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Rapid review of public health guidance on universal face mask use by healthcare workers in the context of COVID-19

13 August 2020

Key points

- This review was undertaken on 9 April 2020 to inform a decision on whether healthcare workers (HCWs) should move to universal mask wearing.
- Specific guidance on the general use of masks by HCWs in healthcare settings, is limited.
- General wearing of masks by HCWs has been identified as a measure for reducing transmission of COVID-19 within healthcare settings, when used in conjunction with standard IPC measures and, rapid identification of cases and provision of masks for suspected and confirmed cases.
- Hong Kong recommended general mask wearing by HCWs in all areas of a healthcare setting, in the context of COVID-19 (17 January).
- Public Health England recommended that a mask is worn for all direct patient care when assessing an individual that is not currently a suspected or confirmed case, where there is sustained transmission in a setting. This guidance covered England, Northern Ireland, Scotland and Wales (7 April).
- The CDC (3 April) and the RKI (22 April) in Germany suggested that HCWs consider wearing a mask at all times when in residential care facilities due to the vulnerability of this patient group to COVID-19.
- There is general agreement across guidelines that masks should be prioritised for HCWs in contact with suspected or confirmed cases and undertaking aerosol generating procedures in other contexts.
- The importance of the provision of masks for patients and staff who develop respiratory symptoms is prioritised in guidance over implementation of general wearing of masks by HCWs.
- The ECDC advised that if the use of masks by HCWs in general is to be implemented, the decision should take into account the availability of masks, the extent of community transmission and other measures in place (8 April).

Background

General wearing of surgical or medical masks (hereafter referred to as masks) by healthcare workers (HCWs) in healthcare settings is standard practice in some countries, largely in Asia, and some individual settings, particularly in the US, have adopted this measure. Masks are part of the recommended personal protective equipment (PPE) for dealing with a suspected or confirmed case of COVID-19.

However, due to the potential for asymptomatic transmission of COVID-19, it is not clear whether a mask offers any further protection in healthcare settings in which the wearer has no direct interactions with symptomatic patients, and whether this practice should be recommended. There are two scenarios where transmission is possible:

- during the care of an unidentified case
- from a HCW who is asymptomatic or has mild symptoms to a patient or colleagues.

Any recommendation for the general wearing of masks by HCWs in healthcare settings during the COVID-19 pandemic is further complicated by the worldwide shortage of personal protective equipment, difficulties in achieving appropriate use of masks during common activities (for example eating, answering the phone) and the risk of lapses in other infection prevention control (IPC) measures due to the sense of safety mask wearing can provide.

To inform National Public Health Emergency Team (NPHET) decision making, the Health Information and Quality Authority (HIQA) undertook a rapid review of public health guidance on the use of masks by HCWs when not treating a suspected or confirmed case of COVID-19. The rapid review summarises recommendations that have been issued internationally to reduce the spread of COVID-19 and protect HCWs and patients. The focus of this review is on the general use of masks by HCWs while in healthcare settings.

Methods

The review was undertaken on 9 April 2020, in line with HIQA's *Protocol for the identification and review of new and updated relevant COVID-19 public health guidance*, available on www.hiqa.ie. A detailed account of the methods used in this review are provided in the protocol.

Results

The rapid review found that there is specific guidance limited to a small number of countries on the general use of masks by HCWs in healthcare settings, outside of the

use of masks when dealing with suspected and confirmed cases of COVID-19 and the use of masks by patients displaying symptoms. Where guidance has been provided, it is largely tempered by the need to prioritise masks for HCWs dealing with suspected and confirmed cases of COVID-19 and patients displaying symptoms.

The review found that Hong Kong, Public Health England, the Centers for Disease Control and Prevention (CDC), Germany, Australia and New Zealand have made specific recommendations about the wearing of masks in general, in all patient care and or when dealing with vulnerable groups.

The guidance relevant to the general use of masks by HCWs while in healthcare settings, is summarised below, by individual organisation and country.

