NHS National Services Scotland

Standard Infection Control Precautions: Respiratory and Cough hygiene Literature Review

Evidence Tables

Version 1.0

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Antimicrobial Resistance & Healthcare Associated Infection (ARHAI) Scotland
An NHS Scotland Assure Service

Version history

This literature review will be updated in real time if any significant changes are found in the professional literature or from national guidance or policy.

Version	Date	Summary of changes
1.0	March 2026	First version to accompany version 4.0 of the literature review.

Contents

Introduction

All studies which are critically appraised as part of the literature review are assigned a grade of evidence based on the SIGN 50 methodology grading system (SIGN, 2019), which allows scientific studies to be assessed for quality using a number of reviewing forms (available from the SIGN website). Guidelines are appraised and graded using the AGREE II grading system (details available from the AGREE website).

Main conclusions from evidence sources (studies and guidance) are summarised along with a brief description of the methods and limitations within evidence table entries. Evidence sources with sufficient quality, which specifically answer a defined research question, are grouped together to enable the formation of an overall assessment regarding the evidence base.

Evidence grading

The following grades were given to the papers included in this evidence table:

SIGN 50 Evidence Levels

Grade	Description
1++	High quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias
1+	Well conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias
1-	Meta analyses, systematic reviews of RCTs, or RCTs with a high risk of bias
2++	High quality systematic reviews of case-control or cohort studies. High quality case-control or cohort studies with a very low risk of confounding, bias, or chance and a high probability that the relationship is causal
2+	Well conducted case control or cohort studies with a low risk of confounding, bias, or chance and a moderate probability that the relationship is causal

Grade	Description
2-	Case control or cohort studies with a high risk of confounding, bias, or chance and a significant risk that the relationship is not causal
3	Non-analytic studies, for example case reports, case series
4	Expert opinion

AGREE II Evidence Levels

Grade	Description
AGREE 'Recommend'	This indicates that the guideline is of high overall quality and can be considered for use in practice without modifications.
AGREE 'Recommend with modifications'	This indicates that the guideline is of moderate overall quality. This could be due to insufficient or lacking information in the guideline for some items. If modifications are made, the guideline could still be considered for use in practice when no other guidelines on the same topic are available.
AGREE 'Do not Recommend'	This indicates that the guideline is of low overall quality and has serious shortcomings. Therefore, it should not be recommended for use in practice.

Research questions for evidence tables

Question 1: What is meant by cough etiquette and respiratory hygiene?

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Rathore MH, Jackson MA, and Committee on Infectious Diseases. Infection Prevention and Control in Pediatric Ambulatory Settings. Pediatrics. 2017;140 (5): e20172857.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Ambulatory care facilities

Country: USA

Methods: No methods have been provided of how evidence was collated or assessed, although the following statement is provided; 'Policy statements from the American Academy of Pediatrics benefit from expertise and resources of liaisons and internal (AAP) and external reviewers'. Based on this statement, it appears that expert opinion has informed the statement. The authors also state that this policy statement should not serve as a standard of medical care.

Assessment of evidence

Main findings:

This policy statement defines cough etiquette and respiratory hygiene as an integral component of Standard Precautions which are used to prevent the transmission of respiratory tract infections such as influenza.

Limitations:

- Lack of systematic methods detailed for evidence synthesis.
- Guidance applicable to ambulatory settings and may not be generalisable to other health and care settings.
- The quality of the evidence base is considered poor (two sources cited: a qualitative piece of evidence from YouTube and expert opinion from the CDC).

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
National Health and Medical Research Council (NHMRC). Australian Guidelines for the Prevention and Control of Infection in Healthcare. 2019. v.11.23. Updated 28 February 2024.	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Last accessed 21/08/2025.					

Assessment of evidence

Country: Australia

Setting: Acute health care settings

Methods: The main target audience of the guidance is healthcare workers working within acute health and care settings, but authors state that certain sections can also be beneficial for other health and care settings. The evidence base is formed of an amalgamation of "international IPC guidelines, systematic literature reviews, horizon scans, work on HAI prevention from the Australian Commission on Safety and Quality in Health Care (ACSQHC), national discipline-based infection control guidelines, and Australian Standards". Authors outline a specific process for development and grading of recommendations however, there were no formal recommendations presented for cough etiquette and respiratory hygiene. Cough etiquette and respiratory hygiene only appears as part of a bundled approach with other standard infection control measures with no citations provided.

Main findings:

This guidance states that cough etiquette and respiratory hygiene is a set of measures that are used to reduce the transmission of respiratory pathogens that are spread via the droplet or airborne routes and these measures should be applied as part of standard precautions at all times, in acute healthcare settings.

Limitations:

- No references provided for this statement.
- No systematic literature review conducted for cough etiquette and no formal recommendations made.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Clinical management of COVID-19: living guideline. Geneva: World Health Organization; 18 August, 2023. (WHO/2019-nCoV/clinical/2023.2) Last accessed 07/01/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Health facilities managing COVID-19 patients

Country: International

Methods: The development group for this guidance had global representation. The recommendations were formulated using the GRADE approach and expert opinion. Systematic methods for evidence synthesis were not consistently used for all sections of this document and external groups were used to conduct these processes. There is lack of transparency regarding development of recommendations. In addition, there were no recommendations made for 'cough etiquette' hence the AGREE tool was not used.

Assessment of evidence

Main findings:

This guidance states that standard precautions which should be applied at all times for all patients, should include the practice of respiratory hygiene, which is applied based on risk assessment.

Limitations:

- Specific to Covid-19 and therefore may lack wider applicability.
- The approach towards prevention and control of Covid-19 has evolved over time and guidance may be updated in future versions.
- There appears to be no systematic review or meta-analysis conducted to support this information nor references cited.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
American Academy of Ophthalmology INFORMATION STATEMENT Infection Prevention in Eye Care Services and Operating Areas. 2012. Last accessed 25/10/2024.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Eye Care Services and Operating Areas

Country: USA

Methods: A list of references was provided at the beginning of the document which includes federal regulations (OSHA, FDA, EPA), CDC guidelines, current research and literature, recommendations, and standards from professional organisations (AORN, APIC, NIOSH) although there is no indication of any systematic methods on how they were used for evidence synthesis. No citations were provided for the respiratory hygiene and cough etiquette section.

Main findings:

This guidance states that respiratory hygiene and cough etiquette must be applied as part of standard precautions in eye care services and operating areas. Standard precautions are defined as those precautions that are used for all patients regardless of their infection status. Guidance states that the cough etiquette and respiratory hygiene protocol must be applied to all patients and their visitors with signs of respiratory illness in any setting in which healthcare is delivered to prevent the transmission of undiagnosed transmissible infections of the respiratory tract, as well as all healthcare workers, to prevent their respiratory secretions from infecting patients. Cough etiquette and respiratory hygiene is discussed as part of a bundled approach.

Limitations:

- No evidence of systematic methods having been used to produce the guidance document.
- Guidance applicable only to eye care services and may not be generalisable to other healthcare settings.
- Guidance is more than 10 years old.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee. Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. 2007 (updated 2024). Last accessed 25/10/2024.	Guidance	Level 4	N/A	N/A	N/A
Assessment of evidence					
Setting: IPC in healthcare settings **Country:** USA					

Assessment of evidence

Methods: The document a list of members of the guidance development group and their qualifications. Each section of the document contains information on an IPC topic along with recommendations, although it is unclear how the evidence cited contributed to the grade of evidence. There is also no evidence of a systematic literature review being conducted or information on the quality of individual studies.

Main findings:

This CDC guidance document states that cough etiquette and respiratory hygiene is a source containment or control method which includes a package of measures that aim to reduce transmission of respiratory pathogens that are spread via droplet and airborne routes.

'Respiratory Hygiene and cough Etiquette. A combination of measures designed to minimize the transmission of respiratory pathogens via droplet or airborne routes in healthcare settings.'

'Respiratory Hygiene and cough Etiquette that encourages individuals to "cover your cough" and/or wear a mask is a source control measure.'

'Respiratory hygiene and cough etiquette (source containment of infectious respiratory secretions in symptomatic patients, beginning at initial point of encounter e.g., triage and reception areas in emergency departments and physician offices)'.

Limitations:

- Lack of systematic methods to synthesise evidence.
- No supportive citations.
- Majority of references cited for the recommendations were either pre-2000, narrative reviews or have since expired or been updated and thus deemed to be of poor quality.
- References used were also not limited to healthcare settings but from settings such as universities and military camps.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Basic Infection Control And Prevention Plan for Outpatient Oncology Settings 2011. Last accessed 17/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Outpatient oncology settings

Country: USA

Methods: There was no specific guidance development method provided. Authors explained that this document has been developed to serve as a model for a basic infection control and prevention plan. Any advice given within the 'model' are reported to be based on CDC's evidence-based guidelines and guidelines from professional societies, for example, oncology nursing society.

