viral respiratory illnesses due to workplace or community-based exposure	Bacterial or other non-viral infection; non-respiratory infection
Intervention/exposure	N95 respirators or equivalent, surgical/medical masks, and cloth masks.	Powered air-purifying respirators (PAPR), reusable N95 elastomeric respirators, other types of personal protective equipment
Comparator	One type of mask versus another type of mask; mask use versus nonuse; mask single use versus re-use	Other personal protective equipment
Outcomes	Infection with SARS-CoV-2, SARS-CoV-1, or MERS-CoV Influenza-like illness, lab-confirmed viral infection, lab-confirmed influenza, and clinical respiratory illness Harms of mask usage	
Setting/context	Community or healthcare settings; mask use by healthcare workers (HCWs) or non-HCWs; all geographic areas; findings considered within social distancing and PPE/handwashing context	Masks for prevention of other epidemic viruses (e.g., Ebola) and bacterial infections (e.g., tuberculosis)
Study design	Randomized controlled trials, cohort studies, case-control studies	Systematic reviews (used to identify primary studies)

Supplement Table 3. Study characteristics of randomized controlled trials of mask use

Author, year Country	Inclusion criteria	Sample size	Interventions and other infection prevention and control measures	Duration of intervention	Age (mean, years)	Female (%)	Smoker	Other population characteristics
Community settings								
Aiello A et al, 2010 (19) USA	Students ≥18 years of age, living in the residence halls, willing to wear a face mask and use alcohol-based hand sanitizer	Residence house clusters: 7 Total participants: 1297	A: Surgical mask and hand sanitizer (n=367): Received basic hand hygiene education and materials on how to appropriately use hand sanitizer and face masks. Asked to wear masks as much as possible during intervention period. Given hand sanitizer and enough masks for daily use and resealable storage bags for masks when not in use. Hand sanitizer: 62% ethyl alcohol in a gel base. Mask: TECNOL procedure masks; Kimberly-Clark B: Surgical mask (n=378): Received basic hand hygiene and materials on proper mask use. Model: TECNOL procedure masks; Kimberly-Clark. C: No mask or hand sanitizer (n=552): Received basic hand hygiene education only. Other measures: Not reported, other than as part of interventions	6 weeks	A: 18.6 B: 18.7 C: 18.4	A: 49 B: 61 C: 82	Current A: 2 B: 2 C: 3	A vs. B vs. C Recent influenza vaccination: 14% vs. 14% vs. 15% Washes hands more than 5x per day for at least 20 seconds: 18% vs. 25% vs. 32% Owns hand sanitizer: 50% vs. 60% vs. 54%
Aiello A et al, 2012 (20) USA	Students ≥18 years, living in the residence houses, willing to wear a face mask and use alcohol-based hand sanitizer	Residence house clusters: 37 Total participants: 1,178	A: Surgical mask and hand sanitizer (n=349): Received basic hand hygiene education and materials on how to appropriately use hand sanitizer and face masks. Asked to wear masks as much as possible during intervention period. Given hand sanitizer and enough masks for daily use and resealable storage bags for masks when not in use. Hand sanitizer: 62% ethyl alcohol in a gel base. Mask: TECNOL procedure masks; Kimberly-Clark B: Surgical mask (n=392): Received basic hand hygiene and materials on proper mask use. Model: TECNOL	6 weeks	A: 19.0 B: 19.0 C: 18.9	A: 52 B: 58 C: 56	Current A: 2 B: 4 C: 2	A vs. B vs. C Flu vaccine ever: 45% vs. 49% vs. 50% Received recent flu vaccine: 16% vs. 16% vs. 18% Optimal hand washing: 27% vs. 24% vs. 26% Owns hand sanitizer: 56% vs. 50% vs. 51%

Author, year Country	Inclusion criteria	Sample size	Interventions and other infection prevention and control measures	Duration of intervention	Age (mean, years)	Female (%)	Smoker	Other population characteristics
			procedure masks; Kimberly-Clark. C: No mask or hand sanitizer (n=370): Received basic hand hygiene education only. Other measures: Not reported, other than as part of interventions					
Alfelali M et al, 2019 (21)	≥18 years in assigned tent on first day of Hajj	Tent clusters: 318 Total number of participants: 7,687	A: Surgical mask: Provided with surgical facemasks and materials on how to appropriately use the masks; time worn during day not specified (n=3,199). Model: 3M™ Standard Tie-On surgical mask, Cat No. 1816. B: No mask (n=3,139): Provided no mask or educational material, but could use own masks if they brought them. Other measures: Not reported	5 days	A: 36.9 B: 37.2	A: 51 B: 57	A: 10 B: 9	A vs. B Influenza vaccine uptake: 50% vs. 49% Use of facemask before recruitment: 28% vs. 25%
Barasheed O et al, 2014 (23) Saudi Arabia	Australian Hajj pilgrims ≥15 years of age years with symptoms of ILI and contacts in tent	Tent clusters: 22 Participants (total): 164 Index cases: 75 Contacts in tent: 89	A: Surgical mask (n=75): Masks provided to index cases and contacts. Given advice on mask use 3 times per day, received materials on mask use, when to change them, and proper disposal. Model: 3M Standard Tie-On Surgical Mask, Cat No. 1816. B: No mask (n=89): General information on hygiene. Other measures: Not reported	5 days	Median A: 48.0 B: 41.6	A: 50 B: 43	A: 16% B: 8%	Not reported
Canini L et al, 2010 (24) France	Households with 3 to 8 people, one member over the age of 5 positive for influenza A, temperature over 37.8 C, and a cough. Index patient did not receive treatment	Household clusters: 105 Index cases: 105 Household contacts: 306	A: Surgical mask (n=52 index cases, 148 household contacts): Index patient in household required to wear mask if another family member was in the same room. Changed mask every three hours or if damaged. Model: for ≥10 years, AEROKYNH, LCH medical products, Paris, France; for <10 years: Face Mask KC47127, Kimberly-Clark, Dallas, TX, USA. B: No mask (n=53 index cases, 158	7 days	Index cases A: 25 B: 28 Household contacts A: 29 B: 25	Index cases A: 50 B: 45.3 Household contacts A: 50.7 B: 50.0	Index cases A: 29 B: 4 Household contacts A: 16 B: 13	A vs. B Index cases Age <15 years: 37% vs. 30% Vaccinated: 0% vs. 4% Household contacts A vs. B Household contacts Age <15 years: 28% vs. 39%

Author, year Country	Inclusion criteria	Sample size	Interventions and other infection prevention and control measures	Duration of intervention	Age (mean, years)	Female (%)	Smoker	Other population characteristics
	for asthma, COPD, or hospitalization.		household contacts): No materials provided. Other measures: Index patient encouraged to sleep alone					Vaccinated: 9% vs. 4%
Cowling B et al, 2008 (29) China (Hong Kong)	Index cases (≥ 2 years) with ≥ 2 ILI symptoms, household with ≥ 2 other members, none reporting ILI symptoms in last 14 days	Household clusters: 128 Index cases: 128 Household contacts: 370	A: Surgical mask + lifestyle intervention (n=22 index cases, 65 contacts): Education on masks in illness prevention, cases and household contacts instructed to wear masks at home as often as possible (except when eating or sleeping), and if index patient outside home with household member. Lifestyle intervention as below. 50 masks provided for each adult (model: Kimberly-Clark Tecnol-The Lite One) and 75 pediatric masks for each child age 3-7 years of age. B: Hand hygiene + lifestyle intervention (n=32 index cases, 92 contacts): Education on proper handwashing; provided liquid soap, alcohol hand sanitizer, alcohol hand gel, and instructions for use. Lifestyle intervention as below. C: Lifestyle intervention (n=74 index cases, 213 contacts): Education on healthy lifestyle, illness prevention (contacts) and symptom alleviation (index).	9 days	Index cases, 2-15 y A: 41% B: 38% C: 45% Index cases, 16+ A: 59% B: 62% C: 55% Household contacts, ≤ 15 y A: 17% B: 15% C: 15% Household, 16+ A: 83% B: 85% C: 85%	Index cases A: 45 B: 62 C: 57 Household contacts A: 60 B: 60 C: 61	NR	A vs. B vs. C Index cases Symptom onset to randomization interval 0-24 hours: 64% vs. 69% vs. 65% Household contacts Received influenza vaccination in prior 12 months: 1% vs. 6% vs. 14%
Cowling B et al, 2009 (28) China (Hong Kong)	Index cases (no age restriction) with ≥ 2 respiratory illness criteria (fever, cough, headache, sore throat, or myalgia); symptom onset ≤ 48 hours; household with ≥ 2 other	Household clusters: 259 Index cases: 259 Household contacts: 794	A: Surgical mask (n=83 index cases, 258 contacts): Education on masks in illness prevention, cases and household contacts instructed to wear mask at home as often as possible (except when eating or sleeping) and when index case outside home with household contact. 50 masks provided for each adult (model: Kimberly-Clark - The Lite One) and 75 pediatric masks	7 days	Median (IQR) Index cases A: 10 (6-20) B: 11 (8-28) C: 9 (6-12) Household	Index cases A: 60 B: 52 C: 52 Household contacts A: 62 B: 60 C: 62	NR	A vs. B vs. C Index cases Symptom onset to randomization interval 12-24 hrs: 46% vs. 52% vs. 59% Randomization to intervention interval 0-12 hrs: 89% vs. 76% vs. 81%

