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Evidence Snapshot

Update: The use of masks by asymptomatic people to reduce transmission of COVID-19

An Evidence Snapshot brokered by the Sax Institute for the Australian Commission on Safety and Quality in Health Care.
July 2020.

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This Evidence Snapshot was produced using the Evidence Snapshot methodology in response to specific questions from the commissioning agency.

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Introduction

This Evidence Snapshot was commissioned by the Australian Commission on Safety and Quality in Health Care and prepared by the Sax Institute. It combines the findings from an earlier version and now includes literature to 6 July 2020. Note that each review was completed within 3 days, so while a rigorous process for searching was followed it is possible that some peer reviewed or grey literature may have been missed.

As the COVID-19 pandemic in Australia is slowing, actions to manage the longer-term response and to prepare if the incidence should increase again are under consideration. The Commission is interested in the evidence on the efficacy of wearing masks for the general public to reduce the transmission of COVID-19. Current recommendations in Australia and New Zealand do not support the use of masks by the general public who are asymptomatic. Other jurisdictions apply a risk-based approach and prioritise the use of medical masks by healthcare workers (WHO, ECDC, US CDC); or when physical distancing is not possible (Canada, Scotland, Germany). The US CDC recommends that cloth masks be worn in the community.

This review does not consider the wearing of masks by staff in healthcare settings.

Review question

What is the evidence that wearing masks by the public (asymptomatic people) reduces the transmission of COVID-19?

Methods

We searched PubMed, Google Scholar and collections of COVID-19 related research (Oxford University Centre for Evidence Based Medicine, CDC, Cochrane, ScienceDirect, Lancet, BMJ) as well as an extensive grey literature search including jurisdictions and major international organisations from Australia, New Zealand, UK, US and Canada. We reviewed the title and abstracts of 1063 peer reviewed papers. The searches were undertaken on 2–3 May 2020 and updated on 7-8 July 2020, and peer-reviewed and grey literature was sourced by 11am on 8 July. The included studies were reviewed by a content expert. We report the peer reviewed literature in Table 1 and full results in Appendices 1–7.

Summary of findings

Findings

We identified 28 peer reviewed studies and 23 commentary articles and agency reports. Although the evidence overall is limited and of low certainty, **26 out of 28 peer reviewed studies indicated that wearing masks in community settings is likely to reduce transmission of COVID-19** (1-10). **This finding appears to apply at both early** (2, 5) **and later phases of the pandemic** (4, 9). **Where supply is limited, higher risk individuals or residential areas with high transmission rates should be prioritised** (11).

Key Messages

Peer reviewed literature

- We found some evidence that masks are effective in reducing transmission among asymptomatic people in community settings. However, there was a lack of high-level evidence, with small measures of effect found in some studies. This evidence was considered of low certainty due to heterogeneity and bias.
- Twenty-four studies tested mask use only and four studies tested masks in combination with other approaches, including handwashing and social distancing. Thirteen studies recommended using masks in combination with other measures.
- Studies did not specify whether masks were more effective at some stages of the pandemic, however, some noted that: use should be early as possible (2, 5, 6); when measures such as social isolation are relaxed (9); when large scale community transmission occurs or to prevent a second wave of infections (4).
- Two modelling studies indicated that using masks had a significant impact when adoption was nearly universal (80% of the population), when masks were adopted early (before day 50), and there was high compliance (> 50%) (2, 6).
- Some studies suggested that wearing masks on public transport and in workplaces where social distancing is less feasible may be useful at reducing transmission; the use of masks in recreational and mass gatherings was not found to be effective (1, 11).
- One study found that wearing masks increased the likelihood that individuals would maintain social distancing or increase the distance between people. No other evidence was found that mask wearing reduces adherence to measures such as hand washing and social distancing; but public health campaigns could further emphasise the importance of these protections used together.
- The general public appears to be amenable to masks use if it is coupled with the prospect of loosening of other restrictions, for example enabling a return to work.
- Where there are insufficient numbers of masks available or universal use is not implemented, high risk groups should be targeted, including the elderly, people living in high risk regions (12),

people who are immunocompromised (9), people living in residential areas with high transmission rates, and those who are particularly vulnerable (11).

Jurisdiction and country responses

- Current recommendations in Australia do not support the use of masks by the general public who are asymptomatic. https://www.health.gov.au/resources/publications/coronavirus-covid-19-use-of-masks-by-the-public-in-the-community
- New Zealand does not require healthy people to wear masks in public however it **now states** that members of the public may choose to do so. https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-health-advice-general-public/covid-19-use-face-masks-community
- In June 2020 WHO **changed its position** on masks worn by the general public recommending that at-risk people (people 60 years and over or who have an underlying health condition) wear medical masks when they are in areas of widespread transmission or social distancing cannot occur. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/when-and-how-to-use-masks
- The UK government has **changed its position** and is recommending the use of face coverings in enclosed spaces such as shopping centres and on public transport.
- Some countries have **strenghtened their position** making the use of masks in public areas such as shopping centres and public transport mandatory by law (Germany, and Scotland). 2020. https://www.ecdc.europa.eu/sites/default/files/documents/COVID-19-use-face-masks-community.pdf
- WHO has also recommended the use of non-medical masks in areas of widespread community transmission, settings with a high population density and settings were social distancing cannot be achieved. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/when-and-how-to-use-masks
- Some jurisdictions apply a risk-based approach and prioritise the use of medical masks by healthcare workers (ECDC); or when physical distancing is not possible (Canada).. https://www.dw.com/en/coronavirus-germanys-new-face-mask-regulations-explained/a-53260732, https://www.gov.scot/publications/coronavirus-covid-19-phase-2-staying-safe-and-protecting-others/pages/face-coverings/.
- Mask wearing in public is legally mandated in some jurisdictions with financial and other penalties in place (Singapore, China). https://www.gov.sg/article/when-should-i-wear-a-mask; https://www.coronavirus.gov.hk/eng/health-advice.html.
- https://www.gov.uk/government/news/public-advised-to-cover-faces-in-enclosed-spaces
- In the US, the wearing of cloth face covers for the public has been recommended by the CDC, on April 24: https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html