World Health Organization

The World Health Organization (WHO) published interim guidance, *Infection prevention and control during healthcare when COVID-19 is suspected*, on 19 March.¹ This contains no specific guidance for HCWs and the use of masks in healthcare settings, other than when dealing with suspected and confirmed cases. The WHO notes that when dealing with any patient, wearing of masks should be appropriate and based on a risk assessment of the patient.

The WHO has also published interim guidance on the use of masks in the context of COVID-19 on 6 April.² This includes guidance for healthcare settings in areas that have confirmed cases of COVID-19. The WHO recommends that masks are prioritised for HCWs and HCWs wear masks when dealing with COVID-19 suspected and confirmed cases. No explicit guidance for HCWs outside of that context is given. However, it is emphasised that the use of a mask alone is insufficient to provide an adequate level of protection, and other measures such as rapid triage of cases and provision of masks for those who develop respiratory symptoms, should also be adopted. The WHO also recommends that whether or not masks are used, maximum compliance with hand hygiene and other IPC measures is critical, and that cotton cloth masks are not considered appropriate for HCWs as they may increase risk of infection.

The WHO also published *Rational use of PPE personal protective equipment for coronavirus disease (COVID-19) and considerations during severe shortages* on 6 April.³ This includes limited guidance on use of masks other than when interacting

¹ [https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected-20200125](https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125)

² [https://www.who.int/publications-detail/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-\(2019-ncov\)-outbreak](https://www.who.int/publications-detail/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak)

³ https://apps.who.int/iris/bitstream/handle/10665/331498/WHO-2019-nCoV-IPCPPE_use-2020.2-eng.pdf

with suspected or confirmed cases. It highlights that the overuse or misuse of PPE will impact on supply shortages. It specifies that:

- no mask is required for clinical triage with no direct contact, of patients without symptoms of COVID-19
- patients with symptoms should be provided with a mask
- HCWs should wear a mask when entering the room or providing direct care to suspected or confirmed cases.

On 2 March, the WHO issued guidance on infection prevention and control in long-term care facilities in the context of COVID-19.⁴ This guidance makes no reference to wearing masks other than when dealing with suspected or confirmed cases.

European Centre for Disease Prevention and Control

On 8 April, the European Centre for Disease Prevention and Control (ECDC) published *Coronavirus disease 2019 (COVID-19) in the EU/EEA and the UK – eighth update*.⁵

This advises that:

- The use of masks should be prioritised for HCWs.
- The use of masks by HCWs not taking care of COVID-19 patients for personal protection and source control, is a measure for reducing transmission within healthcare settings.
- Any strategy around the general use of masks needs to take into account the availability of medical masks, the extent of community transmission and other measures in place.
- Social distancing, hand hygiene, respiratory etiquette and use of masks when sick should be emphasised in healthcare settings.
- Appropriate use of masks in the community (not specifically healthcare) is key for the effectiveness of the measure and can be improved through education campaigns.

Centers for Disease Control and Prevention

The Centers for Disease Control and Prevention (CDC) in the US recommends using cloth face covers in all public areas where social distancing is not possible, but does not specify whether this includes healthcare settings.⁶

⁴ <https://apps.who.int/iris/handle/10665/331508>

⁵ <https://www.ecdc.europa.eu/en/publications-data/rapid-risk-assessment-coronavirus-disease-2019-covid-19-pandemic-eighth-update>

⁶ <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover.html>

There is no recommendation for general use of masks in healthcare settings other than when dealing with suspected or confirmed cases in their IPC recommendations for healthcare settings.⁷ However, in its guidance for residential care facilities, the universal use of masks for HCWs while in the facility is recommended, even if there are no documented cases of COVID-19 in the facility.⁸

Public Health England

Public Health England (PHE) recommends that masks are worn by HCWs when dealing with suspected and confirmed cases and by suspected or confirmed cases in clinical areas, communal waiting areas and during transportation, if tolerated.⁹

Public Health England's guidance on *COVID-19: infection prevention and control*, updated 7 April, includes an update on PPE for all patient encounters (not just patients with suspected or confirmed COVID-19) at a time when there is sustained community transmission of COVID-19. This specifies that a fluid-resistant (Type IIR) surgical mask is required for direct patient care when assessing an individual that is not currently a suspected or confirmed case (within 2 metres), and a filtering face piece respirator is required for performing an aerosol generating procedure on an individual that is not currently a possible or confirmed case.¹⁰