Author, year Country	Inclusion criteria	Sample size	Interventions and other infection prevention and control measures	Duration of intervention	Age (mean, years)	Female (%)	Smoker	Other population characteristics
	members, none reporting acute respiratory illness in last 14 days		for each child age 3 to 7 years of age. B: Hand hygiene (n=85 index cases, 257 contacts): Education on proper handwashing; provided liquid soap, alcohol rub and instructions for use. C: Lifestyle education (n=91 index cases, 279 contacts): Education on healthy lifestyle, illness prevention (contacts) and symptom alleviation (index). Other measures: Not reported, other than as part of interventions		contacts A: 38 (27-48) B: 40 (28-49) C: 38 (26-45)			Received antiviral oseltamivir: 28% vs. 22% vs. 24% Household contacts Received influenza vaccination in prior 12 months: 17% vs. 12% vs. 11%
Larson E et al, 2010 (30) USA	Households with ≥3 people, with ≥1 of preschool or elementary school age; English or Spanish-speaking; have telephone; willing to have bimonthly home visits; not routine use of alcohol-based hand sanitizer	Households: 509 analyzed (617 randomized) Individuals: 2,788	A: Surgical mask + hand sanitizer (n=938 people / 166 households): Masks to be worn by caretaker in household (within 3 feet of ill person for 7 days, changing mask between interactions) and ill person (within 3 feet of households members if possible) when ILI occurred in any household member, plus hand sanitizer and education interventions. Model: Procedure Face Masks, Kimberly-Clark. B: Hand sanitizer (n=946 people / 169 households): Large and small hand sanitizer (Purell) containers, to be carried to work or school, plus education intervention C: Education (n=904 people / 174 households): written educational materials on influenza and upper respiratory infection prevention Other measures: Not reported, other than as part of interventions	19 months, with home visits every 2 months, plus f/u on days 1, 3, 6 for mask wearers upon symptom onset	0-5 y: 29.2% 6-17 y: 18.1% ≥18 y: 52.7%	A: 52.2 B: 49.9 C: 53.3	NR	A vs. B vs. C Hispanic: 96.4% vs. 94.2% vs. 98.1% (p<0.005) Education (adults), <HS: 39.8% vs. 44.7% vs. 54.6%, p<0.005 Pre-existing respiratory diseases: 8.3% vs. 9.9% vs. 10.6%
MacIntyre C et al, 2009 (37)	Households with ≥2 healthy adults aged ≥16 years with known exposure to	Family clusters: 143 Index children cases: 141	A: P2 mask (n=92 in 46 households): Masks for 2 adult household contacts to be worn at all times when in same room as index child, infection control	Follow-up 1 week	NR	NR	Smoker in household: A. 9% B. 26%	A vs. B vs. C Caucasian: 37% vs. 43% vs. 56% Index child fully

Author, year Country	Inclusion criteria	Sample size	Interventions and other infection prevention and control measures	Duration of intervention	Age (mean, years)	Female (%)	Smoker	Other population characteristics
Australia	child with fever and respiratory symptoms; index child not admitted to hospital	Adult contacts: 286 (290 randomized)	pamphlets, fitting instructions. Model: 3M flat-fold P2 9320. B: Surgical mask (n=94 in 47 households): Masks for 2 adult household contacts to be worn at all times when in same room as index child, infection control pamphlets, fitting instructions. Model: 3M 1820 C: Control (n=100 adults in 50 households): Infection control pamphlets Other measures: Instruction on the importance of hand hygiene prior to and after the removal of medical masks and respirators.				C. 24%; p=0.046	immunized: 85% vs. 96% vs. 90% Index child influenza vaccinated: 0% vs. 2% vs. 2% 1 adult influenza vaccinated: 0% vs. 4% vs. 4%
MacIntyre C et al, 2016 (41) China	Index cases ≥18 years and met ILI criteria (fever plus one respiratory symptom)	Household clusters: 245 Index cases: 245 Household contacts: 597 (2.4 per index case)	A: Surgical mask (n=123 index cases): Worn by index case at home whenever in same room as a household member or a visitor to the household; instructed to wash hands when donning and doffing the mask. Mask removal allowed for meals and while asleep. 3 masks provided per day for 7 days. Model: 3M 1817. B: No mask (n=122 index cases) Other measures: Not reported, other than as part of interventions	7 days	Index cases A: 40.2 B: 39.7 Household contacts A: 38.3 B: 36.4	Index cases A: 54.5 B: 63.1 Household contacts A: 50.7 B: 43.1	Index cases Current or ex-smoker A: 23.6 B: 21.3	Index cases (A vs. B) Pre-existing illness: 17% vs. 13% Influenza vaccination: 4.1% vs. 4.1% Hand washing (most/all times): 80% vs. 89% Average hours of home stay/day: 17 vs. 17 Household members (A vs. B) Influenza vaccination: 7.4% vs. 10.5%
Simmerman J et al 2011 (48) Thailand	Household member of child (age 1 month to 15 years) with positive influenza test. Households were required to have at least two other members age ≥1 month who planned	Household clusters: 442 Index cases: 442 Household contacts: 1,147	A. Paper (surgical) face mask + hand washing training (n=395 contacts in 145 households): Mask provision, education on the benefits of face mask wearing and instruction on the appropriate technique of wearing face masks by household contacts + hand wash training. Model: Med-Con (Thailand) 14IN-20AMB-30IN. B. Hand washing training (n=367	21 days	Index A. 11% age 0-1; 21% age 2-3; 17% age 4-5; 35% age 6-10; 16% age 11-15 B. 10%	Index case A. 42.7% B. 49.6% C. 42.0% Family member A. 59.1% B. 59.9% C. 58.3%	Not reported	Index case (A vs. B vs. C) Household size: 3: 29% vs. 39% vs. 35%; 4: 37% vs. 32% vs. 37%; 5: 12% vs. 16% vs. 15%; ≥6: 22% vs. 14% vs. 13% vs. 16% Sleeping

Author, year Country	Inclusion criteria	Sample size	Interventions and other infection prevention and control measures	Duration of intervention	Age (mean, years)	Female (%)	Smoker	Other population characteristics
	to sleep inside the house for at least 21 days		<p>contacts in 147 households): In-home intensive, interactive hand-washing education and hand-washing-kit</p> <p>C. Control (n=385 members in 150 households): Nutritional, physical activity and smoking cessation education.</p> <p>Other measures: Not reported, other than as part of interventions</p>		<p>age 0-1; 22% age 2-3; 16% age 4-5; 39% age 6-10; 13% age 11-15</p> <p>C. 21% age 0-1; 14% age 2-3; 13% age 4-5; 40% age 6-10; 12% age 11-15</p> <p>Family member</p> <p>A. 19% age 0-15; 20% age 16-30; 50% age 31-50; 11% age ≥51</p> <p>B. 16% age 0-15; 21% age 16-30; 50% age 31-50; 13% age ≥51</p> <p>C. 15% age 0-15; 23% age 16-30; 50% age 31-50; 12% age ≥51</p>			<p>arrangement: own room: 5% vs. 4% vs. 4%; shared room with other children: 5% vs. 2% vs. 4%; shared room with parent: 99% vs. 92% vs. 90%</p> <p>Family member (A vs. B vs. C)</p> <p>Relationship to index case: parent: 60% vs. 63% vs. 60%; sibling: 17% vs. 16% vs. 14%; grandparent: 11% vs. 11% vs. 16%</p>

Author, year Country	Inclusion criteria	Sample size	Interventions and other infection prevention and control measures	Duration of intervention	Age (mean, years)	Female (%)	Smoker	Other population characteristics
Suess T et al, 2012 (49) Germany	Household contacts of index patients presenting within 2 days of symptom onset with positive rapid test and subsequent PCR for influenza	Household clusters: 84 Index cases: 84 Household members: 218	<p>A. Surgical mask + hand sanitizer (n=82 in 30 households): Provision of alcohol-based hand rub to be used after any direct contact with index patient, contact with items used by the index patient, coughing or sneezing, before/during meals and when returning home; child- and adult-sized surgical facemasks to be worn at all times by index case and household contact when the index patient and/or any other household member with respiratory symptoms were together. Model: Kimberly-Clark Child's Face Mask (for children) and LCH Medical Products Aérobyn Masques (for adults).</p> <p>B. Surgical mask (n=69 in 26 households): Worn at all times by index case and household contact when the index patient and/or any other household member with respiratory symptoms were together. Model: Kimberly-Clark Child's Face Mask (for children) and LCH Medical Products Aérobyn Masques (for adults).</p> <p>C. Control (n=67 in 28 households): No hand rub or face masks</p> <p>Other measures: Mask groups were asked to wear masks at all times when the index patient and/or any other household member with respiratory symptoms were together in one room with healthy household members. Facemasks were to be changed regularly during the day and not to be worn during the night or outside the household.</p>	8 days	<p>2009-2010</p> <p>Index cases</p> <p>A. 7 B. 7 C. 8</p> <p>Household contacts</p> <p>A. 34 B. 37 C. 35</p> <p>2010-2011</p> <p>A. 7 B. 8 C. 8</p> <p>Household contacts</p> <p>A. 35 B. 35 C. 35</p>	<p>2009-2010</p> <p>Index cases</p> <p>A. 41% B. 55% C. 61%</p> <p>Household contacts</p> <p>A. 56% B. 51% C. 50%</p> <p>2010-2011</p> <p>Index cases</p> <p>A. 36% B. 33% C. 23%</p> <p>Household contacts</p> <p>A. 43% B. 50% C. 54%</p>	Not reported	<p>A vs. B vs. C</p> <p>2009-2010 enrollment</p> <p>Index cases</p> <p>Household size: 2.2 vs. 3.8 vs. 3.8</p> <p>Vaccination at least 14 days prior to symptom onset: 0% vs. 0% vs. 0%</p> <p>Household contacts</p> <p>Vaccination at least 14 days prior to index case symptom onset: 3% vs. 3% vs. 0%</p> <p>2010-2011 enrollment</p> <p>Index cases</p> <p>Household size: 3.7 vs. 3.5 vs. 3.9</p> <p>Vaccination at least 14 days prior to symptom onset: 0% vs. 13% vs. 12%</p> <p>Household contacts</p> <p>Vaccination at least 14 days prior to index case symptom onset: 4% vs. 18% vs. 13%</p>