Appendices

Appendix 1: Included publications

Research

1. Brainard JS, Jones N, Lake I, Hooper L, Hunter P. Facemasks and similar barriers to prevent respiratory illness such as COVID-19: A rapid systematic review. medRxiv. 2020 Jan 1.
2. Cheng VC, Wong SC, Chuang VW, So SY, Chen JH, Sridhar S, To KK, Chan JF, Hung IF, Ho PL, Yuen KY. The role of community-wide wearing of face mask for control of coronavirus disease 2019 (COVID-19) epidemic due to SARS-CoV-2. Journal of Infection. 2020 Apr 23.
3. Eikenberry SE, Mancuso M, Iboi E, Phan T, Eikenberry K, Kuang Y, Kostelich E, Gumel AB. To mask or not to mask: Modeling the potential for face mask use by the general public to curtail the COVID-19 pandemic. Infectious Disease Modelling. 2020 Apr 21.
4. Harapan H, Itoh N, Yufika A, Winardi W, Keam S, Te H, Megawati D, Hayati Z, Wagner AL, Mudatsir M. Coronavirus disease 2019 (COVID-19): A literature review. Journal of Infection and Public Health. 2020 Apr 8.
5. Howard J, Huang A, Li Z, Tufekci Z, Zdimal V, van der Westhuizen HM, von Delft A, Price A, Fridman L, Tang LH, Tang V. Face masks against COVID-19: an evidence review.
6. Juneau CE, Pueyo T, Bell M, Gee G, Potvin L. Evidence-based, cost-effective interventions to suppress the COVID-19 pandemic: a rapid systematic review. medRxiv. 2020 Jan 1.
7. Kai D, Goldstein G-P, Morgunov A, Nangalia V, Rotkirch A. Universal Masking is Urgent in the COVID-19 Pandemic: SEIR and Agent Based Models, Empirical Validation, Policy Recommendations. 2020.
8. Ma QX, Shan H, Zhang HL, Li GM, Yang RM, Chen JM. Potential utilities of mask-wearing and instant hand hygiene for fighting SARS-CoV-2. Journal of Medical Virology. 2020 Mar 31.
9. MacIntyre RC, Chughtai AA. A rapid systematic review of the efficacy of face masks and respirators against coronaviruses and other respiratory transmissible viruses for the community, healthcare workers and sick patients. International Journal of Nursing Studies, 2020, 103629, ISSN 0020-7489, https://doi.org/10.1016/j.ijnurstu.2020.103629. (http://www.sciencedirect.com/science/article/pii/S0020748920301139)
10. Ngonghala CN, Iboi E, Eikenberry S, Scotch M, MacIntyre CR, Bonds MH, Gumel AB. Mathematical assessment of the impact of non-pharmaceutical interventions on curtailing the 2019 novel Coronavirus. arXiv preprint arXiv:2004.07391. 2020 Apr 15.
11. Worby CJ, Chang HH. Face mask use in the general population and optimal resource allocation during the COVID-19 pandemic. medRxiv. 2020 Jan 1.
12. Stern D, López-Olmedo N, Pérez-Ferrer C, González-Morales R, Canto-Osorio F, Barrientos-Gutiérrez T. Revisión rápida del uso de cubrebocas quirúrgicos en ámbito comunitario e infecciones respiratorias agudas. Salud Pública de México. 2020. doi: 10.21149/11379
13. Cui J, Zhang Y, Feng Z, Guo S, Zhang Y, 1 School of Science, Beijing University of Civil Engineering and Architecture, Beijing 102616, P.R. China, et al. Influence of asymptomatic infections for the effectiveness of facemasks during pandemic influenza. Mathematical Biosciences and Engineering. 2019;16(5):3936–46. doi: 10.3934/mbe.2019194

14. Machida M, Nakamura I, Saito R, Nakaya T, Hanibuchi T, Takamiya T, et al. Adoption of personal protective measures by ordinary citizens during the COVID-19 outbreak in Japan. International Journal of Infectious Diseases. 2020 May;94:139–44. doi: 10.1016/j.ijid.2020.04.014
15. Marasinghe KM. A systematic review investigating the effectiveness of face mask use in limiting the spread of COVID-19 among medically not diagnosed individuals: shedding light on current recommendations provided to individuals not medically diagnosed with COVID-19 [Internet]. In Review; 2020 Mar. doi: 10.21203/rs.3.rs-16701/v1
16. Chou R, Dana T, Jungbauer R, Weeks C, McDonagh MS. Masks for Prevention of Respiratory Virus Infections, Including SARS-CoV-2, in Health Care and Community Settings. Ann Intern Med. 2020 Oct 6;173(7):542–55. doi: 10.7326/M20-3213
17. Goscé L, Phillips PA, Spinola P, Gupta DRK, Abubakar PI. Modelling SARS-COV2 Spread in London: Approaches to Lift the Lockdown. J Infect. 2020 May 24; doi: 10.1016/j.jinf.2020.05.037
18. Ho K-F, Lin L-Y, Weng S-P, Chuang K-J. Medical mask versus cotton mask for preventing respiratory droplet transmission in micro environments. Sci Total Environ. 2020 Sep 15;735:139510. doi: 10.1016/j.scitotenv.2020.139510
19. Hong L-X, Lin A, He Z-B, Zhao H-H, Zhang J-G, Zhang C, et al. Mask wearing in pre-symptomatic patients prevents SARS-CoV-2 transmission: An epidemiological analysis. Travel Med Infect Dis. 2020 Jun 24;36:101803. doi: 10.1016/j.tmaid.2020.101803
20. Liang M, Gao L, Cheng C, Zhou Q, Uy JP, Heiner K, et al. Efficacy of face mask in preventing respiratory virus transmission: A systematic review and meta-analysis. Travel Med Infect Dis. 2020 May 28;101751. doi: 10/ggzp3h
21. Lyu W, Wehby GL. Community Use Of Face Masks And COVID-19: Evidence From A Natural Experiment Of State Mandates In The US. Health Aff (Millwood). 2020 Jun 16;101377hlthaff202000818. doi: 10.1377/hlthaff.2020.00818
22. Marchiori M. COVID-19 and the Social Distancing Paradox: dangers and solutions. arXiv:200512446 [physics, q-bio] [Internet]. 2020 May 25; Retrieved July 9, 2020, from http://arxiv.org/abs/2005.12446
23. Missoni E, Armocida B, Formenti B. Face masks for all and all for face masks in the COVID-19 pandemic: community level production to face the global shortage and shorten the epidemic. Disaster Med Public Health Prep. 2020 Jun 24;1–13. doi: 10.1017/dmp.2020.207
24. Quintana-Díaz MA, Aguilar-Salinas CA. UNIVERSAL MASKING DURING COVID-19 PANDEMIC - CURRENT EVIDENCE AND CONTROVERSIES. Rev Invest Clin. 2020;72(3):144–50. doi: 10.24875/RIC.20000196
25. Rodriguez-Palacios A, Cominelli F, Basson AR, Pizarro TT, Ilic S. Textile Masks and Surface Covers-A Spray Simulation Method and a 'Universal Droplet Reduction Model' Against Respiratory Pandemics. Front Med (Lausanne). 2020;7:260. doi: 10.3389/fmed.2020.00260
26. Romagnani P, Gnone G, Guzzi F, Negrini S, Guastalla A, Annunziato F, et al. The COVID-19 infection: lessons from the Italian experience. J Public Health Policy. 2020 May 29;1–7. doi: 10.1057/s41271-020-00229-y
27. Tirupathi R, Bharathidasan K, Palabindala V, Salim SA, Al-Tawfiq JA. Comprehensive review of mask utility and challenges during the COVID-19 pandemic. Infez Med. 2020;28(suppl 1):57–63.
28. Vo TS, Vo TTTN, Vo TTBC. Coronavirus Infection Prevention by Wearing Masks. Eurasian J Med. 2020 Jun;52(2):197–201. doi: 10.5152/eurasianjmed.2020.20056
29. Wang J, Pan L, Tang S, Ji JS, Shi X. Mask use during COVID-19: A risk adjusted strategy. Environmental Pollution. 2020 Nov 1;266(Pt 1):115099. doi: 10.1016/j.envpol.2020.115099
30. Wang Y, Tian H, Zhang L, Zhang M, Guo D, Wu W, et al. Reduction of secondary transmission of SARS-CoV-2 in households by face mask use, disinfection and social distancing: a cohort study in Beijing, China. BMJ Global Health. 2020 May 1;5(5):e002794. doi: 10.1136/bmjgh-2020-002794
31. Zeng N, Li Z, Ng S, Chen D, Zhou H. Epidemiology reveals mask wearing by the public is crucial for COVID-19 control. Medicine in Microecology. 2020 Jun 1;4:100015. doi: 10.1016/j.medmic.2020.100015