Main findings:

This document indicates that cough etiquette and respiratory hygiene are measures to prevent transmission of respiratory infections and apply to all persons within the facility (outpatient oncology settings) with signs and symptoms of respiratory disease.

Limitations:

Assessment of evidence
• No methodology outlined. • Narrative guidance, with no formal recommendations. • Poorly linked to underlying cited evidence.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Summary of Infection Prevention Practices in Dental Settings 2016. Last accessed 17/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence
Setting: Dental settings **Country:** USA **Main findings:** This document indicates that respiratory hygiene and cough etiquette are measures designed to limit transmission of respiratory pathogens from undiagnosed and symptomatic patients or dental health care professionals via the air or respiratory droplets. Relevant

Assessment of evidence

content refers to the CDC's 2007 isolation guidelines for further information and lists two further CDC guidance as references, both of which have since been removed or updated. No methodology has been provided.

Limitations:

- No methodology detailed.
- Risk of duplicating information, as frequently cites 2007 isolation guidelines which have already been captured by this review.
- Most sources cited have been removed or updated
- Recommendations are not graded.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Infection Prevention and Control Strategies for Seasonal Influenza in Healthcare Settings 2021. Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Healthcare settings ("acute-care hospitals; long-term care facilities, such as nursing homes and skilled nursing facilities; physicians' offices; urgent-care centers, outpatient clinics; and home healthcare")

Country: USA

Main findings:

This CDC expert opinion guidance (SIGN50 level 4) aims to emphasize the importance of influenza IPC strategies for all healthcare workers in healthcare settings. This guidance indicates that respiratory hygiene and cough etiquette are measures that minimise exposures of respiratory pathogens between anyone in healthcare settings. Methodology for guidance development was not provided, nor was the evidence used to inform the guidance provided.

Limitations:

- No methodology.
- No supportive evidence provided.
- Pathogen-specific guidance, but same content as other CDC guidance (risk of duplicating information).

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Aide memoire: Standard precautions in health care	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
2022. Last accessed: 18/02/2025.					

Assessment of evidence

Setting: Healthcare settings

Country: International

Main findings:

This aide-memoire published by the WHO indicates that respiratory hygiene and cough etiquette are standard precautions, basic IPC measures which should be applied during the care of all patients, at all times in all settings that intend to reduce transmission of pathogens from recognised and unrecognised sources and protect healthcare workers and patients.

Limitations:

- No methodology for guidance development is provided.
- It is not reported which document(s) this aide memoire provides a summary of.
- A single reference is associated with the information on cough etiquette (it has already been appraised separately).
- Likely to duplicate other information in other WHO documents included for this research question

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
European Centre for Disease Prevention and Control (ECDC). Protect yourself against flu: Learn more about preventive measures 2024 (last updated). Last accessed: 19/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Not reported, appears to apply to all settings (healthcare and community)

Country: EU/EEA region

Main findings:

The evidence base for this guidance is reported to be based on “scientific studies and public health expertise”. Despite not being explicitly reported, this guidance appears to be for the general public and is not restricted to health and care settings, nevertheless included guidance appears to be transferable to the UK and healthcare settings.

This guidance indicates that respiratory hygiene and cough etiquette prevent others from being exposed to potentially infectious nasal and oral discharge.

Limitations:

- No guidance development methodology outlined.

Assessment of evidence
• It is unclear which references cited are associated specifically with the content relevant to this review. • Pathogen-specific guidance thus may lack generalisability. • Not healthcare setting specific as discusses management of flu at home and in the community.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Public Health Agency of Canada (PHAC). Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Healthcare Settings 2016 (last updated). Last accessed 20/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence
Setting: Healthcare settings (to be used by “infection prevention and control professionals and all other healthcare providers”) **Country:** Canada

Assessment of evidence

Methodology:

- A thorough literature search from the year 1999 was conducted, but details of this search, including systematic methods if any, are only available on request thus this document was graded SIGN50 level 4.
- Recommendations were graded according to their strength of evidence and/or "predictive power of the study designs from which that data were obtained" (domains listed are "strength of study design, quality of study, number of studies, consistency of results and directness of evidence"). Content relevant to this research question was not in the form of recommendations.
- Evidence gaps were stated to be supplemented by expert opinion. Authors report that consensus was reached for all content included. Following its development, the guidance was subject to external stakeholder review. There is a statement that guidelines should be updated to reflect changes in the evidence.

Main findings:

This federal guideline aims to "provide a framework for developing policies and procedures for routine practices and additional precautions in healthcare settings". This guideline indicates that respiratory hygiene bundles should be used by those with symptoms of respiratory infection as a form of source control to minimise the transmission of respiratory pathogens.

Limitations:

- Most cited references are not relevant for inclusion in this review. Primary studies address efficacy of surgical masks or respiratory protective equipment, were published pre-2000 or are not relevant. Two guidance sources are cited, one of which is from PHAC and has less relevant content for this topic than this resource, and the other is already captured (WHO, 2007).
- Search methods only available on request.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Public Health Agency Canada (PHAC). Prevention and Control of Influenza during a Pandemic for All Healthcare Settings. 2021 (last updated). Last accessed 20/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: All healthcare settings (including existing and temporary healthcare settings).

Country: Canada

Methodology:

- The annex recommendations are reported to be informed by "a synthesis of recent literature reviews related to influenza transmission; published PHAC documents […] and experience with the pandemic H1N1 influenza virus outbreak in Canada in the spring of 2009."
- PHAC members and a multidisciplinary working group were involved in development of the annex and the full guidance is outlined to be endorsed by "the Public Health Network Council".
- The guidance is stated to be subject to review based on emerging evidence.

Assessment of evidence

Main findings:

This guidance document is Annex F of “Prevention and control for health care settings: Canadian Pandemic Influenza Preparedness: Planning Guidance for the Health Sector” on the PHAC website. The guidance aims to “provide infection prevention and control (IPC) and occupational health (OH) guidance for the planning and management of pandemic influenza for all healthcare organisations,” This guidance indicates that respiratory hygiene is a bundle of measures aiming to minimise transmission of respiratory pathogens via the airborne or droplet route.

Limitations:

- One supportive reference is provided, which has been superseded. Its update is captured in the evidence base for this review.
- Pathogen- and pandemic-specific guidance thus may lack generalisability to other pathogens and usual clinical practice.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
European Centre for Disease Prevention and Control (ECDC). Infection prevention and control and preparedness for COVID-19 in healthcare settings 2021.	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Last accessed 18/02/2025.					

Assessment of evidence

Setting: Healthcare settings (including long-term care facilities)

Country: EU/EEA region and the UK

Main findings:

This guidance document outlines IPC and preparedness measures for management of possible and confirmed COVID-19 in healthcare settings (and long-term care facilities) The target audience is described as “national public health agencies, hospital administrators, [long term care facility] administrators and healthcare workers”. This guidance defines hand hygiene and respiratory hygiene as standard precautions but does not offer a rationale or definition of standard precautions.

Limitations:

- No methodology provided for update.
- Evidence poorly linked to text (no in-text citations).
- Pathogen-specific guidance thus may lack generalisability and/or duplicate other sources.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health (Republic of Ireland) NCEC National Clinical Guideline No. 30 Infection Prevention 2023 (last updated). Last accessed: 19/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Health and social care settings

Country: Republic of Ireland

Main Findings:

This guidance applies to “all health and social care workers” but is reported to be “particularly relevant to Infection Prevention and Control (IPC) Practitioners”.

This guidance lists respiratory hygiene, cough etiquette (and hand hygiene) as standard precautions; basic IPC measures that “are applied to everyone, regardless of their perceived or confirmed infectious status” and act to minimise transmission of microorganisms that spread via the droplet and aerosol route.

Limitations:

- No in-text citations, so it is unclear which cited reference sources were used to inform relevant content.

Assessment of evidence

- No detail regarding guidance development process provided.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Clinical care of severe acute respiratory infections – Tool kit 2022 (last updated). Last accessed 19/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Hospitals

Country: Low- and middle-income countries

Main findings:

This toolkit aims to provide a practical guide for tools “used to care for patients with respiratory conditions from hospital entry to hospital discharge”. The guidance is said to be applicable to “clinicians working with adult and paediatric patients with severe forms of acute respiratory infection […] in low- and middle-income countries” during “emerging respiratory viral epidemics”.

Assessment of evidence

This guidance document lists:

- respiratory hygiene as a standard precaution. “Standard precautions apply to all patients regardless of their diagnosis or presumed infection status.”
- standard and droplet precautions as “the main preventative measures”.