Author, year Country	Inclusion criteria	Sample size	Interventions and other infection prevention and control measures	Duration of intervention	Age (mean, years)	Female (%)	Smoker	Other population characteristics
Healthcare settings								
Chughtai A, et al 2016 (27) Vietnam	HCWs from 14 hospitals in Hanoi	1,149	A: Medical mask (n=580 HCWs): Recommended to wear during entire work shift except while in the toilet or during tea or lunch breaks. Model: Not reported. B: Cloth mask (n=569 HCWs): Recommended to be worn during entire work shift except while in the toilet or during tea or lunch breaks. Model: Not reported. Other measures: Both groups were expected to follow hospital guidelines on hand washing. During aerosol-generating procedures and high risk situations, HCWs used other personal protective equipment recommended by the hospitals such as gloves, gowns and goggles.	4 weeks	40 years in text, 35.9 years in table	79%	Current smoker 13.7%	<i>Not reported by intervention group</i> Influenza vaccination in the last year: 4% Asthma: 2.63% Nurses: 70.3% Doctor: 29.7% Contact with febrile patient: 51% Participated in aerosol generating procedure: 67%
Loeb M et al, 2009 (34) Canada	HCWs (nurses) with current fit-test certification working full time (>37 hr/wk) in study units during 2008-2009 influenza season	422	A: N95 respirators (n=210 HCWs): Fit tested; wear when providing care or within 1 meter of patient with febrile respiratory illness. Model: Not specified (brand in use at hospital). B: Surgical mask (n=212 HCWs): Wear when providing care or within 1 meter of patient with febrile respiratory illness. Model: Not specified (brand in use at hospital). Other measures: Gloves and gown when entering room of a patient with febrile respiratory illness; assigned respiratory device for aerosol-generating procedures unless tuberculosis suspected	Mean 97 days	A: 35.8 B: 36.5	A: 94.1 B: 94.2	NR	A vs. B Influenza vaccination: 28.1% vs. 30.2% ≥1 co-existing condition: 11.8% vs. 9.8% Asthma: 5.4% vs. 4.4% Medical unit: 23.5% vs. 24.4% Pediatric unit: 28.1% vs. 26.2% Emergency unit: 48.4% vs. 49.8%
MacIntyre C et al, 2011 (39)	Full-time HCWs ≥18 years of age working in hospital	Hospital clusters: 15 HCWs: 1,441	A. N95 mask, fit tested (n=461 HCWs): Worn for all work shifts, stored in paper bag for toilet breaks, tea/lunch breaks, and at end of shift.	4 weeks	A: 35.5 B: 33.0 C: 32.7	A: 90% B: 92% C: 88%	Current smoker A: 2.8%	A vs. B vs. C Influenza vaccination in 2008 (year of study): 9.5% vs.

Author, year Country	Inclusion criteria	Sample size	Interventions and other infection prevention and control measures	Duration of intervention	Age (mean, years)	Female (%)	Smoker	Other population characteristics
China	emergency or respiratory wards		<p>Model: 3M flat-fold N95 respirator 9132, fit tested using 3M FT-30 Bitrex Fit Test kit.</p> <p>B. N95 mask, not fit tested (n=488 HCWs): Worn for all work shifts, stored in paper bag for toilet breaks, tea/lunch breaks, and at end of shift. Model: 3M flat-fold N95 respirator 9132.</p> <p>C. Surgical mask (n=492 HCWs): Worn for all work shifts, stored in paper bag for toilet breaks, tea/lunch breaks, and at end of shift. Model: 3M 1820.</p> <p>Other measures: Instruction on the importance of hand hygiene prior to and after the removal of medical masks and respirators.</p>				B: 3.5% C: 3.7%	<p>21.5% vs. 22.2%; p<0.01</p> <p>Influenza vaccination in 2007 (year prior to study): 14.8% vs. 21.5% vs. 22.2%; p<0.01</p> <p>Doctor: 36.0% vs. 29.5% vs. 31.1%; other HCW roles not reported</p> <p>Previous mask wearing:</p> <ul style="list-style-type: none"> -At work: 93.5% vs. 97.3% vs. 95.3% -At home: 1.3% vs. 0.8% vs. 0.6% -On public transportation: 4.1% vs. 2.3% vs. 1.4%; p=0.01 <p>Handwashing after touching a patient: 83.0% vs. 87.8% vs. 88.6%; p=0.01</p> <p>Participated in a high-risk procedure: 23% vs. 35% vs. 41%; p<0.01</p>
MacIntyre C et al, 2013 (40) China	Full-time doctor or nurse ≥18 years of age working in hospital emergency or respiratory wards	Hospital clusters: 19 HCWs: 1,669	<p>A. N95 mask (n=581 HCWs): Fit tested and worn at all times during shift, supplied with 2 masks daily. Model: 3M Health Care N95 Particulate Respirator 1860.</p> <p>B. N95 mask (n=516 HCWs): Fit tested and worn intermittently during high-risk procedures or barrier situations, supplied with 2 masks daily.</p>	4 weeks	A. 33.6 B. 31.3 C. 34.2	A. 85.7% B. 86.8% C. 83.9%	A. 4.1% B. 3.1% C. 4.0%	A vs. B vs. C Seasonal influenza vaccination in 2009-2010 (year of study): 14.6% vs. 9.9% vs. 15.4%; p=0.017 A(H1N1)pdm09 vaccination in 2009-2010: 29.4% vs.

Author, year Country	Inclusion criteria	Sample size	Interventions and other infection prevention and control measures	Duration of intervention	Age (mean, years)	Female (%)	Smoker	Other population characteristics
			Model: 3M Health Care N95 Particulate Respirator 1860. C. Surgical mask (n=572 HCWs): Worn at all times during shift, supplied with 3 masks daily. Model: 3M Standard Tie-On Surgical Mask 1817. Other measures: Not reported					25.2% vs. 19.1% Doctor: 36.8% vs. 31.4% vs. 41.1%; p=0.004 Handwashing after patient contact at all times: 77.1% vs. 60.7% vs. 72.9%; p=0.0001 Current smoker: 4.1% vs. 3.1% vs. 4.0% Undertook high-risk procedure: 72% vs. 77% vs. 72%; p=0.06
MacIntyre C et al, 2015 (38) Vietnam	HCWs ≥18 years in hospital wards	Hospital ward clusters: 74 HCWs: 1868	A: Surgical mask (n=580 HCWs): Worn at all times on work shift. Model: Locally manufactured, 3 layer, made of non-woven material. B: Cloth mask (n=569 HCWs): Worn at all times on work shift. Model: Locally manufactured, 2 layer, cotton. C: Standard practice (n=458 HCWs): 37% used surgical masks, 8% cloth masks, 53% both; 1% used N95 respirator or no mask. Other measures: HCWs in the cloth mask group asked to wash masks with soap and water every day	4 weeks	A: 36 B: 35 C: 36	A: 80.7 B: 76.6 C: 75.5	Current or ex-smoker A: 13.4 B: 13.9 C: 14.4	A vs. B vs. C Influenza vaccination: 3.6% vs. 3.7% vs. 3.3% Physician: 30.3% vs. 29.0% vs 29.3% Number of hand washings per day (mean): 14 vs. 11 vs. 12 Number of patient contacts/day: 21 (range 0 to 540) vs. 21 (range 0 to 661) vs. 18 (range 3 to 199)
Radonovich L et al, 2019 (46) USA	HCWs ≥18 years in outpatient settings with routine patient contact within 6 feet	Outpatient setting/season clusters: 380 HCWs: 2,862	A: N95 respirator (n=2512 HCW-seasons): Worn whenever within 6 feet of patient with suspected or confirmed respiratory illness, during 12 weeks predicted for highest incidence of viral respiratory illness and infections. Model: 3M 1860, 1860S, or 1870 and Kimberly Clark Technol Fluidshield PFR95-270, PFFR95-274. B: Surgical mask (n=2668 HCW-seasons): Mask worn as above.	12 weeks	A: 43 B: 43	A: 85.0 B: 84.3	A: 8.4 B: 8.8	A vs. B Nurse: 41.8% vs. 40.7% Clinical care support staff: 22.9% vs. 23.5% Administrative/clerical : 13.2% vs. 12.6% Other occupation: 8.5% vs. 8.4% Physician/advanced