32. Zhang R, Li Y, Zhang AL, Wang Y, Molina MJ. Identifying airborne transmission as the dominant route for the spread of COVID-19. Proc Natl Acad Sci U S A. 2020 Jun 30;117(26):14857–63. doi: 10.1073/pnas.2009637117

Commentary, technical reports, and older literature

1. Cheng KK, Lam TH, Leung CC. Wearing face masks in the community during the COVID-19 pandemic: altruism and solidarity. The Lancet. 2020 Apr 16.
2. Cowling BJ, Chan KH, Fang VJ, Cheng CK, Fung RO, Wai W, Sin J, Seto WH, Yung R, Chu DW, Chiu BC. Facemasks and hand hygiene to prevent influenza transmission in households: a cluster randomized trial. Annals of internal medicine. 2009 Oct 6;151(7):437-46.
3. de Bruin YB, Lequarre AS, McCourt J, Clevestig P, Pigazzani F, Jeddi MZ, Colosio C, Goulart M. Initial impacts of global risk mitigation measures taken during the combatting of the COVID-19 pandemic. Safety Science. 2020 Apr 15:104773.
4. European Centre for Disease Control. Using face masks in the community: A technical report, 2020
5. Feng S, Shen C, Xia N, Song W, Fan M, Cowling BJ. Rational use of face masks in the COVID-19 pandemic. The Lancet Respiratory Medicine. 2020 Mar 20.
6. Garcia LP. Use of facemasks to limit COVID-19 transmission. Epidemiologia e Serviços de Saúde. 2020 Apr 22;29:e2020023.
7. Gandhi M, Havlir D. The Time for Universal Masking of the Public for Coronavirus Disease 2019 Is Now. InOpen Forum Infectious Diseases 2020 Apr (Vol. 7, No. 4, p. ofaa131). US: Oxford University Press.
8. Greenhalgh T, Schmid MB, Czypionka T, Bassler D, Gruer L. Face masks for the public during the covid-19 crisis. BMJ. 2020 Apr 9;369.
9. Keshtkar-Jahromi M, Sulkowski M, Holakouie-Naieni K. Public Masking: An Urgent Need to Revise Global Policies to Protect against Novel Coronavirus Disease (COVID-19).
10. MacIntyre CR, Hasanain SJ. Community Universal Face Mask Use during the COVID 19 pandemic—from households to travelers and public spaces. Journal of Travel Medicine. 2020 Apr 18.
11. Mahase E. Covid-19: What is the evidence for cloth masks?.BMJ 2020
12. Pleil JD, Beauchamp JD, Risby TH, Dweik RA. The scientific rationale for the use of simple masks or improvised face coverings to trap exhaled aerosols and possibly reduce the breathborne spread of COVID-19. Journal of Breath Research. 2020 Apr 17.
13. World Health Organisation. When and how to use masks [Internet]. World Health Organisation. Retrieved May 30, 2022, from https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/when-and-how-to-use-masks
14. Wu E, Qi D. Masks and thermometers: Paramount measures to stop the rapid spread of SARS-CoV-2 in the United States. Genes & Diseases. 2020 Apr 25.
15. Wu HL, Huang J, Zhang CJ, He Z, Ming WK. Facemask shortage and the novel coronavirus disease (COVID-19) outbreak: Reflections on public health measures. EClinicalMedicine. 2020 Apr 3:100329.

Appendix 2: Search strategy

Key concepts

Concept 1	Concept 2	Concept 3	Concept 4
Mask*	Coronavirus	Infect*	People/Public
Facemask*	COVID*	Transm*	Community
	CoV	Prevention	Universal

Timeframe

- This updated review includes peer reviewed and grey literature published between 2 May 2019 and 6 July 2020.

Inclusion and exclusion criteria

We **included** combinations of the following key words: mask, face mask, coronavirus, COVID, transmission, infection, universal, community. We included: systematic reviews, narrative reviews, and primary research. We also included peer reviewed commentaries. Agency and jurisdictional searches are listed in Appendix 5 and 6 with the most recent changes listed in Appendix 7.

We **excluded** studies that examined the use of masks in hospitals, outpatients, primary care and dental setting; by healthcare workers, symptomatic people or people diagnosed with COVID−19; studies that described the design of masks or tested their effectiveness or comparative effectiveness; studies focusing on mask shortages; studies on the re-use or disposal of masks; surveys of intended or self-reported mask use; legal or regulatory related studies and studies that examined influenza only. We excluded correspondence, news, letters, editorials and protocols.

We did not critically appraise the included studies and note that some studies may have been published before peer review was completed.

Sources

1. PubMed
    - Search: ((((coronavirus[Title/Abstract]) OR COVID[Title/Abstract]) OR COVID*[Title/Abstract]) AND mask[Title/Abstract]) OR face mask[Title/Abstract]
    - Limited to articles published from 23 April 2019 to 6 July 2020.
    - Excluded editorials, news, correspondence, letters
2. Cochrane Collaboration

- Keywords: Masks and COVID
- Limited to articles published from 23 April 2019 to 6 July 2020.

3. Lancet COVID Collection

   - Keywords: Masks and COVID
   - Limited to articles published from 23 April 2019 to 6 July 2020.

4. BMJ COVID Collection

   - Keywords: Masks and COVID
   - Limited to articles published from 23 April 2019 to 6 July 2020.