No definition is provided for standard precautions, but measures such as respiratory hygiene are considered “the main preventative measures” for IPC.

Limitations:

- No methodology.
- Guidance has potential to lack generalisability as it is targeted towards low- and middle- income countries and active epidemics from emerging viral respiratory pathogens, however, content is very similar to other guidance included.
- Unclear whether content has been updated for relevant sections or represents guidance from past iterations.
- Evidence underlying relevant content is unclear.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Jensen PA, Lambert LA, Iademarco MF, et al. Guidelines for preventing the transmission of Mycobacterium	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
tuberculosis in health-care settings, 2005. Centers for Disease Control and Prevention (CDC). MMWR Recomm Rep. 2005;54(RR-17):1-141. Last accessed 21/02/2025.					

Assessment of evidence

Settings: Health-care settings (including laboratories, outpatient, and non-traditional facility-based settings)

Country: USA

Methods: Evidence base was made using primary references, expert consultation from experts in the field and review articles.

Main findings:

This is a guidance document providing measures for the management of TB patients in all healthcare settings. Guidance states that cough etiquette and respiratory hygiene are the procedures or measures through which suspected or confirmed infectious TB patients can reduce environmental spread of infectious particles.

Limitations:

- No clear methodology, no evidence of a systematic literature review been conducted.

Assessment of evidence
• Citations in the document are from pre-2000. • No grading of strength of evidence. • Guidance approximately 20 years old. • May have limited applicability to settings out with the USA. • Pathogen-specific guidance.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of health and social care (DHSC). Pandemic (H1N1) 2009 influenza: a summary of guidance for infection control in healthcare settings 2009. Last accessed 03/03/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Settings: Health-care settings

Country: UK

Methods: There is no evidence of any systematic methods used for guidance development. A limited reference list is provided but there are no references linked to respiratory hygiene, hence it can only be graded as expert opinion.

Main findings:

This guidance document provides advice to healthcare workers working with patients with suspected or confirmed influenza virus (H1N1) infection and measures for infection prevention and control to reduce further transmission during pandemics. Guidance states that as part of pandemic planning, encouraging the use of good respiratory hygiene measures by patients, staff and visitors can reduce the potential transmission of influenza virus.

Limitations:

- No recent updates available (last version is from 2009).
- No methodology detailed.
- No references cited for relevant content.
- Pathogen specific guidance.
- Pandemic specific guidance, may not be generalisable to other scenarios.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Infection prevention and control in the context of COVID-19: a guideline. (WHO/2019-nCoV/IPC/guideline/2023.4) Geneva: World Health Organization; 2023. Last accessed 27/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Country: International

Setting: Healthcare and community settings

Methods:

Recommendations for infection prevention and control practices for COVID-19 are set out within the context of healthcare and community settings; this is the 7th update of the document. The target audience for this guidance is made up of public health professionals, IPC

Assessment of evidence

professionals, wider health and care workers, policy makers and managers. A rapid review methodological approach was used due to time constraints; therefore, the AGREE tool for appraisal was not appropriate to use in this case.

Main findings:

Respiratory hygiene is listed as a key element of Standard infection prevention and control precautions which should be used by all health and care workers at all times as part of caring for all patients to prevent transmission of micro-organisms. The community care definition of cough etiquette states that in the event of individuals with COVID-19 not being able to tolerate a medical mask then respiratory hygiene practices should be applied. This is described as “coughing or sneezing into a bent elbow or tissue and then disposing of the tissue, followed by hand hygiene”.

Limitations:

- This guidance was produced in response to COVID-19 using a rapid review methodology and therefore it is unlikely that the approach was robust as no systematic review was conducted. In addition, it is possible that guidance may be updated in the near future due to the changing nature of tackling COVID-19.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Guidelines on tuberculosis infection prevention and control. Geneva. World Health Organization;	Guidelines	AGREE II: Recommend with modifications	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
(WHO/CDS/TB/2019 .1) 2019. Last accessed 20/02/2025.					

Assessment of evidence

Country: International

Setting: Healthcare settings and other groups outside of the healthcare system

Methods: These guidelines, outline interventions and recommendations to reduce the risk of *M. tuberculosis* transmission within both healthcare and non-healthcare settings; they are aimed to inform national level and local level IPC policies. The target audience includes national and regional policy makers, IPC services and inpatient and outpatient facilities. The evidence base for these guidelines was produced using a systematic review process, a WHO steering group, Guideline Development Group and an External Review Group were also established during the process. Although the methods for collecting the data were systematic, the literature identified as evidence was limited and of a low quality. Animal studies were not excluded from the results and there was a lack of literature comparing the different materials used to cover the mouth during coughing and sneezing.

Main findings:

These guidelines state that respiratory hygiene practices, with respect to tuberculosis, are in place to reduce the spreading of airborne respiratory secretions where *M. tuberculosis* bacilli may be present. This can be achieved through covering the mouth and nose during breathing, coughing, or sneezing. (Strong recommendation based on low certainty in the estimates of effects)

Covering the mouth and nose can be achieved by wearing a surgical or cloth mask or by covering the mouth with tissues, a sleeve or a flexed elbow or hand; this practice should be followed by hand hygiene. Authors state that “data for comparing the effectiveness of respiratory hygiene manoeuvres are scarce, especially data on humans.”

Assessment of evidence

Limitations:

- Five relevant studies were identified within the systematic review process. However, four of the studies were before and after studies that used bundled interventions. The fifth study was a prospective cohort study using an animal model which measured the effect of surgical masks used by MDR-TB patients on transmission to guinea-pigs exposed to ward air.
- A strong recommendation for cough etiquette was made within the guidelines based on low certainty in the estimates of effects.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Infection prevention and control of epidemic – and pandemic-prone acute respiratory infections in health care. Geneva. World Health Organization. 2014. Last accessed 20/02/2025.	Guidelines	AGREE II: Recommend with modifications	N/A	N/A	N/A

Assessment of evidence

Country: International

Setting: healthcare settings

Methods: These guidelines detail IPC measures for containing respiratory infections. The target audience is primarily IPC professionals and members of IPC teams, healthcare policy makers and health care workers. The evidence base is reported to have been formed through field evaluation, literature review and practical experience and lessons learnt from pandemic Influenza A (H1N1) 2009. A systematic review process was followed, and the quality of evidence was assessed using the GRADE approach.

Main findings:

'The practice of covering the mouth and nose during coughing or sneezing (using a medical mask, cloth mask, tissues, a sleeve or flexed elbow), followed by hand hygiene, to reduce the dispersal of respiratory secretions that may contain infectious particles.'

Limitations:

- These guidelines were published in 2014 (11 years ago) before the COVID-19 pandemic and so the recommendations are based on evidence that may not be relevant today.
- Out-dated as per planned update, should have been updated in 2016.
- No explanations were given for the strength of evidence rating with each recommendation.

Question 2: What are the effective components of cough etiquette and respiratory hygiene?

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Wood ME, Stockwell RE, Johnson GR, et al. Face Masks and Cough Etiquette Reduce the Cough Aerosol Concentration of *Pseudomonas aeruginosa* in People with Cystic Fibrosis. Am J Respir Crit Care Med. 2018; 197(3):348-355. Doi:10.1164/rccm.201707-1457OC	Observational study	Level 3	Amount of reduction in *P. aeruginosa* aerosols when talking and coughing with surgical mask, N95 mask, and cough etiquette Vs. Uncovered coughing (reference manoeuvre)	surgical mask, N95 mask, and cough etiquette Control: uncovered cough and uncovered whilst talking	Quantitative sputum concentration and aerosol colony-forming units of *P. aeruginosa* Mask comfort levels

Assessment of evidence

Study period: 2015

Setting: An Adult Cystic Fibrosis Centre in Australia

Methodology:

Twenty-five adults (15 male and 10 female) were recruited for the study. All participants were CF (Cystic Fibrosis) patients aged 18 years or older and had chronic *P. aeruginosa* infection (determined by the modified Leeds criteria). Patients were excluded if they were pregnant, had pneumothorax, cough syncope or had a recent episode of coughing up blood. Patient consent was taken (written and informed).

Participants' usual demographics (age, gender, BMI) and clinical information (IV antibiotic use) was recorded. Sample calculation was done, and statistical associations made using t-tests and Pearson's correlation tests.

Aerosol sampling was done via a validated tunnel system known as the Andersen Cascade Impactor kept at 2 meters from each patient, as stated in the IPC guidelines by the CF foundation. Viability was checked via sputum and aerosol bacterial cultures and identified by mass spectrometry (MALD-TOF) and genotyping (assays). Other outcome measures included mask comfort levels (not relevant for this review).