Author, year Country	Inclusion criteria	Sample size	Interventions and other infection prevention and control measures	Duration of intervention	Age (mean, years)	Female (%)	Smoker	Other population characteristics
			<p>Model: Precept 15320 and Kimberly Clark Technol Fluidshield 47107.</p> <p>Other measures: Hand hygiene was recommended to all participants. Unspecified infection prevention policies were followed at each study site.</p>					<p>practitioner/physician trainee: 8.2% vs. 9.0%</p> <p>Social worker/pastoral care: 1.4% vs. 1.1%</p> <p>Environmental services/housekeeping: 0.3% vs. 0.7%</p> <p>Adult patient population: 56.1% vs. 55.7%</p> <p>Pediatric patient population: 22.8% vs. 20.9%</p> <p>Adult and pediatric: 21.1% vs. 23.4%</p> <p>Primary care: 69.0% vs. 70.5%</p> <p>Emergent/urgent care: 26.5% vs. 26.2%</p> <p>Emergency transport: 1.7% vs. 1.2%</p> <p>Specialty care: 1.6% vs. 1.1%</p> <p>dental/dialysis: 1.2% vs. 0.9%</p> <p>Asthma: 10.2% vs. 10.6%</p> <p>Other systemic disease: 4.1% vs. 4.4%</p> <p>Other respiratory disease: 2.0% vs. 1.4%</p> <p>Cardiac disease: 1.6% vs. 1.3%</p> <p>COPD: 0.2% vs. 0.2%</p> <p>Influenza vaccination: 79.3% vs. 76.8%</p>

Abbreviations: HCW=healthcare worker

Supplement Table 4. Study characteristics of observational studies of mask use

Author, year Country Study design	Inclusion criteria	Sample size	Age (mean, years)	Female (%)	Definition of infection	Proportion of HCWs with infections	Study limitations
Community settings							
Tuan P et al, 2007 (51) Vietnam Cohort	Household and close community contacts of laboratory-confirmed SARS-1 cases	212 (contacts of 45 cases)	Median age 33 years	52%	SARS-1	4.2% (9/212) ELISA-positive for SARS-CoV-1 (all PCR-negative); 2 cases were not clinically recognized as SARS-1	Potential recall bias
Lau J et al, 2004 (31) China (Hong Kong) Case-control	Cases: SARS cases reported to Department of Health with secondary infection of household member Controls: SARS cases with no secondary infection of household member	131 cases and 2,139 controls	Mean not reported; 47% age 18-30 years	53%	SARS-1	Not applicable	Potential recall bias
Wu J et al, 2004 (54) China Case-control	Cases: Probable or suspected SARS-1 according to the China Ministry of Health's definitions Controls: Age and sex-matched persons without SARS-1	94 cases and 281 controls	31	50%	SARS-1	Not applicable	Low participation rate; potential recall bias
Healthcare settings							
Alradaddi B et al, 2016 (22) Saudi Arabia Cohort	HCWs in 1 hospital with MERS outbreak	283	40 (cases)	64%	MERS-CoV seropositivity	7.0% (20/283)	Potential recall bias
Caputo K et al, 2006 (25) Canada	HCWs who performed tracheal intubations in SARS-1 patients	33	Not reported	Not reported	SARS-CoV-1 seropositivity	4.7% (9/193)	Potential recall bias; no control for confounding; few cases

Author, year Country Study design	Inclusion criteria	Sample size	Age (mean, years)	Female (%)	Definition of infection	Proportion of HCWs with infections	Study limitations
Cohort							
Heinzerling A et al, 2020 (56) United States Cohort	HCWs with potential exposure to hospitalized index patient	37	39	84%	COVID-19 diagnosis	5.4% (2/37)	Potential recall bias; no control for confounding; few cases and imprecise estimates; 6 tested HCWs were not interviewed and excluded from analysis
Loeb M et al, 2004 (35) Canada Cohort	Nurses in a critical care unit that cared for SARS patients	43	41	100%	SARS-1	18.6% (8/50)	Potential recall bias; no control for confounding
Nishiyama A et al, 2008 (43) Vietnam Cohort	HCWs in contact with SARS patients	85	Not reported	Not reported	SARS-CoV-1 seropositivity or SARS-1	Unclear; 29% of 146 HCWs potentially exposed diagnosed with SARS-1 and 40% seropositive for SARS-CoV-1, but analysis evaluated a subgroup of 85 HCWs	Potential recall bias; potential selection bias; estimate for sometimes vs. always use imprecise
Raboud J et al, 2010 (45) Canada Cohort	HCWs who provided care to intubated SARS-1 patients	624	38	75%	SARS-CoV-1 seropositivity	4.2% (26/624)	Potential recall bias; SARS-1 diagnosis did not require laboratory confirmation; collinearity in model not addressed
Scales D et al, 2003 (57) Canada Cohort	HCWs who entered room of patient with unrecognized SARS-1	31	Not reported	Not reported	SARS-1	19.4% (6/31)	Potential recall bias; no control for confounding; imprecise estimates

Author, year Country Study design	Inclusion criteria	Sample size	Age (mean, years)	Female (%)	Definition of infection	Proportion of HCWs with infections	Study limitations
Wang X et al, 2020 (52) China Cohort	HCWs in low- and high-risk hospital departments during COVID-19 outbreak	493	32	87%	COVID-19 diagnosis	2.0% (10/493)	Mask use based on department practice, not individual participant use; HCWs in departments with mask use also washed hands frequently (infrequent in other departments); estimate very imprecise
Wilder-Smith A et al, 2005 (53) Singapore Cohort	HCWs exposed in SARS prior to infection control implementation	98	28	91%	SARS-CoV-1 seropositivity	45.9% (45/98)	Potential recall bias, no control for confounding; analyses appear to exclude 2 patients with subclinical SARS-1
Chen W et al, 2009 (26) China Case-control	HCW cases with SARS- CoV-1 seropositivity	91 cases and 657 controls	Mean age not reported; 34.9% <26 years of age, 54.2% 26-40, 10.8% >50	76%	SARS-CoV-1 seropositivity	Not applicable	Potential recall bias; methods for selecting controls unclear; collinearity in model not addressed
Lau J et al, 2004 (32) China (Hong Kong) Case-control	HCW cases with SARS- CoV-1 seropositivity	72 cases and 143 controls	Not reported	Not reported	SARS-CoV-1 seropositivity	Not applicable	Potential recall bias; collinearity in model not addressed
Liu W et al, 2009 (33) China Case-control	HCW cases with SARS- CoV-1 seropositivity	51 cases and 426 controls	30	69%	SARS-CoV-1 seropositivity	Not applicable	Potential recall bias; controls not matched, other than meeting WHO criteria for close contact with SARS patient

Author, year Country Study design	Inclusion criteria	Sample size	Age (mean, years)	Female (%)	Definition of infection	Proportion of HCWs with infections	Study limitations
Ma H et al, 2004 (36) China Case-control	HCW cases with SARS-CoV-1 seropositivity	47 cases and 426 controls	29	70%	SARS-1	Not applicable	Potential recall bias; controls were exposed to SARS-1 patients but otherwise not matched; collinearity in model not addressed
Nishiura H et al, 2005 (42) Vietnam Case-control	HCW cases with SARS-CoV-1 seropositivity	29 cases and 98 controls	Mean age not reported; 57% 29 to 39 years of age; 33% 30 to 39 years of age; 43% 40 to 50 years of age	60%	SARS-1	Not applicable	Potential recall bias; no control for confounding; controls not matched; 42% of controls were non-HCW relatives of patients
Pei L et al, 2006 (44) China Case-control	HCW cases with SARS-CoV-1 seropositivity	147 cases and 296 controls	32	82%	SARS-1	Not applicable	Potential recall bias; controls were exposed to SARS-1 patients but otherwise not matched; collinearity in model not addressed
Seto W et al, 2003 (47) China (Hong Kong) Case--control	HCW cases with SARS-CoV-1 seropositivity	13 cases and 241 controls	Not reported	69%	SARS infection, defined as fever of 38C or higher, radiological infiltrates compatible with pneumonia, and two of: chills, new cough, malaise, and	Not applicable	Potential recall bias; controls not matched other than exposure to patients with SARS; laboratory confirmation of cases not reported

Author, year Country Study design	Inclusion criteria	Sample size	Age (mean, years)	Female (%)	Definition of infection	Proportion of HCWs with infections	Study limitations
					signs of consolidation.		
Teleman M et al, 2004 (50) Singapore Case-control	HCW cases with SARS infection	36 cases and 50 controls	Mean not reported; 64% age <30 years	89%	SARS-1	Not applicable	Potential recall bias; controls not matched other than exposure to patients with probable SARS; collinearity in model not addressed
Yin W et al, 2004 (55) China Case-control	HCW with SARS infection	77 cases and 180 controls	Mean not reported; • 54% age 18-29 years; 38% age 30-39 years	77%	SARS-1	Not applicable	Potential recall bias; controls were exposed to SARS-1 patients but otherwise not matched; collinearity in model not addressed

Supplement Table 5. Quality assessment of randomized controlled trials of mask use