5. ScienceDirect COVID Collection:

   - Keywords: Masks and COVID
   - Selected review articles, mini review, and research articles limited to 2020

6. Google Scholar

   - Keywords: Effectiveness Mask COVID
   - First 6 pages of 10 articles per page to 30 April 2020.

Appendix 3 Search results

A Database	B Results	C Remove duplicates	D Excluded after title & abstract screening	E Full text review	F Excluded after full text review	G FINAL INCLUDED
	n=	n=	n=	n=	n=	n=
1 PubMed	521					
2 Cochrane COVID	157					
3 Lancet COVID	61					
4 BMJ COVID	964					
5 Science direct COVID	1490					
TOTAL	3193	1987	1915	72	55	***Total n=17***

The table above describes the search results for the peer-reviewed literature for the updated report only.

While Google Scholar and CEBM were searched for the initial report, and are mentioned in the Methods section for this report, they were not searched again for this updated report and therefore do not appear in the table above.

Appendix 4: Data extraction tables

4.1.1 Peer reviewed studies from initial report

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
1.	Brainard JS et al. 2020	Rapid systematic review and meta-analysis	The protective effect of wearing facemasks in community settings.	"*Wearing a facemask may very slightly reduce the risk of developing ILI [primary infection], by around 6%."* For studies based in the general community, facemask wearing was "*consistently protective [i.e. the] point-estimates of all included studies favoured facemask wearing*".	No	No, except *"facemasks for short periods of time by particularly vulnerable individuals when in transient higher risk situations."*	Outcome variable was "*influenza-like illness (ILI)",* not COVID-19 per se although study addresses COVID-19. The studies included had high heterogeneity of effects and noted considerable methodological problems. Evidence was of low to very low certainty.

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
2.	Cheng VC-C et al. 2020	Comparative study	The effect of community-wide mask usage to control COVID-19 in Hong Kong, compared to similar countries.	COVID-19 incidence in HK (129.0 per million) was significantly lower (p<0.001) than that of other developed countries chosen as comparisons, despite HK's population density. The countries with the next highest incidence were South Korea (200.5 p.m.), and Singapore (259.8 p.m.). Further, of 14 identified clusters of infection (totalling 124 cases of 961 total), 11 were associated with "*mask off activities*" (e.g. restaurants and gyms) and only 3 clusters were associated with "*mask on activities*".	No	Yes. Recommend community-wide mask usage.	Very high rates of compliance for face mask use in HK noted (estimated over 96%).
3.	Eikenberry SE et al. 2020	Modelling	Nonlinear differential equation SEIAR models (deterministic). (A=asymptomatic infectious)	*"Model simulations …suggest that broad adoption of even relatively ineffective face masks may meaningfully reduce community transmission of COVID-19 and decrease peak hospitalizations and deaths. Moreover, mask use decreases the effective transmission rate in nearly linear proportion to the product of mask effectiveness (as a fraction of potentially infectious contacts blocked) and coverage rate (as a fraction of the general population), while the impact on*	No	Yes. Adoption earlier in the pandemic is preferable. *"The community-wide benefits are likely to be greatest when face masks are used in conjunction with other non-pharmaceutical practices (such as social-*	

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
				epidemiologic outcomes (death, hospitalizations) is highly nonlinear, indicating masks could synergize with other nonpharmaceutical measures. Notably, masks are found to be useful with respect to both preventing illness in healthy persons and preventing asymptomatic transmission."		*distancing), and when adoption is nearly universal (nation-wide) and compliance is high."*	
4.	Cui et al. 2020	Modelling	Two models: 1. Dynamic network based compartmental SEIR (stochastic) 2. Individual-level ABM (agent-based model)	1) Significant impact under (near) universal masking when > 80% of population wears masks, vs minimal impact when only < 50% of population wears masks 2) significant impact when universal masking is adopted early, by Day 50 of a regional outbreak, vs minimal impact when universal masking is adopted late. These effects hold even at the lower filtering rates of homemade masks.		Yes. *".. our theoretical models and empirical results argue for urgent implementation of universal masking in regions that have not yet adopted it."*	*"Combined with other NPIs including social distancing and mass contact tracing, a "mouth-and-nose lockdown" is far more sustainable than a "full body lockdown", from economic, social, and mental health standpoints."*
5.	Ngonghala CN et al. 2020	SEIR model with elaborations for	"[Assess] the population-level impact of …control and mitigation	"This study shows that the use of face-masks in public is always useful, and their population-level impact increases		Implicitly, Yes. *"COVID-19 is a disease that appears to be*	Model was parameterised on NY state and US data.

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
		quarantining and asymptomaticity, implemented as a Kermack-McKendrick-type mathematical model, i.e. deterministic nonlinear differential equations.	strategies", i.e. "social-distancing, contact-tracing, quarantine, isolation, and the use of face-masks in public".	[with] increases [in] efficacy and coverage. In particular, even the use of low efficacy masks will greatly reduce the burden of the pandemic if the coverage in their usage in the community is high enough. Furthermore, our study shows that combining the masks-based strategy with the strict social distancing strategy is more effective than the singular implementation of either strategy."		*controllable using basic non-pharmaceutical interventions, particularly social-distancing and the use of face masks in public (especially when implemented in combination)."*	Shares 3 authors with Eikenberry paper, and results are consistent with that paper.

6.	Worby CJ et al. 2020	SEIR models coupled with economic models of face mask distribution.	*"[E]xamined the role of face masks in mitigating the spread of COVID-19 in the general population... [and] the optimal deployment of face masks when resources are limited."*	*"[F]ace masks, even with a limited protective effect, can reduce infections and deaths, and can delay the peak time of the epidemic. We consistently found that a random distribution of masks in the population was a suboptimal strategy when resources were limited. Prioritizing coverage among the elderly was more beneficial, while allocating a proportion of available resources for diagnosed infected cases provided further mitigation."*		Yes (implicitly). Re: mask distribution, the authors note: *"…prioritizing the elderly population and retaining a supply of masks for identified infectious cases generally leads to a larger reduction in total infections and deaths than a naïve allocation of resources."* Re: relaxation of social distancing, they note: *"Face mask use could be a particularly important component of transmission mitigation once social distancing measures are relaxed, and potential exposures rapidly increase. Preparing an adequate supply of face masks for such a transitionary period could help to prevent a potentially costly second peak."*	