Aerosol sampling protocol involved patients performing six talking and coughing manoeuvres in various combinations. Reduction in aerosol *P. aeruginosa* load was measured with patients wearing either face masks (surgical and N95) or performing cough etiquette (hand covering the mouth when coughing). Uncovered coughing was used as a reference manoeuvre. Trained personnel sized and applied masks. To reduce bias, manoeuvres were performed in a randomised manner apart from the cough etiquette manoeuvre that was always the final manoeuvre for logistical reasons as stated by the authors.

Cough etiquette manoeuvre: involved the participant using their own usual technique to cover their mouth while wearing a glove to reduce spread and dispersal of microbes from the skin.

Prior to performing the manoeuvres, participants completed tidal breathing for 2 minutes to wash residual air out and then 5 minutes of the respective manoeuvre, followed by tidal breathing again. Cough numbers were similar for each manoeuvre performed.

Assessment of evidence

Main findings:

Twenty-four sputum samples contained *P. aeruginosa* at mean concentrations of 6.3 x 10^7 cfu/ml and genotyping found approximately twelve different strains.

The uncovered cough (reference manoeuvre) produced viable *P. aeruginosa* in 76% (19/25) samples at the specified distance of 2 meters. Among the demographic and clinical parameters examined, a statistically significant relationship was only found between total aerosol load and the *P. aeruginosa* sputum counts (P = 0.01).

Authors stated that, in 71% of aerosol samples produced in uncovered cough, the mean percentage of culturable particles collected by the Anderson cascade impactor were within the droplet nuclei (<5µm) range.

In the 19 participants that had viable *P. aeruginosa* samples in uncovered coughing, only 2 produced aerosol cultures that were positive for *P. aeruginosa* while donning a surgical mask and only 4 had positive culture while wearing N95 masks. In comparison, up to 13 participants (68% of samples) produced *P. aeruginosa* positive aerosols while performing the cough etiquette manoeuvre.

14/19 participants that produced high viable aerosol CFUs (CFUs, >10) in uncovered cough demonstrated a reduction of the *P. aeruginosa* aerosol concentration (log-transformed CFUs) in all three manoeuvres tested. Out of the three manoeuvres tested, surgical mask (0.11 (CI 0.00–0.32) P < 0.001) and N95 mask (0.13 (CI 0.00–0.30) P < 0.001) demonstrated significantly more effective reduction in aerosols compared to the cough etiquette manoeuvre (0.90 (CI 0.50–1.30) P < 0.001).

None of the talking manoeuvres produced viable aerosols/CFUs in majority of participants (23/25).

This study suggests that practicing cough etiquette (covering mouth with hand) and wearing a surgical mask or a N95 respirator significantly reduced viable *P. aeruginosa* aerosol dispersal in comparison to uncovered coughing. The cough etiquette manoeuvre provided the least aerosol reduction (53%), compared to surgical mask and N95 respirators that provided 94% aerosol reduction. However, the study has multiple limitations as detailed below.

Limitations:

- There was no standardised protocol for performing cough etiquette, with all participants performing their usual techniques making comparisons difficult and prone to bias.

Assessment of evidence

- Wearing of a glove does not mimic true cough etiquette which is realistically done with an ungloved hand.
- Study results not applicable for distances less than 2 meters.
- Study results may not be generalisable to patient settings and patient populations out with the CF centre or to CF paediatric populations.
- Exact infective potential or infective load of *P. aeruginosa* is not known, and therefore no estimation of the extent of infectious risk for an individual after exposure to cough aerosols can be made.
- Mask fit, tolerability and mask wearing duration may differ across clinical settings and different individuals.
- Sample size was small, although a power calculation was performed, the results of which calculated 21 patients were required to demonstrate a 40% reduction in the presence of absence of *P. aeruginosa* with 80% power.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Rathore MH, Jackson MA, and Committee on Infectious Diseases. Infection Prevention and Control in Pediatric Ambulatory Settings. Pediatrics. 2017; 140(5), e20172857.	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
https://doi.org/10.1542/peds.2017-2857.					

Assessment of evidence

Setting: Ambulatory care facilities

Country: USA

Methods: No methods have been provided of how evidence was collated or assessed, although the following statement is provided; 'Policy statements from the American Academy of Pediatrics benefit from expertise and resources of liaisons and internal (AAP) and external reviewers'. Based on this statement, it appears that expert opinion has informed the statement. The authors also state that this policy statement should not serve as a standard of medical care.

Main findings:

"Visual alerts should be posted that emphasize the importance of (1) covering the nose and mouth when coughing or sneezing, (2) coughing and sneezing into the elbow rather than hand, (3) the appropriate use and disposal of tissues, (4) performing hand hygiene whenever hands have been in contact with respiratory secretions, and (5) maintaining a separation of at least 3 feet in most cases (for patients with cystic fibrosis, the recommended separation is 6 feet) between symptomatic patients and others in common waiting areas, as recommended by the CDC and SHEA."

Limitations:

- Guidance from ambulatory settings, may not be generalisable to other settings.
- No systematic methods visible for evidence synthesis.
- Some references used for the information are pre-2000.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Kiely PM, Lian KY, Napper G et al. Influenza A(H1N1) and infection control guidelines for optometrists. Clinical & experimental optometry. 2009; 92(6): 490–494.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Optometry

Country: Australia

Methods: A narrative guideline from Australia. No information is provided regarding the guidance development process, nor is there evidence of any systematic review been conducted hence it can only be graded as expert opinion. It cites one guideline from 2007 which is from the same Organisation and a narrative expert guideline.

Main findings:

“A patient with a history of travel to an area affected by the virus or who has been in contact with a confirmed case of Influenza A(H1N1) or who presents with an influenza-like illness should be given a surgical mask [P2 (N95)] to wear immediately and moved to a separate room or, if this is not possible, they should be separated from people in the waiting room by at least one metre. These patients should be provided with tissues and asked to use them to cover the nose and mouth when coughing or sneezing and to dispose of them immediately into a hands-free waste receptacle. They should also be asked to wash their hands after contact with respiratory secretions and

Assessment of evidence

contaminated objects or materials and to avoid touching their face. Reinforcement of the need for infection control procedures for patients such as frequent handwashing, appropriate cough, and sneeze etiquette, used tissue disposal and rescheduling of non-urgent appointments can be achieved through signs, posters, and information leaflets in the practice visible to both staff and patients."

Limitations:

- Guidance is from 2009, hence, possibly outdated and no update available.
- Guidance cannot be generalised to settings outwith optometry.
- No details regarding guidance development process.
- No information provided regarding the effectiveness of these strategies.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Zayas G, Chiang MC, Wong E, et al. Effectiveness of cough etiquette maneuvers in disrupting the chain of transmission of infectious respiratory diseases. BMC Public Health. 2013; 13:811.	Observational study	Level 3	Effectiveness of different 'cough etiquette and respiratory hygiene manoeuvres' in blocking aerosols while voluntary coughing	Covering of the nose and mouth with hands while coughing Coughing into sleeve/arm Coughing into a tissue Coughing while wearing a surgical mask	Quantitative measurements of droplet number and size (between 0.1 micron (µm) - 900 µm) Pressure and humidity measurements

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Doi:10.1186/1471-2458-13-811.					

Assessment of evidence

Setting: Heritage Medical Research Centre, Alberta, Canada

Study period: March – May 2010

Methods: This cross-sectional, observational study conducted in Canada aimed to assess the effectiveness of a standard precautionary measure known as 'cough etiquette and respiratory hygiene' in blocking aerosols while coughing. 31 healthy, non-smoking adults aged > 18 years performed various cough etiquette manoeuvres. Participants were excluded if they had taken any medication for respiratory condition in the last 30 days or developed a flu-like illness prior to the study. Environmental conditions in the lab where the study took place were similar to a hospital setting.

All participants did a voluntary cough and performed the following manoeuvres: covering of the nose and mouth with hands while coughing, coughing into sleeve/arm, coughing into a tissue, or coughing while wearing a surgical mask. Droplets released were measured. 'Measurement time per manoeuvre was 10 seconds.' Each participant was told to cough 'three times' during each manoeuvre and it was repeated if effort was unacceptable.

Laser diffraction system was used to measure droplet concentration and size (between 0.1 micron (μm) - 900 μm) with the laser beam being directed from left to right at 17 cm in front of the participant when covering nose and mouth using surgical mask or hands and 5 cm below chin when performing the manoeuvre using a tissue or sleeve/arm (using right-hand only). Laser safety goggles were worn by all participants. Sensors were placed around the face of the participant in areas of interest along with pressure and humidity sensors. There were no statistical comparisons carried out in this study.

Control values/control data used was from a prior study conducted by Zayas et al. which included measurements from an unobstructed cough.