Author, year	Randomization	Allocation concealment	Baseline groups comparable	Blinding of study participants	Blinding of outcomes assessment	Attrition and missing data reported	Intention-to-treat analysis	Analysis for adherence	Cluster trials: Adjustment for clustering	Quality rating
Aiello A et al, 2010 (19)	Yes	Yes	No	No	Unclear	Yes	Yes	Yes	Yes	Good
Aiello A et al, 2012 (20)	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Good
Alfelali M et al, 2019 (21)	Yes	Unclear	Yes	No	Yes	Yes	Yes	Yes	Yes	Good
Barasheed O et al, 2014 (23)	Yes	Unclear	No	No	No	Yes	Yes	Yes	No	Fair
Canini L et al, 2010 (24)	Yes	Yes	Yes	No	Partially	Yes	Yes	Yes	Yes	Good
Chughtai A et al, 2016 (27)	Yes	Unclear	Unclear	No	No	Yes	No	Yes	Yes	Fair
Cowling B et al, 2008 (29)	Yes	Yes	No	No	Yes for laboratory outcomes; no for clinical outcomes	Yes	Yes	Yes	Yes	
Cowling B et al, 2009 (28)	Yes	Yes	No	No	Yes for laboratory outcomes; no for clinical outcomes	Yes	Yes	Yes	Yes	Fair
Larson E et al, 2010 (30)	Yes	Unclear	No	Unclear	Unclear	Yes	Unclear	Yes	NA	Fair
Loeb M et al, 2009 (34)	Yes	No	Yes	No	Yes for laboratory outcomes; no for clinical outcomes	Yes	Yes	Yes	NA	Good
MacIntyre C et al, 2009 (37)	Yes	No	Yes	No	Yes for laboratory outcomes; no for clinical outcomes	Yes	Yes	Yes	Yes	Good

Supplement Table 6. Mask Use and Risk for Infection With SARS-CoV-2, SARS-CoV-1, or MERS-CoV in community settings

Author, Year (Reference)	Mask Use Versus Nonuse	Comparison of Mask Types	Consistency of Mask Use	Multiple Mask Layers Versus Single Layer
SARS-CoV-2				
No studies	-	-	-	-
SARS-CoV-1				
Lau J et al, 2004 (31)	<p>Unadjusted OR (95% CI) for secondary infection of household member, reference: no visit of index case</p> <ul style="list-style-type: none"> • Case and household member wearing mask: 1.87 (0.88-3.96) • Case or household member wearing mask: 1.78 (95% CI 0.80-3.96) • Neither case nor household member wearing mask: 4.16 (95% CI 2.37-7.30) <p>Adjusted OR (95% CI)</p> <ul style="list-style-type: none"> • Case and household member wearing mask: 1.77 (0.79-3.97) • Case or household member wearing mask: 1.62 (0.70-3.76) • Neither case nor household member wearing mask: 3.12 (1.65-5.91) 	-	-	-
Tuan P et al, 2007 (51)	<p>Unadjusted OR (95% CI) for secondary SARS-1</p> <p>Mask worn most/sometime vs. no mask worn during contact with index case: 0 (0-15.37) (note: 0 cases occurred in 9 contacts who wore mask compared with 7 of 154 contacts who didn't wear mask, calculated OR with continuity correction 1.04 [0.05-19.52])</p> <p>Mask use not included in multivariate model</p>	-	-	-
Wu J et al, 2004 (54)	-	-	<p>Unadjusted OR (95% CI) for SARS-1</p> <ul style="list-style-type: none"> • Sometimes wore a mask when going out vs. never work a mask: OR 0.5 (0.2-0.9) • Always wore a mask when going out vs. never work a mask: OR 0.3 (0.2-0.6) <p>Adjusted OR (95% CI) for SARS-1</p>	-

Author, Year (Reference)	Mask Use Versus Nonuse	Comparison of Mask Types	Consistency of Mask Use	Multiple Mask Layers Versus Single Layer
			<ul style="list-style-type: none"> • Sometimes wore a mask when going out vs. never work a mask: OR 0.4 (0.2-0.9) • Always wore a mask when going out vs. never work a mask: OR 0.3 (0.1-0.6) Not included in multivariate model: Handwashing	
MERS-CoV				
No studies	-	-	-	-

Abbreviations: OR = odds ratio

Supplement Table 7. Exposure settings, studies on mask use and prevention of coronavirus infections in healthcare workers

Study, year	Risk setting	Involvement with intubation or bronchoscopy	Direct or close contact	Use of personal protective equipment
SARS-CoV-2				
Heinzerling et al, 2020 (56)	High risk (hospital with unrecognized SARS-CoV-2 patient and inadequate PPE)	Intubation: 8.1% (3/37) Bronchoscopy: 8.1% (3/37)	Direct contact: 21.6% (8/37) Close contact (<6 feet): 89% (33/37)	Full PPE: 0% (0/37) Gloves: 64.8% (24/37) during non-AGP procedures; 67% (12/18) during AGP procedures
Wang et al, 2020 (52)	Varied (mix of high and moderate risk hospital units)	NR	NR	N95: 56.4% (278/493) Protective clothing: 42.1% (208/493)
SARS-CoV-1				
Caputo et al, 2006 (25)	High risk (HCWs who performed tracheal intubation on SARS-1 patients)	Intubation: 100% (36/36)	NR	At least gloves, goggles, mask, face shield: 100% (39/39)
Chen et al, 2009 (26)	Moderate risk ("frontline" HCWs caring for SARS-1 patients in hospital wards and departments)	Intubation: 4.4% (33/748)	NR	Gloves: 100% (748/748) Mask: 100% (748/748) Gown: 100% (748/748) Goggles "always" or "often": 9.6% (72/748)
Lau J. et al, 2004 (32)	Moderate risk (hospital wards with SARS-1 inpatients)	High risk procedures (including intubation, suctioning, CPR): Cases 16.7% (12/72), controls 13.5% (18/143)	Cases 62.5% (45/72), controls 73.4% (105/143)	All PPE used consistently with direct contact with SARS patients: Cases 62.5% (45/72), controls 90.2% (129/143)
Liu et al, 2009 (33)	Moderate risk (HCWs who had exposure to SARS-1 patients in hospital)	Intubation: 0.5% (12/477)	71.9% (341/474)	At least one layer of mask (12-16 cotton mask, N95, or disposable mask): 65.0% (308/477) Goggles: 46.3% (221/477) Gloves: 96.8% (364/376)

Study, year	Risk setting	Involvement with intubation or bronchoscopy	Direct or close contact	Use of personal protective equipment
Loeb et al, 2004 (35)	High risk (intensive care unit, HCWs often unaware of SARS-1 status of infected patients)	Intubation: 12.5% (4/32) Bronchoscopy: 6.2% (2/32)	Entered room: 100% (32/32)	Consistent gown: 62.5% (20/32) Consistent gloves: 68.8% (22/32) Consistent N95 or surgical mask: 71.9% (23/32)
Ma et al, 2004 (36)	Moderate risk (contacted or treated SARS-1 patients)	NR	NR	NR
Nishiura et al, 2005 (42)	Moderate risk (contact with SARS-1 cases)	NR	NR	All measures (handwashing before and after, masks, gloves, gowns): Cases 8.0% (2/25), controls 48.9% (44/90) Masks: Cases 32.0% (8/25), controls 38.9% (35/90) Gloves: Cases 32.0% (8/25), controls 33.3% (30/90) Gowns: Cases 8.0% (2/25), controls 27.8% (25/90)
Nishiyama et al, 2008 (43)	Moderate risk (hospitals with SARS-1 cases, HCWs with contact with SARS-1 cases)	NR	Direct contact: 85.9% (73/85)	Masks "always": 58.9% (50/85)
Pei et al, 2006 (44)	Moderate risk (hospitals with SARS-1 cases, unclear if all HCWs were in wards/departments of SARS-1 cases)	Intubation: Cases 23.3% (28/120), controls 3.2% (9/281)	Not keeping a certain distance: Cases 77.3% (99/128), controls 60.8% (169/278)	Mask (general cotton or double 12 layer cotton): Cases 64.7% (86/133), controls 86.1% (242/281) Gown: Cases 70.5% (91/129), controls 93.3% (263/282) Gloves: Cases 73.6% (95/129), controls 96.8% (270/279) Face screens or goggles: Cases 19.5% (24/123), controls 35.0% (96/274)

Study, year	Risk setting	Involvement with intubation or bronchoscopy	Direct or close contact	Use of personal protective equipment
Raboud et al, 2010 (45)	High risk (provided care to intubated SARS-1 patients during treatment or transportation; or entered room from 24 hours prior to intubation to 4 hours following intubation)	Involvement in intubation: 23.1% (144/624) Bronchoscopy: 3.3% (26/786) (HCW shifts)	NR	Always wore goggles in patient room: 74.4% (464/624) Always wore gloves in patient room: 92.6% (578/624) Always wore gown in patient room: 89.9% (561/624)
Scales et al, 2003 (57)	High risk (ICU with patient with initially unrecognized SARS-1)	Performed or assisted intubation: 16.1% (5/31)	Direct contact: 61.2% (19/31) Entered room: 100% (31/31)	Always gloves: 48.4% (15/31) Always mask (N95 or surgical): 41.9% (13/31) Always gloves, gown, and mask: 38.8% (12/31)
Seto et al, 2003 (47)	Moderate risk (within 0.91 m of SARS-1 case)	NR	Within 0.91 m: Cases 100% (13/13) and controls 100% (241/241)	Surgical mask or N95: Cases 0% (0/13) and controls 59.3% (143/241) Gloves: Cases 31% (4/13) and controls 48.5% (117/241) Gown: Cases 0% (0/13) and controls 34% (83/241) All measures (mask, gloves, gown, hand-washing): 0% (0/13) and 29% (69/241)
Teleman et al, (50)	Moderate risk (central referral hospital for SARS-1, HCWs on SARS-1 wards)	Performed/assisted in intubation: Cases 5.6% (2/36) and controls 8.0% (4/50)	Direct contact: Cases 80.6% (29/39) and controls 80.0% (40/50) <1 m: Cases 88.9% (32/36) and controls 90.0% (45/50)	N95: Cases 8.3% (3/36) and controls 46.0% (23/50) Gloves: Cases 27.8% (10/36) and controls 44.0% (22/50) Gown: Cases 13.9% (5/36) and controls 26.0% (13/50)
Wilder-Smith et al, 2005 (53)	High risk (hospitals with SARS-1 cases, initially no infection control measures in place)	NR	≤3 feet: 92.6% (88/95)	Mask: 28.1% (27/96) Gloves: 36.8% (35/95)