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
7.	Harapan et al. 2020	Literature review (COVID-19).	Reviewed the causative agent, pathogenesis and immune responses, epidemiology, diagnosis, treatment and management of the disease, control and preventions strategies.	N/A	N/A	Yes. If large-scale community transmission occurs, wearing personal protective equipment such as facemask should also be enforced in combination with other measures.	
8.	Howard et al. 2020	An Evidence Review	synthesize the relevant literature to inform: 1. transmission characteristics of 2. COVID-19, 3. filtering characteristics and efficacy of masks, 4. estimated population impacts of widespread community mask use.	Near-universal adoption of non-medical masks when out in public, in combination with complementary public health measures could successfully reduce effective-R to below 1.0, thereby stopping community spread.	N/A	Yes. Face masks are a valuable tool to reduce community transmission when used in conjunction with widespread testing, contact tracing, quarantining of anyone that may be infected, hand washing, and physical distancing. All of these measures have the potential to reduce the	

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
			5. sociological considerations for policies concerning mask-wearing.			period of lockdown required. Mask wearing may be critical to preventing a second wave of infections from overwhelming the health care system – Further research is urgently needed here.	
9.	Juneau et al. 2020	Rapid systematic review	Provide a comprehensive summary of the evidence on epidemic control, with a focus on cost-effectiveness.	Face masks, when combined with hand washing, swift contact tracing & case isolation and protective equipment measures, is likely the most cost-effective strategy.	N/A	Yes. Wearing face mask as early as possible with other measures.	
10.	Qing-Xia Ma et al 2020	1. Support of experiments 2. Literature review 3. Control experiences	1. Efficacy of three types of masks and instant hand wiping was evaluated using the avian influenza virus to mock the coronavirus.	N95 masks, medical masks, and homemade masks made of four-layer kitchen paper and one-layer cloth could block 99.98%, 97.14%, and 95.15% of the virus in aerosols	Medical mask-wearing which was suppor	Yes. Propose the approach of mask-wearing plus instant hand hygiene (MIH) to slow the exponential spread of the virus. This MIH approach	

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
			2. Previous studies on mask-wearing were reviewed.		ted by many studies was opposed by other studies possibly due to erroneous judgment.	has been supported by the experiences of seven countries in fighting against COVID-19	
11.	Machida et al. 2020	Cross-sectional study based on internet-based survey. A total of 2400 people (50% male: 20–79 years) were selected between	Implementation status of personal protective measures by ordinary citizens in Japan during the coronavirus disease 2019 (COVID-19) outbreak.	The author did not consider face mask per se and discussed the personal protective measure in general.	The protective measures implemented by ordina	Further public awareness activities are required.	

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
		February 25 and 27, 2020, from registrants of an Internet research company, to complete a questionnaire.			ry citizens are insufficient.		
12.	MacIntyre & Chughtai 2020	Systematic review of randomised controlled clinical trials (n=19)	The use of respiratory protection by healthcare workers, sick patients and community members.	In the community, masks appeared to be more effective than hand hygiene alone, and both together are more protective.	The use of masks by sick patients is likely protective. Medical masks were not effective,	Yes. The study suggests that community mask use by well people could be beneficial, particularly for COVID-19, where transmission may be pre-symptomatic. Masks may be more protective for well people.	

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
					and cloth masks even less effecti ve when used by sick patient s.		
13.	Stern D et al. 2020	Rapid Review. 21 papers including 6 systematic reviews.	Assessed effectiveness of using surgical masks in community settings to reduce COVID-19 infection or other acute viral respiratory infection, compared to not using surgical masks.	Did not find sufficient evidence to support the general use of surgical masks to reduce the number of viral respiratory infections.	No.	No.	
14.	Marasinghe et al. 2020	Systematic review	Investigated the effectiveness of face	The systematic review found no studies that investigated the effectiveness of face	No.	NA	

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
			mask use in limiting the spread of this specific virus, COVID-19 among this specific population, those who are not medically diagnosed with COVID-19.	mask use in limiting the spread of COVID-19 among people who are not medically diagnosed with COVID-19.			

4.1.2 Peer reviewed studies from updated report

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
1.	Liang, Gao, Cheng et al 2020	8 studies were on non-healthcare workers: 3 case-control, and 5 cluster RT.	Do masks have a protective effect on the spread of respiratory viruses?	*"In the subgroup of non-HCW .. a protective effect was found with the pooled OR of 0.53 (95% CI = 0.36–0.79, I2 = 45%)."* Wearing a mask reduced the risk of contracting a RVI.	N	Yes. *"[This review] showed the general efficacy of masks in preventing the transmission of RVIs."*	There were no studies addressing non-HCW populations which were of SARS-Cov-2. The viruses were: SARS 2 studies, 4 influenza, 1 H1N1, 1 other.
2.	Marchiori 2020	Experiment	Social distancing measured using an ultrasonic sensor, with the operator wearing different levels of masks and goggles and walking past people on footpaths of various widths, staying to the extreme side of the footpath to allow maximum space to the other person.	**Social distancing increased with the level of visible protective equipment worn.** On at 163cm wide footpath, if the operator was not wearing a mask nor goggles the mean distance was 29cm; if wearing a surgical mask, 58cm; a crude DIY mask, 69cm; a surgical mask plus goggles, 80cm; DIY mask plus goggles, 92cm.	N	Yes. *"Given that masks lead people to implement social distancing in a safe way and also provide an overall distance boost, usage of masks should be in fact be always recommended to everyone … Goggles are currently not recommended protection equipment for the population, but they should [be], given they provide a significant additional boost to social distance."*	

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
3.	Wang, Tian, Zhang et al. 2020	Retrospective cohort study; n = 335 in 124 families	Does use of face masks, disinfectants and social distancing reduce transmission within families?	In families where one member developed SARS-Cov-2, face mask use *before* they became symptomatic reduced transmission (OR = 0.21), but *after* symptoms developed was not protective.	N	*"**The study confirms the highest risk of transmission prior to symptom onset,** and provides the first evidence of the effectiveness of mask use, disinfection and social distancing in preventing COVID-19."* *"We recommended that those families with members who were at risk of getting infected with SARS-CoV-2 .. should apply UFMU [universal face mask usage] to reduce the risk of household transmission."*	

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
4.	Quintana-Diaz et al 2020	Brief literature review. Number of studies not provided.	Reviewed mode of transmission in relation to size of droplets; discussed definitions of masks and variations in use across studies, countries and populations	Some studies suggests the consequences of wearing masks include: improper use, non-adherence, shortage of masks, false sense of security, and dismissing other measures.	N	Future research should include: cost-benefits, randomised controlled trials, stratified samples based on occupation, predefined outcomes.	
5.	Missoni et al 2020	Brief literature review. Number of studies not provided.	Paper discussed the variations in policies between countries and WHO regarding face masks particularly homemade.	Some studies suggested that wearing homemade masks is better than no masks.		Authors concludes that (1) homemade masks along with social distancing should be implemented; (2) call for more research re homemade mask and community sustainability.	
6.	Lyu & Wehby 2020	An event study examining changes in the daily county-level	(1) Review of states' orders about mask wearing among public only, public and HCW, or HCW only. (2) Statistical analysis tested	Mandating face mask use in public is associated with a decline in the daily COVID-19 growth rate by 0.9, 1.1, 1.4, 1.7, and 2.0		The findings suggest that requiring face mask use in public might help in mitigating COVID-19 spread	