Testing site average features: 'atmospheric pressure = 91.8 ± 1.1 kPa, relative humidity =19.0 ±3.9% RH, and temperature = 22.7 ± 2.0°C'

Assessment of evidence

Main findings:

There were 31 participants (19 males and 12 females) in this study. The average diameter and standard deviation of the droplets that were expelled during coughing manoeuvres were as follows:

'Sleeve = 0.31 ± 0.06 µm

tissue = 0.30 ± 0.02 µm

hands = 0.30 ± 0.04 µm, and

surgical mask = 0.30 ± 0.03 µm.'

After comparison of all the data on the different cough etiquette manoeuvres with respective control values, it was found that majority of the cough etiquette manoeuvres performed could not effectively block the expulsion of cough aerosols into the surrounding environment. A large amount of the particles expelled while performing cough etiquette manoeuvres were lesser than one-micron in size. As no statistical comparisons were made, no definite conclusions can be drawn from the findings.

The only reduction compared to control values was seen in the following two circumstances:

Average rate of droplets detected

0.5 µm < N < 1.0 µm = Surgical mask (3.40E + 05) vs. control (3.58E + 05)

2.5 µm < N < 10 µm = Tissue (1.12E + 05) vs. control (4.18E + 04)

This study suggests that no cough etiquette and respiratory hygiene' manoeuvre (covering of the nose and mouth with hands while coughing, coughing into sleeve/arm, coughing into a tissue, or coughing while wearing a surgical mask) was completely effective in blocking the dispersion of respiratory particles into the surrounding environment as measured by laser diffraction system. Only surgical mask and tissue manoeuvres provided reduction of respiratory particles in comparison to an unobstructed cough. However, the study has multiple limitations as detailed below.

Assessment of evidence

Limitations:

- No statistical comparisons carried out.
- No conclusions can be drawn regarding protectiveness of manoeuvres against infectious particles.
- Lack of clarity regarding what an open bench format is.
- No sample size calculation done.
- As the control results and the study results are from two different studies and two different sets of participants, this raises the question of their comparability.
- Participants were asked to voluntarily elicit a 'real cough' which may not be similar to a real cough in terms of droplet spread.
- Placement of the laser beam to measure droplet spread was different depending on the method of cough etiquette used (placed 17cm in front of the face of participant vs 5cm below the chin); results across methods may not be comparable.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
National Health and Medical Research Council (NHMRC). Australian Guidelines for the Prevention and Control of Infection in Healthcare.	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
2019. v.11.23. Updated 28 February 2024. Last accessed 21/08/2025.					

Assessment of evidence

Country: Australia

Setting: Acute health care settings

Methods: The main target audience of the guidance is healthcare workers working within acute health and care settings, but authors state that certain sections can also be beneficial for other health and care settings. The evidence base is formed of an amalgamation of "international IPC guidelines, systematic literature reviews, horizon scans, work on HAI prevention from the Australian Commission on Safety and Quality in Health Care (ACSQHC), national discipline-based infection control guidelines, and Australian Standards". Authors outline a specific process for development and grading of recommendations however, there were no formal recommendations presented for cough etiquette and respiratory hygiene. Cough etiquette and respiratory hygiene only appears as part of a bundled approach with other standard infection control measures with no citations provided.

Main findings:

"Table 10. Steps in respiratory hygiene and cough etiquette

Anyone with signs and symptoms of a respiratory infection, regardless of the cause, should follow or be instructed to

follow respiratory hygiene and cough etiquette as follows:

- Cover the nose/mouth with disposable single-use tissues when coughing, sneezing, wiping and blowing noses.
- Use tissues to contain respiratory secretions.

Assessment of evidence

- Dispose of tissues in the nearest waste receptacle or bin after use.
- If no tissues are available, cough or sneeze into the inner elbow rather than the hand.
- Practice hand hygiene after contact with respiratory secretions and contaminated objects/materials.
- Keep contaminated hands away from the mucous membranes of the mouth, eyes and nose.
- In healthcare facilities, patients with symptoms of respiratory infections should sit as far away from others as possible. If available, healthcare facilities may place these patients in a separate area while waiting for care."

Limitations:

- No references provided for stated evidence.
- No systematic literature review conducted for cough etiquette, and no formal recommendations made.
- The process of systematic reviews was outsourced with evidence of this provided in another technical document.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Clinical management of COVID-19: living guideline. Geneva: World Health Organization; 18 August, 2023.	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
(WHO/2019-nCoV/clinical/2023.2) Last accessed 07/01/2025.					

Assessment of evidence

Setting: Health facilities managing COVID-19 patients

Country: International

Methods: The development group for this guidance had global representation. The recommendations were formulated using the GRADE approach and expert opinion. Systematic methods for evidence synthesis were not consistently used for all sections of this document and external groups were used to conduct these processes. There is lack of transparency regarding development of recommendations. In addition, there were no recommendations made for 'cough etiquette' hence the AGREE tool was not used.

Main findings:

Screen for early recognition of suspected COVID-19 patients and rapid implementation of source control measures

"Suspected or confirmed COVID-19 patient to wear a medical mask and placement in a separate, well-ventilated area, ideally an isolation room/area if available. Keep at least 1 m distance between patients. Instruct all patients to cover nose and mouth during coughing or sneezing with tissue or flexed elbow, dispose of tissues safely immediately after and perform hand hygiene after contact with respiratory secretions. In areas with COVID-19 community transmission, restrict visitors to those that are essential such as the parents of pediatric patients and caregivers and ask them to wear a mask."

Practices the mother should perform during all infant and childcare

"Perform respiratory hygiene: sneeze or cough into a tissue and immediately dispose of the tissue. Hands should immediately be washed with soap and water or alcohol-based hand rub."

Assessment of evidence

Limitations:

- The approach towards COVID-19 has evolved over time and guidance may update in future versions.
- There appears to be no systematic review or meta-analysis conducted to support this information nor references quoted.
- Guidance limited to COVID-19 and not generalisable to other respiratory infections.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
American Academy of Ophthalmology INFORMATION STATEMENT Infection Prevention in Eye Care Services and Operating Areas. 2012. Last accessed 25/10/2024.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Eye Care Services and Operating Areas

Country: USA

Assessment of evidence

Methods: A list of references was provided at the beginning of the document which includes federal regulations (OSHA, FDA, EPA), CDC guidelines, current research and literature, recommendations, and standards from professional organisations (AORN, APIC, NIOSH) although there is no indication of any systematic methods on how they were used for evidence synthesis. No citations were provided for the respiratory hygiene and cough etiquette section.

Main findings:

'Control measures for patients include: covering the mouth/nose with a tissue when coughing and prompt disposal of used tissues and/or offering a surgical mask to the coughing person when tolerated.'

Limitations:

- No evidence of systematic methods to produce the guidance document.
- Guidance applicable only to eye care services and may not be generalisable to other healthcare settings.
- Guidance is more than 10 years old.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee. Guideline for Isolation	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. 2007 (updated 2024). Last accessed 25/10/2024.					

Assessment of evidence

Setting: IPC in healthcare settings

Country: USA

Methods: The document a list of members of the guidance development group and their qualifications. Each section of the document contains information on an IPC topic along with recommendations, although it is unclear how the evidence cited contributed to the grade of evidence. There is also no evidence of a systematic literature review being conducted or information on the quality of individual studies.

Main findings:

"**Respiratory Hygiene and cough Etiquette.**

The components of respiratory hygiene and cough etiquette are:

1. covering the mouth and nose during coughing and sneezing,

2. using tissues to contain respiratory secretions with prompt disposal into a no-touch receptacle,

Assessment of evidence

3. offering a surgical mask to persons who are coughing to decrease contamination of the surrounding environment, and

4. turning the head away from others and maintaining spatial separation, ideally >3 feet, when coughing"

The elements of Respiratory Hygiene and cough Etiquette include:

1. education of healthcare facility staff, patients, and visitors;

2. posted signs, in language(s) appropriate to the population served, with instructions to patients and accompanying family members or friends;

3. source control measures (e.g., covering the mouth/nose with a tissue when coughing and prompt disposal of used tissues, using surgical masks on the coughing person when tolerated and appropriate);

4. hand hygiene after contact with respiratory secretions; and

5. spatial separation, ideally >3 feet, of persons with respiratory infections in common waiting areas when possible.