Study, year	Risk setting	Involvement with intubation or bronchoscopy	Direct or close contact	Use of personal protective equipment
Yin et al, 2004 (55)	Moderate risk (isolation units, direct care for SARS-1 patients)	NR	NR	12-layer mask: Cases 60% (46/77) and controls 87% (156/180) Disposable mask: Cases 29% (22/77) and controls 12% (22/180) Gown: Cases 35% (27/77) and controls 71% (128/180) Gloves: 48% (37/77) and controls 76% (136/180)
MERS-CoV				
Alradaddi et al, 2016 (22)	Moderate risk (MERS units, HCWs with contact with MERS cases)	Intubation: 8.5% (19/224) Bronchoscopy: 8.5% (19/224)	NR	Gloves always: 8.3% (18/218) Gown always: 8.3% (18/218) Eye protection always: 8.3% (18/218) Medical mask always: 8.5% (18/211) N95 respirator always: 8.3% (18/217)

Supplement Table 8. Mask Use and Risk for Infection With SARS-CoV-2, SARS-CoV-1, or MERS-CoV in HCWs

Author, Year (Reference)	Mask Use Versus Nonuse	Comparison of Mask Types	Consistency of Mask Use	Multiple Mask Layers Versus Single Layer
SARS-CoV-2				
Heinzerling A et al, 2020 (56)	--	--	Non-N95 facemask during aerosol generating procedures, always vs. sometimes or never: 0.77 (0.03-20.02) Non-N95 facemask during non-aerosol generating procedures, always vs. sometimes or never: 1.29 (0.05-30.38)	--
Wang X et al, 2020 (52)	In department with N95 mask use (yes vs. no): OR, 0.04 (95% CI, 0.002–0.61); adjusted OR, 0.002 (95% CI, 0–0.21) (note: reversed from no vs. yes as reported in study, for which the 95% CI, was 97.73–∞)	–	–	–
SARS-CoV-1				
Caputo K et al, 2006 (25)	–	N95 or N95 equivalent vs. surgical mask: OR, 0.12 (95% CI, 0.01–1.92)*	–	–
Chen W et al, 2009 (26)	–	–	–	Double-layer vs. single-layer cotton masks: OR, 0.40 (95% CI, 0.25–0.64)*
Lau J et al, 2004 (32)	–	–	Consistent N95 or surgical mask use vs. inconsistent use: <ul style="list-style-type: none"> All HCWs: Matched OR, 0.27 (95% CI, 0.08–0.95)* Direct contact with SARS-1 patient: Matched OR, 0.50 (95% CI, 0–20) (note: reversed from inconsistent vs. consistent as reported in study, 95% CI, 0.05–∞) Direct patient contact in general: Matched OR, 0.25 (95% CI, 0.004–4.76) 	–

Author, Year (Reference)	Mask Use Versus Nonuse	Comparison of Mask Types	Consistency of Mask Use	Multiple Mask Layers Versus Single Layer
			<ul style="list-style-type: none"> • No patient contact: Matched OR, 0.41 (0.06–2.44)* <p>Consistent N95 mask use vs. inconsistent†</p> <ul style="list-style-type: none"> • All HCWs: Matched OR, 0.48 (95% CI, 0.25–0.93)* • Direct contact with SARS-1 patient: Matched OR, 0.35 (95% CI, 0.07–1.43)* • Direct patient contact in general: Matched OR, 0.78 (95% CI, 0.10–6.25)* • No patient contact: Matched OR, 0.55 (95% CI, 0.21–1.39)* 	
Liu W et al, 2009 (33)	<ul style="list-style-type: none"> • 12-layer cotton surgical mask (yes vs. no): OR, 0.50 (95% CI, 0.23–1.10); adjusted 0.22 (95% CI, 0.08–0.62)* • 16-layer cotton surgical mask (yes vs. no): OR, 0.27 (95% CI, 0.14–0.51); adjusted OR, 0.17 (95% CI, 0.07–0.41)* • N95 mask (yes vs. no): 0.52 (95% CI, 0.12–2.24); adjusted OR, 0.52 (95% CI, 0.12–2.24) • Disposable mask (yes vs. no): OR, 1.12 (95% CI, 0.55–2.27) <p>Not in model: disposable mask, glasses, gloves, goggles</p>	<ul style="list-style-type: none"> • N95 vs. 12- or 16-layer cotton surgical mask: OR, 1.05 (95% CI, 0.24–4.66) • N95 vs. disposable mask: OR, 0.49 (95% CI, 0.10–2.35) • Disposable vs. 12- or 16-layer cotton surgical mask: OR, 2.13 (95% CI, 1.00–4.54) 	–	Multiple layers of masks (yes vs. no): adjusted OR, 0.41 (95% CI, 0.17–0.97)*

Author, Year (Reference)	Mask Use Versus Nonuse	Comparison of Mask Types	Consistency of Mask Use	Multiple Mask Layers Versus Single Layer
Loeb M et al, 2004 (35)	Surgical mask vs. no mask: RR, 0.45 (95% CI, 0.07–2.71)	N95 vs. surgical mask: RR, 0.50 (95% CI, 0.06–4.23)	<ul style="list-style-type: none"> Consistent N95 or surgical mask vs. inconsistent mask: RR, 0.23 (95% CI, 0.07–0.78) Consistent N95 vs. inconsistent mask: RR, 0.22 (95% CI, 0.05–0.93) 	–
Ma H et al, 2004 (36)	Mask use vs. no mask: OR, 0.24 (95% CI, 0.009–0.64)	<ul style="list-style-type: none"> Disposable vs. ≤12 layer: OR, 0.13 (95% CI, 0.05–0.34) >16 layer vs. ≤12 layer: OR, 0.06 (95% CI, 0.03–0.15) N95 and respirator vs. ≤12 layer: OR, 0.00 (95% CI, 0.00–0.33) ≤12 layer vs. others: adjusted OR, 76.68 (95% CI, 16.74–351.31) 	–	–
Nishiura H et al, 2005 (42)	<p>Surgical mask use vs. no mask:</p> <ul style="list-style-type: none"> Period 1 (26 February–4 March 2003): OR, 0.3 (95% CI, 0.1–0.7) Period 2 (5–10 March 2003): OR, 0.1 (95% CI, 0.0–0.3) 	–	–	–
Nishiyama A et al, 2008 (43)	Mask use, always vs. no: adjusted OR, 0.38 (95% CI, 0.01–0.50)	–	Sometimes vs. always: adjusted OR, 0.34 (95% CI, 0.09–1.37)*	–
Pei L et al, 2006 (44)	<p>General cotton mask vs. no mask: OR, 0.48 (95% CI, 0.25–0.95)</p> <p>Double 12-layer cotton mask vs. no mask: OR, 0.13 (95% CI, 0.05–0.30)</p>	–	–	–

Author, Year (Reference)	Mask Use Versus Nonuse	Comparison of Mask Types	Consistency of Mask Use	Multiple Mask Layers Versus Single Layer
Raboud J et al, 2010 (45)	<p>Surgical mask in patient room vs. no mask (reference): OR, 3.27 (95% CI, 0.72–14.79)</p> <p>N95 or equivalent: OR, 0.59 (95% CI, 0.17–2.08)</p> <p>Higher protection than N95: OR, 0.25 (95% CI, 0.01–4.98)</p>	N95 or N95 equal vs. surgical mask: OR, 0.18 (95% CI, 0.06–0.53)*	–	–
Scales D et al, 2003 (57)	Surgical or N95 vs. no mask: OR, 1.50 (95% CI, 0.25–8.98)	Gown, gloves and N95 vs. gown, gloves and surgical mask: OR, 0.40 (95% CI, 0.03–6.18)	--	--
Seto W et al, 2003 (47)	<p>Mask use vs. nonuse: Adjusted OR, 0.08 (95% CI, 0.02–0.33)</p> <ul style="list-style-type: none"> • Paper mask use vs. nonuse: OR, 0.50 (95% CI, 0.10–2.42) • Surgical mask use vs. nonuse: OR, 0.06 (95% CI, 0.004–1.06) • N95 mask use vs. nonuse: OR, 0.003 (95% CI, 0.002–0.59) 	<p>Number of cases by mask type:</p> <ul style="list-style-type: none"> • Paper mask: 7.1% (2/28) Surgical mask: 0% (0/51) N95: 0% (0/92) 	–	–
Teleman M et al, 2004 (50)	Wearing N95 mask vs. not wearing: OR, 0.1 (95% CI, 0.03–0.4); adjusted OR, 0.1 (95% CI, 0.02–0.9)	–	–	–
Wilder-Smith A et al, 2005 (53)	Mask use vs. no mask: OR, 0.25 (95% CI, 0.09–0.69)	–	–	–

Author, Year (Reference)	Mask Use Versus Nonuse	Comparison of Mask Types	Consistency of Mask Use	Multiple Mask Layers Versus Single Layer
Yin W et al, 2004 (55)	Mask vs. no mask: OR, 0.08 (95% CI, 0.01–0.43) <ul style="list-style-type: none"> Disposable mask vs. no mask: OR, 0.22 (95% CI, 0.02–1.29) ≥12-layer mask vs. no mask: OR, 0.07 (95% CI, 0.01–0.34); adjusted OR, 0.78 (95% CI, 0.60–0.99) 	Disposable mask vs. ≥12 layer mask: OR, 3.39 (95% CI, 1.72–6.67)	–	–
MERS-CoV				
Alradaddi B et al, 2016 (22)	–	–	Medical mask or N95 respirator, direct contact (use always vs. sometimes/never): RR, 0.69 (95% CI, 0.28–1.69) <ul style="list-style-type: none"> Medical mask: RR, 2.06 (95% CI, 0.86–4.95) N95: RR, 0.44 (95% CI, 0.17–1.12) Medical mask or N95 respirator, aerosol-generating procedure (use always vs. sometimes/never): RR, 0.32 (95% CI, 0.12–0.86) <ul style="list-style-type: none"> Medical mask: RR, 0.59 (95% CI, 0.20–1.71) N95: RR, 0.45 (95% CI, 0.16–1.29); adjusted RR, 0.44 (95% CI, 0.15–1.24) (medical mask almost always worn in sometimes or never group)	–

CoV=coronavirus; HCW=health care worker; OR=odds ratio; RR=relative risk; MERS=Middle East respiratory syndrome; SARS=severe acute respiratory syndrome.