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
		COVID-19 growth rates between March 31, 2020 and May 22, 202	trends in COVID-19 rates before/after the states' orders were issued, given time of implementation, population density, and socio-economic factors.	percentage points in 1–5, 6–10, 11–15, 16–20, and 21+ days after signing, respectively. Estimates suggest as many as 230,000–450,000 COVID-19 cases possibly averted by May 22, 2020 by these mandates. No significant results from HCW-only masks.			
7.	Wang, Pan, Tang et al. 2020	Narrative review	Reviews transmission routes of COVID-19 and effectiveness of masks in both hospital and non-hospital settings. Main search terms: “COVID-19” and synonyms; “face mask” and synonyms.	Found that: “Considering the transmission route and characteristics of SARSCoV-2, wearing masks [by the general public] is an indispensable measure to prevent droplet and possible aerosol transmission”.		Based on the limited supply of masks, recommended a strategy of wearing masks in situations of higher risk (e.g. crowded places) and by persons who are at higher risk (e.g. healthcare workers).	NB the literature reviewed covers a range of RVs, not just COVID-19.

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
8.	Goscé, Phillips et al. 2020	Mathematical model of COVID-19 in London.	Investigated the effects of various combinations of NPIs on its future spread using a SEIR model.	Found that “In order to achieve elimination and lift lockdown within 5 months, the best strategy seems to be a combination of weekly universal testing, contact tracing and use of facemasks, with concurrent lockdown. This approach could potentially reduce deaths by 48% compared with continued lockdown alone.”		“A combination of NPIs such as universal testing, contact tracing and mask use while under lockdown would be associated with least deaths and infections. This approach would require high uptake and sustained local effort but it is potentially feasible as may lead to elimination in a relatively short time scale.”	
9.	Rodriguez-Palacios et al 2020	Simulation, modelling and scoping review	Used a bacterial-suspension spray simulation model of droplet ejection (mimicking a sneeze), to quantify the extent by which 6 widely available fabrics reduce the dispersion of droplets onto surfaces within 1.8m, the minimum distance	All textiles reduced the number of droplets reaching surfaces, restricting their dispersion to <30 cm, when used as single layers. Double-layers were as effective as medical mask/surgical-cloth materials, reducing droplet dispersion to <10 cm, and the area of	N	Yes. Authors recommend the use of fabric masks as a “community droplet reduction solution”.	

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
			recommended for COVID-19 social distancing. They tested universal droplet reduction models and conducted a scoping review to determine the fluid carrying capacity of small and large size droplets.	circumferential contamination to ~0.3%. The authors conclude that face covers, scarfs or masks will reduce the risk of transmitting/ acquiring COVID-19.			
10.	Tirupathi, Bharathidasan, Palabindala et al 2020	Review	The review examines the efficacy of various types of masks including N95 respirators, surgical masks, and cloth masks. Techniques for extended use, reuse, and sterilization of masks are strategized.	Cloth masking in the public may help slow the progression of the pandemic by preventing transmission from asymptomatic and pre-symptomatic individuals. Poorly fitting masks limit protection from aerosols. To avoid depleting supplies of medical masks, universal use could be targeted to particular areas of residence, based on the	N	Masks alone are not enough to control the disease and must be coupled with other non-pharmacological interventions such as social distancing, quarantining/ isolation, and diligent hand hygiene.	

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
				severity of community transmission.			
11.	Vo et al 2020	Narrative review	The review examines the influence of droplet travel in person-to-person transmission; and the effectiveness of wearing masks in COVID-19 to prevent infection (7 RCTs in community and clinical settings).	Studies on the effectiveness of wearing masks specific to COVID-19 are limited.		Wearing masks routinely is recommended for all individuals to prevent exposure in the community until a vaccine is invented. Isolation, handwashing, and preventing the spread of the virus are the practical strategies used to tackle the spread of COVID-19. In addition, respiratory protection by wearing masks is one of the methods to prevent infection of the influenza virus; however, trials related to COVID-19 are limited.	

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
12.	Hong, Lin, et al, 2020	Comparative study by retrospective review of EMRs, and questionnaire of COVID-19 patients admitted to an official treatment centre N=127 (64 local residents, 63 recently returned from Wuhan)	Compared infection rates between people who had confirmed close contact with mask-wearing pre-symptomatic individuals, and those who had confirmed contact with non-mask-wearing pre-symptomatic individuals.	19% of individuals who had close contact with a pre-symptomatic individual who DID NOT wear a mask were infected (14/74) 8.1% of individuals who had close contact with a pre-symptomatic individual who DID wear a mask were infected (10/123).	No	Yes. Authors recommend universal use of masks in public and community areas.	Also recommend restrictions on mass gatherings.

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
13.	Ho et al 2020	N=211 (205 with influenza, 6 with suspected COVID-19)	Compared the effectiveness of triple layer cotton masks with medical masks for preventing respiratory droplet transmission of COVID-19 by infected individuals. Tests were done in a bedroom and in a car, both with air conditioning. Both types of masks were also compared with no mask and with background levels.	Mean concentrations were significantly higher for no mask as compared to background in both the bedroom and the car. There was no significant difference between background concentrations and with-mask concentrations in either bedroom or car. Concentrations were comparable and non-significantly different between medical and cotton masks.		N/A Authors findings suggest that a cotton mask could be a substitute for a medical mask in infected people in a micro-environment with air conditioning and by healthy people in the community.	
14.	Zeng et al 2020	Generalized Additive Model (GAM) of daily infection curve in China, South Korea, Italy and Spain (using	To generate the epidemiological curves and simulated infection curves with reported incubation period in the four countries.	1) Infection curve can reflect the public health measurement sensitivity. 2) Infection curve in Guyandong and Shanghai indicate that wearing masks by		Yes The results support the importance of mask wearing by the public.	The report assumed 8 days from symptom onset to report; assume 5.2 days incubation period.

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
		publicly available data)		the public was the key measurement. 3) Similar curve outside of China, even smaller, indicates the same result.			
15.	Zhang et al 2020	Use linear correlation between infection number and date to analyse trend and mitigation measures in Wuhan, China, Italy and New York City from Jan 23 to May 9, 2020.	To illustrate the impact of mitigation measures and trends of pandemic.	1) Wearing masks alone could significantly reduce the number of infections in Italy and New York City. 2) Other mitigations are insufficient on their own i.e. Social distancing, quarantine, isolation, hand sanitizing and minimizing contact.		Yes. Wearing masks in public is most effective, with simultaneous social distancing, quarantine and contract tracing.	Insufficient description of research method and inconsistent use of New York and the US.