Recommendations:

IV.C. Respiratory Hygiene and cough Etiquette

"IV.C.2.b. Provide tissues and no-touch receptacles (e.g., foot-pedal-operated lid or open, plastic-lined waste basket) for disposal of

Tissues" (Category II)

"IV.C.2.c. Provide resources and instructions for performing hand hygiene in or near waiting areas in ambulatory and inpatient settings; provide conveniently located dispensers of alcohol-based hand rubs and, where sinks are available, supplies for handwashing"

(Category IB)

"IV.C.2.d. During periods of increased prevalence of respiratory infections in the community (e.g., as indicated by increased school absenteeism, increased number of patients seeking care for a respiratory infection), offer masks to coughing patients and other symptomatic persons (e.g., persons who accompany ill patients) upon entry into the facility or medical office and encourage them to maintain special separation, ideally a distance of at least 3 feet, from others in common waiting areas." (Category IB)

Assessment of evidence

Limitations:

- Lack of systematic methods to synthesise evidence.
- Majority of references cited for the recommendations were either pre-2000, narrative reviews or have since expired or been updated and thus deemed to be of poor quality.
- References used were also not limited to healthcare settings but from settings such as universities and military camps.
- Unclear how the cited studies contributed to the evidence grading.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Basic Infection Control And Prevention Plan for Outpatient Oncology Settings 2011. Last accessed 17/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Outpatient oncology settings

Country: USA

Methods: There was no specific guidance development method provided. Authors explained that this document has been developed to serve as a model for a basic infection control and prevention plan. Any advice given within the 'model' are reported to be based on CDC's evidence-based guidelines and guidelines from professional societies, for example, oncology nursing society.

Main Findings:

- Signs posted at reception encouraging patients and visitors to self-report symptoms at registration, "practice respiratory hygiene and cough etiquette […] and wear facemask as needed"
- Those with respiratory "signs and symptoms" of infection:
    - "Cover the mouth and nose with a tissue when coughing or sneezing;
    - Dispose of the used tissue in the nearest waste receptacle
    - Perform hand hygiene after contact with respiratory secretions and contaminated objects/materials"
- Where it is known before patient arrives that they are potentially infectious, and visit to the facility is required, patients are to don a surgical mask on arrival, and when waiting in common waiting areas.
- If discovered that patients are potentially infectious after arrival, patients and/or accompanying visitors provided with facemasks if coughing or experiencing other respiratory symptoms.
- For healthcare workers with respiratory infections, who cannot avoid direct patient contact, are to wear a facemask while providing patient care and reinforce hand hygiene.

Limitations:

- No methodology.
- Narrative guidance, with no formal recommendations.

Assessment of evidence
• Poorly linked to underlying evidence. • Underlying evidence is from the USA.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Summary of Infection Prevention Practices in Dental Settings 2016. Last accessed 17/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Dental settings
Country: USA
Main findings:
• Recommendations [for patients with respiratory symptoms]:
  ○ Cover mouth and nose when coughing or sneezing
  ○ “Use and dispose of tissues”

Assessment of evidence

- “Perform hand hygiene after hands have been in contact with respiratory secretions.”

- Recommendations [for patients or other people with respiratory symptoms]:
  - Offer masks on entry to dental setting.

Limitations:

- No methodology.
- Risk of duplicating information, as cites 2007 isolation guidelines already captured.
- Sources cited have been removed, updated, or already captured.
- Recommendations are not graded.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Prevention and Control for Hospitalized MERS Patients 2024. Last accessed 17/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Hospitals and other Healthcare settings.

Country: USA

Main findings:

- Provides examples of respiratory hygiene and cough etiquette instructions for symptomatic patients:
  - “how to use facemasks”
  - “or tissues to cover nose and mouth when coughing or sneezing”
  - “to dispose of tissues and contaminated items in waste receptacles”
  - “and how and when to perform hand hygiene”
- States that, when patients at-risk for MERS-CoV infection are identified, masks be placed over their nose and mouth.

Limitations:

- No methodology.
- No references.
- Pathogen-specific guidance, but same content as other CDC guidance (risk of duplicating information).

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Infection Prevention and Control Strategies for Seasonal Influenza in Healthcare Settings 2021. Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Healthcare settings ("acute-care hospitals; long-term care facilities, such as nursing homes and skilled nursing facilities; physicians' offices; urgent-care centers, outpatient clinics; and home healthcare")

Country: USA

Main findings:

- "Use facemasks or tissues to cover nose and mouth when coughing or sneezing"
- "dispose of contaminated items in waste receptacles"
- "perform hand hygiene" particularly following contact with respiratory secretions.

Assessment of evidence

Limitations:

- No methodology
- No signposting to evidence
- Pathogen-specific guidance, but same content as other CDC guidance (risk of duplicating information).

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health & Social Care (DHSC). Infection prevention and control: resource for adult social care 2024 (last updated). Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Adult social care (including long-term care and non-NHS services).

Country: England

Main findings:

“To help reduce the spread of infection:

Assessment of evidence

- cover the nose and mouth with a disposable tissue when sneezing, coughing, wiping and blowing the noise – if unavailable use the crook of the arm to catch a sneeze or a cough”
- “dispose of all used tissues promptly into a waste bin,”
- “clean hands after coughing, sneezing, using tissues, or after contact with respiratory secretions or objects contaminated by these secretions”
- “keep contaminated hands away from the eyes, nose and mouth”
- “support people who need help with respiratory hygiene where necessary”

Limitations:

- No methodology.
- No references provided.
- Generalisability may be limited as this guidance is for non-NHS services and long-term care facilities amongst other settings and is for England only. The content outlined is like other guidance so presumably this is standard practice and/or transferable.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health and Social Care (DHSC). Infection prevention and control: quick guide for care workers 2024 (last updated). Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Care settings

Country: England

Main findings:

- “Cover your nose and mouth with a tissue when sneezing, coughing, or wiping or blowing your nose. Dispose of all used tissues into a waste bin.
- If you do not have a tissue, you should sneeze or cough into the crook of your elbow.
- Clean your hands after coughing, sneezing, using tissues or after contact with respiratory secretions such as saliva or mucus.
- You should support the people you care for to follow this advice as well.”

Assessment of evidence
Limitations: • No methodology. • No references provided. • Generalisability may be limited as this guidance is for care facilities in England only. The content outlined is like other guidance so presumably this is standard practice and/or transferable.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
European Centre for Disease Prevention and Control (ECDC). Infection prevention and control and preparedness for COVID-19 in healthcare settings 2021. Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A
Assessment of evidence					
Setting: Healthcare settings (including long-term care facilities)					

Assessment of evidence

Country: EU/EEA region and the UK

Main findings:

- Possible COVID-19 patient cases should wear a face mask or cover their mouth with a tissue when coughing and perform hand hygiene.

Limitations:

- No methodology provided for update.
- Evidence poorly linked to text (no in-text citations).
- Pathogen-specific guidance thus may lack generalisability and/or duplicate other sources.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Aide memoire: Standard precautions in health care 2022. Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Healthcare settings

Country: International

Main findings:

“Respiratory hygiene and cough etiquette

Health workers should apply source control measures to individuals with respiratory symptoms, including:

- asking patients to wear a mask or use a tissue to cover their cough;
- placing acute respiratory symptomatic patients at least 1 metre (3 feet) away from others in common waiting areas.”

Limitations:

- No methodology.
- It is not reported which document(s) this document provides a summary of.
- Likely to duplicate other information in other WHO documents.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Interim infection prevention and control guidance for care of patients with suspected or	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
confirmed filovirus haemorrhagic fever in health-care settings, with focus on Ebola 2014. Last accessed 19/02/2025.					

Assessment of evidence

Setting: Healthcare facilities

Country: International

Methodology:

- The evidence bases for the guidance included “WHO and other international reference documents” available at the time publication during an Ebola outbreak.
- The guidance was also subject to expert opinion consensus and external expert review.

Main findings:

- Cover their nose and mouth when coughing/sneezing with tissue or mask,
- dispose of used tissues and masks,
- and perform hand hygiene after contact with respiratory secretions.”

Assessment of evidence

Limitations:

- Interim guidance, with no detail on whether a final version will be published.
- Pathogen-specific guidance thus may lack generalisability and/or duplicate other sources.
- Poor link between evidence and relevant content.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Clinical care of severe acute respiratory infections – Tool kit 2022 (last updated). Last accessed 19/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Hospitals

Country: Low- and middle-income countries

Main findings:

- For patients: “practise respiratory hygiene (cover their nose and mouth during coughing or sneezing with a tissue or flexed elbow)”.

Assessment of evidence

- Elsewhere in the guidance it discusses that ‘medical masks’ are an alternative to tissues when coughing or sneezing.

- “perform hand hygiene after contact with respiratory secretions (such as coughing, sneezing or blowing nose).”

Limitations:

- No methodology.
- Guidance has potential to lack generalisability as it is targeted towards low- and middle- income countries and active epidemics from emerging viral respiratory pathogens, however, content is very similar to other guidance included.
- Unclear whether content has been updated for relevant sections or represents guidance from past iterations.
- Evidence underlying relevant content is unclear.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
European Centre for Disease Prevention and Control (ECDC). Protect yourself against flu: Learn more about preventive measures 2024 (last updated). Last accessed 19/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Not reported, appears to apply to all settings (healthcare and community)

Country: EU/EEA region

Main findings:

- “Cough etiquette includes turning the head and covering the mouth when coughing or sneezing into a sleeve or elbow, rather than a hand.” – to avoid indirect contamination via fomites.
- “cover your nose and mouth with a tissue or a mask (but not a hand) when coughing or sneezing,
- followed by appropriately disposing of used tissues,”
- “Wash your hands thoroughly with soap and water, especially after handling your used tissues after coughing or sneezing.”