*Comparison was reversed

Supplement Table 9. Adherence and harms in randomized controlled trials of mask use

Author, year Country	Interventions	Adherence	Harms
Community settings			
Aiello A et al, 2010 (19) USA	A: Surgical mask + hand sanitizer (n=367) B: Surgical mask (n=378): C: No mask or hand sanitizer (n=552)	A vs. B vs. C Mask wearing (mean, hours per day): 2.99 vs. 3.92 vs. NA Hand washing (mean, number of times per day): 6.11 vs. 8.18 vs. 8.75 Duration of hand washing (mean, seconds): 20.65 vs. 23.15 vs. 22.35 Alcohol-based hand sanitizer use (mean, number of times per day): 5.20 vs. 2.31 vs. 2.02	Not reported
Aiello A et al, 2012 (20) USA	A: Surgical mask + hand sanitizer (n=349) B: Surgical mask (n=392) C: No mask or hand sanitizer (n=370)	A vs. B vs. C Mask wearing (hours/day): 5.08 (SD 2.23) vs. 5.04 (SD 2.20) vs. NA Daily average hand sanitizer use (number of times): 4.49 (SD 4.10) vs. 1.29 (SD 1.77) vs. 1.51 (SD 2.25) A vs. C Daily average handwashing use (log transformed): 1.72 vs. 1.76 vs. 1.78	Not reported
Alfelali M et al, 2019 (21)	A: Surgical mask (n=3,199). B: No mask (n=3,139)	A vs. B Daily use of face mask: 25% (954/3,864) VS. 14% (545/3,823) Intermittent face mask use: 48% (1,842/3,864) vs. 35% (1,333/3,823) No use of face mask: 21% (808/3,864) vs. 44% (1,672/3,823) Handwashing: 84% vs. 82%	Overall (both intervention groups) Difficulty breathing: 26% Discomfort: 22% Feeling hot: 3%
Barasheed O et al, 2014 (23) Saudi Arabia	A: Surgical mask (n=75) B: No mask (n=89)	A vs. B Mask use ≥5 hours/day: 76% (56/75) vs. 12% (11/89)	Not reported
Canini L et al, 2010 (24) France	A: Surgical mask (n=52 index cases, 148 household contacts) B: No mask (n=53 index cases, 158)	Index cases Number of masks used daily: 2.5 (SD 1.3) Number of hours mask worn: 3.7 (SD 2.7) Total masks worn during intervention: 11 (SD 7.2) Total time masks worn, days: 4.0 (SD 1.6)	75% of the surgical mask group reported discomfort with mask use 3 children and 1 adult reported pain from wearing the mask

Author, year Country	Interventions	Adherence	Harms
	household contacts)		
Cowling B et al, 2008 (29) China (Hong Kong)	A: Surgical mask + lifestyle intervention (n=22 index cases, 65 contacts) B: Hand hygiene + lifestyle intervention (n=32 index cases, 92 contacts) C: Lifestyle intervention (n=74 index cases, 213 contacts)	A vs. B vs. C Index cases Reported mask worn often or always: 45% vs. 28% vs. 30% Reported good hand hygiene often or always: 63% vs. 63% vs. 31% Household contacts Reported mask worn often or always: 21% vs. 4% vs. 1% Reported good hand hygiene often or always: 47% vs. 41% vs. 27%	States no adverse events reported
Cowling B et al, 2009 (28) China (Hong Kong)	A: Surgical mask (n=83 index cases, 258 contacts) B: Hand hygiene (n=85 index cases, 257 contacts) C: Lifestyle education (n=91 index cases, 279 contacts)	A vs. B vs. C Index cases, reporting often or always Washing hands with liquid soap: 77% vs. 68% vs. 70% Using alcohol hand rub: 33% vs. 36% vs. 7% Wore surgical mask: 49% vs. 31% vs. 15% Practiced good hand hygiene: 61% vs. 62% vs. 44% Household contacts, reported often or always Washing hands with liquid soap: 78% vs. 71% vs. 77% Using alcohol hand rub: 24% vs. 28% vs. 6% Wore surgical mask: 26% vs. 5% vs. 7% Practiced good hand hygiene: 56% vs. 54% vs. 46%	Not reported
Larson E et al, 2010 (30) USA	A: Surgical mask + hand sanitizer (n=938 [166 households]) B: Hand sanitizer (n=946 [169 households]) C: Education (n=904 [174 households])	A vs. B vs. C Compliance with reporting of symptoms ($\geq 75\%$ of required time): 80.7% vs. 75.7% vs. 65.5%, $p=0.005$ Mask use within 48 hours of symptom, mask arm: 50% Hand sanitizer use (ounces/month): 11.6 vs. 12.1 vs. not reported	Not reported

Author, year Country	Interventions	Adherence	Harms
MacIntyre C et al, 2009 (37) Australia	A: P2 mask (n=92 [46 households]) B: Surgical mask (n=94 [47 households]) C: Control (n=100 [50 households])	A vs. B Wearing mask most or all of the time, Day 1: 46% vs. 38% Wearing mask most or all of the time, Day 5: 25% vs. 31%	A vs. B (mask arms) No reported problem: 46% vs. 49% Uncomfortable: 15% vs. 17% Forgot to wear: 9% vs. 9% Child did not like it: 9% vs. 6% Other (mask did not fit well, impractical to wear during meals or while sleeping): 22% vs. 19%
MacIntyre C et al, 2016 (41) China	A: Surgical mask (n=123) B: No mask (n=122)	Index cases Wore mask at least 1 hour/day A: 94.3% (116/123) B: 35.2% (43/122) Mask hours/day A: 4.4 B: 1.4 Household contacts: Not reported Contact with household members (hours/day) A: 10.4 B: 11.1	Not reported
Simmerman J et al 2011 (48) Thailand	A. Paper (surgical) face mask + hand washing training (n=395 [145 households]) B. Hand washing training (n=367 [147 households]) C. Control (n=385 [150 households])	A. Masks used: 12 per person/week; mean 211 [IQR 17 to 317] minutes/day (parents: mean 153 [40 to 411] minutes/day; other relations: 59 [IQR 9 to 266] minutes/day); Soap used: 58.1 ml per person/week; Hand washing episodes: 4.9 (95% CI 4.5 to 5.3) per day B. Soap used: 54 ml per person/week; Hand washing episodes: 4.7 (95% CI 4.3 to 5.0) per day C. Hand washing episodes: 3.9 (95% CI not reported)	Not reported
Suess T et al, 2012 (49) Germany	A. Surgical mask + hand sanitizer (n=82 [30 households]) B. Surgical mask (n=69 [26 households])	<i>2009-2010 enrollment, household contacts</i> "Mostly" or "always" wore face mask A. 45% (17/38) B. 55% (17/31) Wore face mask when in the same room as index case A. 68% (26/38) B. 74% (23/31) Wore face mask when in close contact with index case	Not reported

Author, year Country	Interventions	Adherence	Harms
	C. Control (n=67 [28 households])	A. 71% (27/38) B. 77% (24/31) <i>2010-2011 enrollment, household contacts</i> "Mostly" or "always" wore face mask A. 46% (13/28) B. 46% (18/39) Wore face mask when in the same room as index case A. 86% (24/28) B. 87% (32/37) Wore face mask when in close contact with index case A. 75% (21/28) B. 90% (34/38)	
Healthcare settings			
Chughtai A, et al 2016 (27) Vietnam	A. Medical mask (n=580) B. Cloth mask (n=569)	A vs. B Mask worn ≥70% of working time A: 56.6% B: 56.8% RR 1.00 (95% CI 0.91 to 1.11) Adjusted RR 1.02 (95% 0.97 to 1.08)	Overall (both intervention groups) Headache: 7.1% (80/1130) Skin rash: 2.7% (31/1130) Breathing problem: 18.3% (207/1130) Allergy: 1.8% (20/1130) General discomfort: 35.1% (397/1130) Other: 2.3% (26/1130)
Loeb M et al, 2009 (34) Canada	A: N95 respirators (n=210) B: Surgical mask (n=212)	A vs. B Wearing assigned mask during 2-week audit (n=18): 85.7% vs. 100% Reported spouse / roommate with ILI: 22.4% vs. 25.9% Reported child with ILI: 22.6% vs. 20.5%	States no adverse events reported