Public Health England's recommendations for PPE specifies that masks should be worn whenever a HCW enters an inpatient area (for example, ward) containing suspected or confirmed COVID-19 cases, whether or not involved in direct patient care.¹¹ When working in inpatient areas with no identified possible or confirmed cases, use of PPE should be risk assessed and may be indicated in certain inpatient areas dependent on intensity of COVID-19 transmission in the local context and the nature of clinical care undertaken. It is also recommended that masks are worn during inpatient care provided to any individuals in the identified extremely vulnerable group who are shielding.

⁷ <https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html>

⁸ <https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/prevent-spread-in-long-term-care-facilities.html>

⁹ <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/reducing-the-risk-of-transmission-of-covid-19-in-the-hospital-setting>

¹⁰ [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/877603/T4 Additional considerations of COVID-19 poster.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/877603/T4_Additional_considerations_of_COVID-19_poster.pdf)

¹¹ <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/covid-19-personal-protective-equipment-ppe>

and

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/877728/T1 Recommended PPE for healthcare workers by secondary care clinical context poster.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/877728/T1_Recommended_PPE_for_healthcare_workers_by_secondary_care_clinical_context_poster.pdf)

Health Protection Scotland

A rapid review conducted by Health Protection Scotland (HPS) published on 3 April, assessing the IPC measures for the prevention and management of COVID-19 in healthcare settings, concluded that masks should be worn in all clinical settings (that is to say, general wards), and when entering cohort areas when no patient contact is anticipated.¹²

However, the HPS is currently deferring to the Public Health England guidance, summarised above.

Public Health Agency (PHA) of Northern Ireland

No guidance on masks available.

Ministry of Health New Zealand

In its 7 April guidelines for the use of PPE for frontline healthcare workers, the Ministry of Health New Zealand states that:

Not every health care worker needs to wear a mask or PPE for every interaction they have with a patient or client – this includes both health care workers who are working in hospitals and those working in the community.¹³

The guidelines also emphasise the need to reinforce adherence to standard precautions to protect HCWs regardless of whether they need to wear PPE and the importance of the correct use of PPE in the appropriate context:

Wearing a mask for long periods may lead to contamination of the wearer's face if they rub their nose or eyes after their hand has touched the mask.

Australia (New South Wales Government)

The New South Wales Government, Australia, has made recommendations on the use of masks during patient care and in general by HCW, as follows:

Use level 2-3 masks in all procedures where moderate to heavy amounts of fluid, spray and/or droplets are produced (including surgery) and level 1 masks for procedures where low amounts of fluid, spray and/or droplets are

¹² https://hpspubsrepo.blob.core.windows.net/hps-website/nss/2985/documents/1_covid-19-rapid-review-ipc-for-covid-19.pdf

¹³ <https://www.health.govt.nz/system/files/documents/pages/covid-19-guidelines-use-ppe-frontline-health-care-workers-7apr20.pdf>

produced, regardless of whether they are treating suspected or confirmed COVID-19.¹⁴

Masks are not to be worn outside of patient rooms (for example, between wards, break room, reception area) and are to be removed and disposed of appropriately when proceeding to care for patients who are not isolated for COVID-19 or prior to leaving the facility.¹⁵

Communicable Disease Network Australian (CDNA)

No specific guidance on the general use of masks available.

Robert Koch Institute, Germany

The Robert Koch Institute (RKI) in Germany recommends that HCWs wear masks depending on the type and extent of exposure, and that patients presenting with respiratory symptoms should be provided with a mask.

General wearing of masks by all staff with direct contact to particularly vulnerable groups of people, outside the direct care of COVID-19 patients, is also recommended. Furthermore, they state that when used for protection in everyday ward work, in outpatient clinics or nursing homes, masks can be reused.¹⁶

In guidance for residential care facilities, the RKI recommends that all personnel wear masks while caring for vulnerable people while in the facility.¹⁷

Center for Health Protection and Department of Health, Hong Kong

In Hong Kong, it is recommended that during 'serious response level' to COVID-19, staff and public members should wear a mask in patient areas and during 'emergency response level' masks should be worn in all areas of a healthcare setting.¹⁸ This recommendation was published on 17 January and last updated on 2 March.