Limitations:

- No methodology.
- Poor association to evidence within the text.
- Pathogen-specific guidance thus may lack generalisability and/or duplicate other sources.
- Not healthcare setting-specific as discusses management of flu at home and in the community.
- Reference list cites a number of expert opinion guidance documents already captured, thus there is a risk of duplicating information.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health (Republic of Ireland). NCEC National Clinical Guideline No. 30 Infection Prevention 2023 (last updated). Last accessed 19/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Health and social care settings

Country: Republic of Ireland

Main findings:

- “Cover the nose with disposable single use tissues when coughing, sneezing, wiping and blowing nose”
- “Use tissues to contain respiratory secretions”
- “Dispose of tissues in the nearest waste receptacle or bin after use”
- “If no tissues are available, cough or sneeze into the inner elbow rather than the hand”
- “Clean hands after contact with respiratory secretions and contaminated objects or materials”
- “Keep contaminated hands away from the membranes of the mouth, eyes and nose”

Assessment of evidence
• "People who are coughing or known to be infectious can be asked to wear a mask to limit potential dissemination of infectious respiratory secretions from the patient to others." • "Health care workers should also assist patients (for example older people, children) who need assistance with containment of respiratory secretions." **Limitations:** • No in-text citations, so it is unclear which cited reference sources were used to inform relevant content.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Public Health Agency of Canada (PHAC). Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Healthcare Settings 2016 (last updated). Last accessed 20/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Healthcare settings

Country: Canada

Methodology:

- A thorough literature search from the year 1999 was conducted, but details of this search, including systematic methods if any, are only available on request thus this document was graded SIGN50 level 4.
- Recommendations were graded according to their strength of evidence and/or "predictive power of the study designs from which that data were obtained" (domains listed are "strength of study design, quality of study, number of studies, consistency of results and directness of evidence"). Content relevant to this research question was not in the form of recommendations.
- Evidence gaps were stated to be supplemented by expert opinion. Authors report that consensus was reached for all content included. Following its development, the guidance was subject to external stakeholder review. There is a statement that guidelines should be updated to reflect changes in the evidence.

Main findings:

- "Respiratory hygiene should include:"
    - "Using tissues to contain respiratory secretions to cover the mouth and nose during coughing or sneezing, with prompt disposal into a no-touch waste receptacle
    - covering the mouth and nose during coughing or sneezing against a sleeve/shoulder if a tissue is not available.
    - wearing a mask when coughing or sneezing.
    - turning the head away from others when coughing or sneezing"
- All the above graded BII (moderate).

Assessment of evidence

Limitations:

- Most cited references are not relevant for inclusion in this review. Primary studies address efficacy of surgical masks or respiratory protective equipment, were published pre-2000 or are not relevant. Two guidance sources are cited, one of which is from PHAC and has less relevant content for this topic than this resource, and the other is already captured (WHO, 2007).
- Search methods only available on request.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Public Health Agency Canada (PHAC). Prevention and Control of Influenza during a Pandemic for All Healthcare Settings. 2021 (last updated). Last accessed 20/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: All healthcare settings (including existing and temporary healthcare settings).

Country: Canada

Assessment of evidence

Methodology:

- The annex recommendations are informed by "a synthesis of recent literature reviews related to influenza transmission; published PHAC documents […] and experience with the pandemic H1N1 influenza virus outbreak in Canada in the spring of 2009."
- PHAC members and a multidisciplinary working group were involved in development of the annex and the full guidance is endorsed by "the Public Health Network Council".
- The guidance is subject to review based on emerging evidence.

Main findings:

"III. Glossary of terms"

- "Respiratory hygiene includes covering the mouth and nose with a sleeve during coughing or sneezing; using tissues to contain respiratory secretions during coughing or sneezing with prompt disposal into a hands-free receptacle; wearing a mask when coughing or sneezing to contain droplets and decrease contamination of the surrounding environment; turning the head away from others when coughing or sneezing;"

"6. Hierarchy of Controls in the Inter-pandemic and Pandemic Periods"

- Authors provide coughing or sneezing into a sleeve as an example of respiratory hygiene.

Limitations:

- One supportive reference provided for definition of respiratory hygiene, which is superseded but its update is captured in the evidence base for this review.
- Pathogen- and pandemic-specific guidance thus may lack generalisability to other pathogens and usual clinical practice.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Jensen PA, Lambert LA, Iademarco MF, et al. Guidelines for preventing the transmission of Mycobacterium tuberculosis in health-care settings, 2005. Centers for Disease Control and Prevention (CDC). MMWR Recomm Rep. 2005;54(RR-17):1-141. Last accessed 21/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence
Settings: Health-care settings **Country:** USA

Assessment of evidence

Methods:

Evidence base was made using primary references, expert consultation from experts in the field and review articles.

Main findings:

Glossary:

Respiratory hygiene and Cough etiquette

'Procedures by which patients with suspected or confirmed infectious TB disease can minimize the spread of infectious droplet nuclei by decreasing the number of infectious particles that are released into the environment. Patients with a cough should be instructed to turn their heads away from persons and to cover their mouth and nose with their hands or preferably a cloth or tissue when coughing or sneezing.'

Limitations:

- No methodology.
- Citations in the document are from pre-2000.
- No grading of strength of evidence.
- Guidance almost 20 years old (no updates visible).
- No recommendations relevant to this research question were made in the guidance.
- Evidence is from the USA.
- Pathogen-specific guidance.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of health and social care (DHSC). Pandemic (H1N1) 2009 influenza: a summary of guidance for infection control in healthcare settings 2009. Last accessed 03/03/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Settings: Health-care settings

Country: UK

Methods: There is no evidence of any systematic methods used for guidance development. A limited reference list is provided but there are no references linked to respiratory hygiene, hence it can only be graded as expert opinion.

Main findings:

‘4.1.2 Respiratory hygiene – ‘Catch it, bin it, kill it’

‘Patients, staff and visitors should be encouraged to minimise potential influenza transmission through good respiratory hygiene measures:

Assessment of evidence

- Hands should be kept away from the eyes, mouth and nose.
- Disposable, single-use tissues should be used to cover the nose and mouth when sneezing, coughing or wiping and blowing noses. Used tissues should be disposed of promptly in the nearest waste bin.
- Tissues, waste bins (preferably lined and foot operated) and hand hygiene facilities should be available for patients, visitors and staff.
- Hands should be cleaned (using soap and water if possible, otherwise using alcohol handrub) after coughing, sneezing, using tissues or after any contact with respiratory secretions and contaminated objects.
- Some patients (e.g., older people and children) may need assistance with containment of respiratory secretions; those who are immobile will need a container (e.g., a plastic bag) readily at hand for immediate disposal of tissues.

In common waiting areas or during transport, symptomatic patients may wear surgical masks to minimise the dispersal of respiratory secretions and reduce environmental contamination.

Limitations:

- No recent updates available (last version is from 2009).
- No methodology.
- No references cited.
- Pathogen specific guidance.
- Pandemic specific guidance, may not be generalisable to other scenarios.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Public Health Scotland (PHS). Guidance for the public health management of acute respiratory infections (ARI) in community, social and residential care settings. 2024 (last updated 2025). Last accessed 03/03/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Scottish health and social care settings

Country: UK (Scottish guidance)

Methods:

This guidance is for managing acute respiratory infections (ARI) in both higher and lower risk settings (although it does not include information on outbreak management in hospitals or clinical management of ARIs). It also excludes certain pathogen specific guidance for which PHS already provides specific guidance for. A link is provided for the guidance development process document and details provided

Assessment of evidence

for the consultations required, although guidance clearly states that the supporting evidence base used to formulate this guidance was largely made up of expert opinion.

Main findings:

Hand washing and respiratory hygiene

"Ensuring effective hand hygiene, respiratory and cough hygiene assists everyone in reducing onwards transmission.

- Covering mouth and nose with disposable tissues reduces onward transmission of viruses and bacteria when coughing or sneezing. Tissues should be placed in a bin immediately and hands washed. When tissues are not available, coughing or sneezing into the crook of the elbow is advised, and not into hands.
- Washing hands removes viruses and other micro-organisms, making infection less likely when people touch their faces. Using soap (preferably liquid soap) and warm water is the most effective way to clean hands, especially if they are visibly dirty. Hands should be thoroughly dried after washing. This should be done regularly throughout the day, especially before meals and after toileting. Hand sanitiser should only be used when soap and water are not available. It is important to note that the use of hand sanitiser is not effective against gastrointestinal viruses (e.g., norovirus).
- Individuals who are unable to wash their hands independently, such as young children or older adults, should be supported to do so."