Author, year Country	Interventions	Adherence	Harms
MacIntyre C et al, 2011 (39) China	A. N95 mask, fit tested (n=461) B. N95 mask, not fit tested (n=488) C. Surgical mask (n=492)	Mask worn \geq 80% of working hours (95% CI) A: 74% (70% to 78%) B: 68% (64% to 73%) C: 76% (72% to 79%) Hours of mask wearing per day (95% CI) A: 5.2 (5.1 to 5.4) B: 4.9 (4.8 to 5.1) C: 5 (4.9 to 5.2) Participates in high-risk procedures: 23.4% vs. 35.0% vs. 40.9%; p<0.01	A vs. B vs. C Influenza vaccination in 2008 (year of study): 9.5% vs. 21.5% vs. 22.2%; p<0.01 Influenza vaccination in 2007 (year prior to study): 14.8% vs. 21.5% vs. 22.2%; p<0.01 Doctor: 36.0% vs. 29.5% vs. 31.1%; other HCW roles not reported Previous mask wearing: -At work: 93.5% vs. 97.3% vs. 95.3% -At home: 1.3% vs. 0.8% vs. 0.6% -On public transportation: 4.1% vs. 2.3% vs. 1.4%; p=0.01 Handwashing after touching a patient: 83.0% vs. 87.8% vs. 88.6%; p=0.01 Participated in a high-risk procedure: 23% vs. 35% vs. 41%; p<0.01
MacIntyre C et al, 2013 (40)	A. N95 mask (n=581) B. N95 mask (n=516) C. Surgical mask (n=572)	Mask worn \geq 70% of working hours A. 57% (333/581) B. 82% (422/516) C. 66% (380/572) A vs. C: p=0.002; B vs. C: p=0.00001 High-risk procedure: 71.8% vs. 77.1% vs. 71.5% Ill household contact during trial: 1.7% vs. 1.6% vs. 1.8%	A vs. B vs. C Seasonal influenza vaccination in 2009-2010 (year of study): 14.6% vs. 9.9% vs. 15.4%; p=0.017 A(H1N1)pdm09 vaccination in 2009-2010: 29.4% vs. 25.2% vs. 19.1% Doctor: 36.8% vs. 31.4% vs. 41.1%; p=0.004 Handwashing after patient contact at all times: 77.1% vs. 60.7% vs. 72.9%; p=0.0001 Current smoker: 4.1% vs. 3.1% vs. 4.0% Undertook high-risk procedure: 72% vs. 77% vs. 72%; p=0.06
MacIntyre C et al, 2015 (38)	A: Surgical mask (n=580) B: Cloth mask (n=569) C: Standard practice (n=458)	Mask worn >70% of working hours A: 56.6% B: 56.8% C: 23.6% Average number of patients in contact with (median) A: 21 B: 21 C: 18	A vs. B vs. C Influenza vaccination: 3.6% vs. 3.7% vs. 3.3% Physician: 30.3% vs. 29.0% vs. 29.3% Number of hand washings per day (mean): 14 vs. 11 vs. 12 Number of patient contacts/day: 21 (range 0 to 540) vs. 21 (range 0 to 661) vs. 18 (range 3 to 199)
Radonovich L et al, 2019	A: N95 respirator (n=2512 HCW)	A vs. B "Always" adherent: 65.2% vs. 65.1%	No serious adverse events

Author, year Country	Interventions	Adherence	Harms
(46) USA	seasons) B: Surgical mask (n=2668 HCW seasons)	"Sometimes" adherent: 24.2% vs. 25.1% "Never" adherent: 10.2% vs. 9.5% Daily workplace exposure: 22.5% vs. 21.6% Weekly household exposure: 3.6% vs. 3.4% Occupational risk high: 59.4% vs. 59.7% Occupational risk medium: 11.7% vs. 11.9% Occupational risk low: 28.8% vs. 28.3%	19 participants in the N95 arms reported skin irritation or worsening acne at one study site

Supplement Table 10. Summary of Evidence

Setting	Comparison	Outcome	Number and Type of Studies	Number of Subjects	Directness	Precision	Study Limitations	Consistency	Findings	Strength of Evidence
Community	Mask vs. no mask	SARS-1 infection	3 observational studies (1 cohort (51) and 2 case-control (31, 54))	Cohort: n=212 Case-control: n=225 cases, 2,420 controls	Direct	Precise	Moderate	Consistent	Mask associated with decreased risk	Low
Community	N95 equivalent vs. surgical mask	Influenzalike illness, laboratory-confirmed viral respiratory illness	1 RCT (37)	n=290	Direct	Imprecise	Low	Unable to assess	No difference	Low
Community	N95 equivalent vs. no mask	Influenzalike illness, laboratory-confirmed viral respiratory illness	1 RCT (37)	n=290	Direct	Imprecise	Low	Unable to assess	No difference	Low
Community	Surgical mask vs. no mask	Clinical respiratory illness, influenzalike illness, laboratory-confirmed viral respiratory illness, or laboratory-confirmed influenza	12 RCTs (19-21, 23, 24, 28-30, 37, 41, 48, 49)	n=16,761	Direct	Precise	Moderate	Inconsistent	No differences overall	Moderate
Healthcare	N95 vs. no mask	SARS-CoV-2 infection	1 observational study (52)	n=493	Direct	Imprecise	High	Unable to assess	Unable to determine	Insufficient
Healthcare	Consistent mask use vs. inconsistent use	SARS-CoV-2 infection	1 observational study (56)	n=37	Direct	Imprecise	Moderate	Unable to assess	Unable to determine	Insufficient
Healthcare	N95 vs. surgical mask	SARS-CoV-1 infection	5 observational studies (4 cohort (25, 35, 45, 57) and 1 case-control(33))	Cohort: n=731 Case-control: n=51 cases, 426 controls	Direct	Imprecise	Moderate	Consistent	N95 associated with decreased risk	Low

Setting	Comparison	Outcome	Number and Type of Studies	Number of Subjects	Directness	Precision	Study Limitations	Consistency	Findings	Strength of Evidence
Healthcare	N95 or surgical vs. cloth masks	SARS-CoV-1 infection	3 case-control (33, 36, 55)	n=175 cases, 1,032 controls	Direct	Imprecise	Moderate	Inconsistent	Unable to determine	Insufficient
Healthcare	N95 or surgical vs no mask	SARS-CoV-1 infection	1 cohort (57)	n=31	Direct	Imprecise	Moderate	Unable to assess	Unable to determine	Insufficient
Healthcare	N95 vs. no mask	SARS-CoV-1 infection	4 observational studies (1 cohort (45), 3 case-control (33, 47, 50))	Cohort: n=624 Case-control: n=100 cases, 717 controls	Direct	Imprecise	Moderate	Consistent	N95 associated with decreased risk	Low
Healthcare	Surgical vs. no mask	SARS-CoV-1 infection	6 observational studies (2 cohort (35, 45) 4 case-control (33, 42, 47, 55))	Cohort: n=667 Case-control: n=170 cases, 945 controls	Direct	Imprecise	Moderate	Inconsistent	Unable to determine	Insufficient
Healthcare	Cloth vs. no mask	SARS-CoV-1 infection	3 case-control studies (33, 44, 55)	n=275 cases, 902 controls	Indirect	Precise	Moderate	Consistent	Unable to determine	Insufficient
Healthcare	Mask (type not specified) vs. no mask	SARS-CoV-1 infection	5 observational studies (2 cohort (43, 53), 3 case-control) (36, 44, 55)	Cohort: n=183 Case-control: n=271 cases, 902 controls	Direct	Precise	Moderate	Consistent	Mask use associated with decreased risk	Low
Healthcare	Consistent mask use vs. inconsistent use	SARS-CoV-1 infection	4 observational studies (3 cohort (22, 35, 43), 1 case-control (32))	Cohort: n=411 Case-control: n=72 cases, 143 controls	Direct	Imprecise	Moderate	Consistent	Consistent mask use associated with decreased risk	Low

Setting	Comparison	Outcome	Number and Type of Studies	Number of Subjects	Directness	Precision	Study Limitations	Consistency	Findings	Strength of Evidence
Healthcare	N95 vs. surgical mask, higher risk settings	Clinical respiratory illness, influenzalike illness, laboratory-confirmed viral respiratory illness or laboratory-confirmed influenza	3 RCTs (34, 39, 40)	n=3,532	Direct	Imprecise (for influenzalike illness, laboratory-confirmed viral respiratory illness or laboratory-confirmed influenza)	Low	Inconsistent (for clinical respiratory illness)	No differences in risk for influenzalike illness, laboratory-confirmed viral respiratory illness or laboratory-confirmed influenza; inconsistent results for clinical respiratory illness	Moderate
Healthcare	N95 vs. surgical mask, lower risk settings	Clinical respiratory illness, influenzalike illness, laboratory-confirmed viral respiratory illness or laboratory-confirmed influenza	1 RCT (46)	n=2,862	Direct	Precise	Low	Unable to assess	No difference in risk	Moderate
Healthcare	Surgical vs. cloth mask, higher risk setting	Clinical respiratory illness, influenzalike illness, laboratory-confirmed viral respiratory illness	1 RCT (38)	n=1,868	Direct	Imprecise	Low	Unable to assess	Surgical mask associated with decreased risk	Low