Reference number	Author, year	Study design n=	What did they test or review?	Results	Unexpected consequences	Authors recommend Y/N and with what conditions (if any) or timing (stage of pandemic)	Other
16.	Romagnani et al 2020	Descriptive study	Analysed the evolution of the COVID-19 epidemic in the Italian regions of Veneto and Lombardy	Included for completeness	No	Yes Authors recommend that the population are provided with masks.	
17.	Chou et al	Rapid review N=33 867 from 39 studies (18 RCTs, 21 observational studies)	To examine the comparative effectiveness of N95, surgical, and cloth masks in community and health care settings for preventing respiratory virus infections, and effects of reuse or extended use of N95 masks.	Evidence on SARS-CoV-2 was limited and of low quality. Community mask use was possibly associated with decreased risk for SARS-CoV-1 infection in observational studies.	No	N/A	

Glossary

NPI – non-pharmaceutical intervention
RVI – respiratory viral infection
SEIR – Susceptible, Exposed, Infected (or Infectious), Recovered. A type of epidemiological population model which places the population into these compartments to analyse the dynamics of disease transmission.

4.2 Peer reviewed commentary and organisation commentaries

Author, Year	Summary	Authors recommend mask use?
Chan and Yuen 2020	Paper addresses three questions: 1. Can infected individuals reduce the risk of spreading the virus to others by wearing facemasks? 2. Can uninfected people reduce the risk of infection by wearing facemasks? 3. Can widespread use of facemasks in a population can facilitate the control of an epidemic? And discusses cost versus benefit.	In high risk regions: along with other measures wearing a facemask might assist to reduce spread. Low risk regions (no sustained human-to- human transmission): might not be necessary or cost effective.
Cheng, Lam, Luen 2020	Discusses the need for masking wearing by community members to increase source (airborne particles) control.	Yes, complementary to social distancing and hand washing.
De Bruin et al. 2020	Overview of lessons learnt on the effectiveness of measures used to reduce spread of COVID-19.	Yes, proper use of face masks by the public along with other measures such as hand hygiene and isolation of infected people could offer additional benefit.
Feng et al. 2020	Comparison of face mask use recommendations by different health authorities.	No, universal use of face masks could be considered if supplies permit.
Garcia 2020	Overview of the potential benefits of using facemasks to stop the spread of COVID-19.	No, recommendation on use. Recommends there needs to be more research.
Ghandi and Havlir 2020	Paper recommending the universal masking of the US public during the coronavirus disease.	Yes, within the US context.
Greenhalgh et al. 2020	A paper recommending the use of facemasks based on the idea there is little to lose and potentially a significant amount to gain.	Yes, policy makers should encourage public use of facemasks on precautionary grounds.
Keshtkar-Jahromi, Sulkowski and Holakouie-Naieni 2020	A paper calling for a global review by WHO and country leaders on the wearing of facemasks for the general public.	No recommendation, however, calls for evidence to be reviewed.
MacIntyre & Hasanain 2020	Overview of available evidence on universal face mask use (UFMU) to reduce spread of COVID-19.	Yes, if epidemic control is poor, until an effective vaccine is available.
Mahase 2020	Examination of the evidence for wearing cloth masks.	No recommendation.

Author, Year	Summary	Authors recommend mask use?
Pleil et al. 2020	An overview of community use of a variety of facemasks to prevent the spread of COVID-19.	Yes, in addition to other measures such as social distancing.
Wu & Qi 2020	Overview on why the wearing of masks in public and the use of thermometers should be added to the US president's coronavirus guidelines for America "*15 Days to Slow the Spread."*	Yes, in the US context.
Pradhan	Implementation of preventive protective measures.	Yes.
Wu and Huang	To effectively curb the rapid spread of SARS-CoV-2, two more control measures, facemasks and temperature taking are proposed for inclusion.	Yes.

Appendix 5: McMasters guide to COVID-19 evidence sources

Webpage and link	Summary of contents
World Health Organization	Technical guidance
National Institutes of Health	Treatment guidelines
National Institute for Health and Care Excellence	Rapid guidelines
BIGG	International database of GRADE guidelines
National COVID-19 Living Evidence Task Force	Guidelines for healthcare professionals
Johanna Briggs Institute	Infection control and prevention measures for health professionals and for health organisations
Cochrane systematic reviews	Specialised collection of COVID-19
US Veterans' Affairs (VA) Evidence Synthesis Program	Inventory of systematic reviews (completed and in progress) focused on COVID-19, with flags for reviews meeting minimum quality standards and for living reviews
Evidence Aid	Summaries of systematic reviews that may be relevant to COVID-19 in eight broad areas (infection prevention and control; clinical characterization and management; therapeutics and vaccines; public-health interventions; health systems and services; epidemiology; ethical considerations; and social science in response)
New South Wales' Agency for Clinical Innovation	COVID-19 Critical Intelligence Unit
National Collaborating Centre for Methods and Tools	COVID-19 Rapid Evidence Review
Ontario Health's Quality Business Unit	Special Reports: Health Quality Ontario's reports and publications.
SPOR Evidence Alliance	Methods and Applications Group in Indirect Comparisons (MAGIC) Network Meta-Analysis team (part of the CIHR Drug Safety and Effectiveness Network) – Coming soon, but with existing rapid reviews listed below
Knowledge to Policy Center	Knowledge to Policy Centre - Lebanon
Norwegian Institute of Public Health	Live map of COVID-19 evidence

Webpage and link	Summary of contents
National Institute for Health and Care Excellence (NICE)	COVID-19 related material
COVID-NMA	Living evidence map and living network meta-analysis
EPPI Centre	Living evidence map of human studies organised by 11 areas of focus
Norwegian Institute of Public Health	Living evidence map of human, animal, in vitro and in silico studies organised by eight areas of focus,
COVID-19+ by McMaster PLUS	Critically appraised systematic reviews and single studies organised by quality level and document type
DistillerSR	Curated, tagged and downloadable references to single studies
L*VE by Epistemonikos	Existing systematic reviews of effects and the primary studies, including trials, that were included in the reviews
LitCovid from PubMed	Systematic reviews and single studies organised by mechanism, transmission, treatment, case report, and epidemic forecasting
TRIP database	Includes systematic reviews and single studies organised by document type
World Health Organization database	Single studies
BMJ	Coronavirus Hub
CellPress	Coronavirus Hub
EBSCO	COVID Information Portal
Elsevier	Novel Coronavirus Information Centre
Lancet	COVID Resource Centre
New England Journal of Medicine	A collection of articles and other resources on the Coronavirus (COVID-19) outbreak, including clinical reports, management guidelines, and commentary
Sage	COVID-19 specific research
SpringerNature	COVID-19 specific research
SSRN	Coronavirus and Infectious Disease Research page
Wiley	COVID-19: Novel Coronavirus Content
Wolters Kluwer	COVID-19 Resources & Tools (Coronavirus Resources)