Furthermore, it is recommended that all staff wear a mask while at work in a residential care facility according to *Guidelines for Residential Care Homes for the*

¹⁴ http://www.cec.health.nsw.gov.au/_data/assets/pdf_file/0007/572875/Recommended-Guidance-on-Mask-Use-in-NSW.pdf

¹⁵ http://www.cec.health.nsw.gov.au/_data/assets/pdf_file/0010/575362/COVID-19-Infection-Prevention-and-Control-Advice-for-Health-Workers-V2.pdf

¹⁶ https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Hygiene.html

¹⁷ https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Altenpflegeheime.html and <https://www.der-paritaetische.de/fachinfos/migration-und-flucht/empfehlungen-zu-covid-19-coronavirus/>

¹⁸ https://www.chp.gov.hk/files/pdf/ic_advice_for_nid_in_healthcare_setting.pdf

Elderly or Persons with Disabilities for the Prevention of Coronavirus disease (COVID-19), last updated 31 March 2020.¹⁹

Government of Canada

The Government of Canada recommends that HCWs should use a risk assessment approach before and during each patient interaction to evaluate the likelihood of exposure and determine whether or not a mask is appropriate in advice last updated on 6 April.²⁰

No specific guidance is available on the general use of masks.

Norwegian Institute of Public Health

No specific guidance on general use of masks.

Ministry for Health Singapore

No specific guidance on general use of masks.

Conclusion

This review was undertaken on 9 April 2020 to inform a decision on whether healthcare workers (HCWs) should move to universal mask wearing. The wearing of masks by HCWs who are not in contact with suspected or confirmed cases has been identified as a measure for reducing transmission of COVID-19 within healthcare settings, when used in conjunction with standard IPC measures and, rapid identification of cases and provision of masks for suspected and confirmed cases.

Hong Kong is the only country identified from those included in this rapid reviewed, that has recommended general mask wearing by HCWs in all areas of a healthcare setting, in the context of COVID-19. Public Health England has recommended that a mask is worn for all direct patient care when assessing an individual that is not currently a suspected or confirmed case, where there is sustained transmission in a setting. Furthermore, the CDC and the RKI in Germany suggest that HCWs consider wearing a mask at all times when in residential care facilities due to the vulnerability of this patient group to COVID-19. Public Health England and the RKI, Germany recommend the use of masks for all inpatient care of patients who are particularly vulnerable to COVID-19.

¹⁹ https://www.chp.gov.hk/files/pdf/advice_to_rche_rchd_on_prevention_of_nid_eng.pdf

²⁰ <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals.html#i>

Other countries and organisations included in this review have given no specific guidance on general mask wearing; however, Australia specifies that masks should not be worn between wards, in the break room or in the reception area and New Zealand states that not every HCW needs PPE for every interaction.

There is general agreement across guidelines that masks should be prioritised for HCWs in contact with suspected or confirmed cases of COVID-19 and undertaking aerosol generating procedures in other contexts. The importance of the provision of masks for anyone (staff or patient) who develops respiratory symptoms regardless of suspected COVID-19 is prioritised in guidance over implementation of general wearing of masks by HCWs. The guidance reviewed generally included recommendations to undertake risk assessment of the need for PPE, including masks, when working in inpatient areas with no identified suspected or confirmed cases. Some guidance suggested that the use of masks may be indicated in certain inpatient areas dependent on intensity of COVID-19 transmission in the local context and the nature of clinical care undertaken.

The ECDC advises that if the use of masks by HCWs in general is to be implemented, the decision should take into account the availability of medical masks, the extent of community transmission and other measures in place.

The findings from this rapid review were accurate as of 9 April 2020 at 8am GMT; however, it is important to note that the guidance identified above may change as the situation and response to COVID-19 evolves.

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