Webpage and link	Summary of contents
Centers for Disease Control and Prevention	Sources of data contained in systematic reviews and single studies
COVID-19 Open Research Dataset Challenge (CORD-19)	Articles from a broader range of sources presented in a way that supports natural-language processing
Doctor Evidence	Articles from a broader range of sources presented in a way that supports natural-language processing
Rayyan	Articles from similar sources and presented in a way that supports natural-language processing
EPI-WIN	WHO Information for Network for Epidemics
Africa Evidence Network	COVID-19 related content
WHO Regional Office for Europe	Technical guidance
Government of Canada	COVID information for Canada
CanCOVID	COVID information for Canada
Government of Ontario	COVID information for Ontario, Canada
Public Health Ontario	Information from Public Health Ontario on COVID.
Chinese Center for Disease Control and Prevention	COVID information
Health Information and Quality Authority	COVID related publications
American University of Beirut	COVID related material
CHAIN	COVID related material
Public Health England	Collection of COVID material
Center for Disease Control	COVID communication resources
Johns Hopkins Medicine POC-IT Guide	Collection of COVID material

Appendix 6: Jurisdictions

National Governments	
Australia	https://www.health.gov.au/resources/publications/coronavirus-covid-19-information-on-the-use-of-surgical-masks
Canada	https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/prevention-risks/about-non-medical-masks-face-coverings.html
New Zealand	https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-novel-coronavirus-health-advice-general-public/covid-19-face-mask-and-hygiene-advice
United Kingdom (Scotland)	https://www.gov.scot/publications/coronavirus-covid-19-public-use-of-face-coverings/
United Kingdom (Ireland, England and Wales)	Nil.
United States CDC	https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover.html https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html
Other jurisdictions and organisations	
European Centre for Disease Prevention and Control	https://www.ecdc.europa.eu/sites/default/files/documents/COVID-19-use-face-masks-community.pdfhttps://www.ecdc.europa.eu/en/publications-data/using-face-masks-community-reducing-covid-19-transmission
World Health Organization	https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/when-and-how-to-use-masks
Singapore	https://www.gov.sg/article/when-should-i-wear-a-mask

Hong Kong	https://www.coronavirus.gov.hk/eng/health-advice.html
NZ	https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-novel-coronavirus-health-advice-general-public/covid-19-face-mask-and-hygiene-advice
Germany	https://de.usembassy.gov/german-mask-regulations-state-by-state/

Appendix 7: Changes in jurisdictional advice

Jurisdiction or organisation	Initial advice	Current advice	Change in advice Y/N
National Governments			
Australia	If you are well, you do not need to wear a surgical mask due to little evidence supporting the widespread use of surgical masks in healthy people to prevent transmission.	The routine use of face masks in the community is currently not recommended, while the rate of community transmission of COVID-19 is low.	Y
Canada	Wearing a homemade non-medical mask/facial covering in the community is recommended when social distancing is not possible, particularly in crowded public settings.	No change.	N
United Kingdom	Nil.	• People who use public transport or visit shops should consider covering their mouth and nose based on advice from the Scientific Advisory Group for Emergencies (SAGE). • Face coverings are not a replacement for social distancing and regular handwashing. • Public urged not to buy medical grade masks so they can be saved for frontline health and care workers, and instead make their own face coverings at home.	Y
Scotland	Wear a face mask where social distancing is not possible.	• Wearing a face covering will, by law, be compulsory (with certain exceptions) from 10 July in shops. • People must by law wear a face covering on public transport and public transport premises such as train stations and airports.	Y

Jurisdiction or organisation	Initial advice	Current advice	Change in advice Y/N
		• Children under 5 do not need to wear face masks.	
United States., Centre for Disease Control and Prevention (CDC)	Wear a cloth face covering in public settings and when social distancing is difficult to maintain.	• Wear cloth face coverings in public settings and when around people who don't live in your household, especially when social distancing are difficult to maintain. • Most likely to reduce the spread of COVID-19 when they are widely used by people in public settings. • Should NOT be worn by children under the age of 2 or anyone who has trouble breathing, is unconscious, incapacitated, or otherwise unable to remove the mask without assistance.	N
New Zealand	Wearing of masks by the general public is probably not required.	• **Healthy people in the community are not currently required to wear a face mask for protection from COVID-19.** • **Healthy members of the public may choose to purchase and wear a face mask or make their own.**	N
Hong Kong	• Wear a surgical mask when taking public transport or staying in crowded places. • It is essential for persons who are symptomatic to wear a surgical mask.	**No change.**	N
Germany	**Facemasks compulsory on public transport and shopping centres.**	**Facemasks compulsory on public transport and shopping centres.**	N

Jurisdiction or organisation	Initial advice	Current advice	Change in advice Y/N
International Recommendations			

World Health Organization (WHO)	Medical masks should be prioritised for health care workers.	• Medical masks are recommended for:
		  ○ Health care workers caring for someone with Covid-19
		  ○ health care workers and caregivers in geographical areas where there is community transmission
		  ○ at-risk people when they are in areas of widespread transmission and social distancing cannot occur
		  ○ anyone with symptoms of Covid-19 in any community setting.
		• The use of non-medical masks should be encouraged in the following:
		  ○ areas of widespread transmission with little ability to implement social distancing and other measures
		  ○ settings with a high population density
		  ○ settings were social distancing cannot be achieved.
		• Masks to be used in conjunction with other measures such as hand hygiene, social distancing and not touching face.
		• Appropriate use of masks is also essential.
		• For countries considering the widespread use of masks to take a risk-based approach.
			Y

European Centre for Disease Prevention and Control (ECDC)	• Medical masks should be prioritised for health care workers. • The use of face masks in public may serve as a means of source control.	No change in advice since April, 2020.	N

Jurisdiction or organisation	Initial advice	Current advice	Change in advice Y/N
	• It is not known how much the use of masks in the community can contribute to a decrease in transmission in addition to the other countermeasures. • The use of face masks in the community could be considered, especially when visiting busy, closed spaces. • The use of non-medical face masks made of various textiles could be considered. • The use of face masks in the community should be considered only as a complementary measure to other measures such as hand washing and social distancing. • Appropriate use of face masks is key for the effectiveness of the measure and can be improved through education campaigns. • Recommendations on the use of face masks in the community should carefully consider evidence gaps, the supply situation, and potential negative side effects.		

Appendix 8: Authors

This report was prepared by Gabriel Moore, Sian Rudge, Anton du Toit, Brydie Jameson, Rebekah Jenkin, Rebecca Gordon and Nina Dhirasasna.

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