Limitations:

- Lack of systematic methodology.
- Lack of references.
- Disease- specific guidance (i.e., acute respiratory infections) hence may lack generalisability to other conditions.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Saiman L, Siegel JD, LiPuma JJ, et al. Infection prevention and control guideline for cystic fibrosis: 2013 update. Infect Control Hosp Epidemiol. 2014; 35 Suppl 1:S1-S67. Doi:10.1086/67688.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Settings: Infection prevention and control for Cystic Fibrosis patients in healthcare settings

Country: USA

Methods:

This guidance was initially produced by the Cystic Fibrosis (CF) foundation in 2003. New IPC knowledge and challenges prompted an update in 2013 which appears to be the current version online. Its intended users are healthcare workers involved in the care of CF patients. The 2013 update focuses on preventing transmission of CF in ambulatory and inpatient settings. Recommendations have been broken down into 7 sections with the first section outlining core recommendations and the remaining sections focusing on different settings such as ambulatory, inpatient, microbiology, nonhealthcare etc.

Assessment of evidence

Main findings:

20. “The CF Foundation recommends that people with CF be instructed to follow Respiratory Hygiene practices to contain their secretions when coughing or sneezing (i.e., cough into a tissue, immediately discard soiled tissue into a trash receptacle, and perform hand hygiene after disposing of soiled tissues). A covered trash receptacle with a foot pedal is preferred.”

People with CF and families/visitors.

“Masks prevent ill individuals from spreading infectious respiratory droplets. For people entering healthcare settings, availability of facemasks is an essential component of respiratory hygiene and cough etiquette, particularly during times of seasonal community-onset respiratory infections (e.g., influenza)”

“Thus, to prevent transmission by the droplet route people with CF should routinely don a facemask of appropriate size when entering healthcare settings where they are likely to encounter others with CF. Such settings include the common areas of the CF clinic, when leaving their hospital room, or when leaving the clinic exam room. However, it is possible that very young children, people in respiratory distress, and people exercising may not be able to tolerate a mask. Such individuals should be instructed to practice other components of respiratory hygiene (i.e., cough into a tissue, discard the tissue, perform hand hygiene after coughing) and remain at least 6 feet from others with CF”.

Limitations:

- Lack of clear methodology.
- Evidence tables only available on request (lack of transparency).
- Evidence base largely made up of expert opinion and consensus.
- Disease specific guidance, not applicable to other scenarios.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Infection prevention and control in the context of COVID-19: a guideline. (WHO/2019-nCoV/IPC/guideline/2023.4) Geneva: World Health Organization; 2023. Last accessed 27/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Country: International

Setting: Healthcare and community settings

Methods:

Recommendations for infection prevention and control practices for COVID-19 are set out within the context of healthcare and community settings; this is the 7th update of the document. The target audience for this guidance is made up of public health professionals, IPC

Assessment of evidence

professionals, wider health and care workers, policy makers and managers. A rapid review methodological approach was used due to time constraints; therefore, the AGREE tool for appraisal was not appropriate to use in this case.

Main findings:

Public health and social measures

'Public health and social measures (PHSMs) are measures implemented in community settings that consist of the following: personal protective measures (for example, physical distancing, avoiding crowded settings, practising hand hygiene, respiratory etiquette and mask-wearing)'.

Mask use for source control

'Source control also includes wearing well-fitting medical masks to cover a person's nose and mouth to prevent respiratory secretions from spreading when breathing, talking, singings, sneezing or coughing'.

'Health and care workers should instruct the patient to wear a medical mask and follow respiratory hygiene and cough etiquette when transport is necessary'.

Components

'Individuals who cannot tolerate a medical mask should practice respiratory hygiene by coughing or sneezing into a bent elbow or tissue and then disposing of the tissue, followed by hand hygiene'.

Limitations:

- This guidance was produced in response to COVID-19 using a rapid review methodology and therefore it is unlikely that the approach was robust as no systematic review was conducted. In addition, it is possible that guidance may update in future iterations due to the changing nature of tackling COVID-19.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Guidelines on tuberculosis infection prevention and control. Geneva. World Health Organization; (WHO/CDS/TB/2019.1) 2019. Last accessed 20/02/2025.	Guidelines	AGREE II: Recommend with modifications	N/A	N/A	N/A

Assessment of evidence

Country: International

Setting: Healthcare settings and other groups outside of the healthcare system

Methods:

These guidelines, produced by the World Health Organization, outline interventions and recommendations to reduce the risk of *M. tuberculosis* transmission within both healthcare and non-healthcare settings; they are aimed to inform national level and local level IPC policies. The target audience includes national and regional policy makers, IPC services and inpatient and outpatient facilities. The evidence for these guidelines were produced using a systematic review process; a WHO steering group, Guideline Development Group and an External Review Group were also established during the process. Although the methods for collecting the data were systematic,

Assessment of evidence

the literature identified as evidence was limited and of a low quality. Animal studies were not excluded from the results and there was a lack of literature comparing the different materials used to cover the mouth during coughing and sneezing.

Main findings:

What is respiratory hygiene

'Respiratory hygiene (or hygiene measures) is defined as the practice of covering the mouth and nose during breathing, coughing or sneezing (e.g., wearing a surgical mask or cloth mask, or covering the mouth with tissues, a sleeve, or a flexed elbow or hand, followed by hand hygiene) to reduce the dispersal of airborne respiratory secretions that may contain *M. tuberculosis* bacilli.'

Limitations:

- Five relevant studies were identified within the systematic review process. However, four of the studies were before and after studies that used a bundled intervention. The fifth study was a prospective cohort study using an animal model which measured the effect of surgical masks used by MDR-TB patients on transmission to guinea pigs exposed to ward air.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Infection prevention and control of epidemic – and pandemic-prone acute respiratory infections in health care. Geneva. World Health Organization. 2014. Last accessed 20/02/2025.	Guidelines	AGREE II: Recommend with modifications	N/A	N/A	N/A

Assessment of evidence

Country: International

Setting: healthcare settings

Methods:

This is an update to Guidelines detailing IPC measures for containing respiratory infections, produced by the World Health Organization. The target audience is primarily IPC professionals and members of IPC teams, healthcare policy makers and health care workers. The evidence base is formed of a field evaluation, literature review and practical experience and lessons learnt from pandemic Influenza A (H1N1) 2009. A systematic review process was followed, and the quality of evidence was assessed using the GRADE approach.

Assessment of evidence
Main findings: 'In people with ARIs, encourage the use of respiratory hygiene (i.e., covering the mouth and nose during coughing or sneezing with a medical mask (surgical or procedure mask), cloth mask, tissue, sleeve or flexed elbow), followed by hand hygiene, to reduce the dispersal of respiratory secretions containing potentially infectious particles (Strong recommendation, very low quality of evidence).' **Limitations:** • These guidelines were published in 2014 (11 years ago) before the COVID-19 pandemic and so the recommendations are based on evidence that may not be relevant today. • Out-dated as per planned update, should have been updated in 2016. • No explanations were given for the strength of evidence rating with each recommendation.

Question 3: When should the components of cough etiquette and respiratory hygiene be applied?

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Rathore MH, Jackson MA, and Committee on Infectious Diseases. Infection Prevention and Control in Pediatric Ambulatory Settings. Pediatrics. 2017;140 (5): e20172857.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Ambulatory care facilities

Country: USA

Methods: No methods have been provided of how evidence was collated or assessed, although the following statement is provided; 'Policy statements from the American Academy of Pediatrics benefit from expertise and resources of liaisons and internal (AAP) and external reviewers'. Based on this statement, it appears that expert opinion has informed the statement. The authors also state that this policy statement should not serve as a standard of medical care.

Assessment of evidence

Main findings:

“Respiratory hygiene and cough etiquette are integral parts of the Standard Precautions to prevent the transmission of influenza and potentially other pathogens causing respiratory tract infection in reception areas, common waiting areas, and examination rooms in ambulatory care facilities.”

“The full implementation of this strategy requires the education of patients and accompanying people at the time they enter the facility”

“during periods of increased prevalence of respiratory infections in the community, the availability of and use of masks to enhance respiratory etiquette should be considered.”

“Basic patient-related IPC measures include informing and educating patients and families regarding cough etiquette and meticulous hand hygiene before and after the use of a spirometer or any other handheld device”

Limitations:

- Lack of systematic methods to put together the evidence base.
- Guidance applicable to ambulatory settings and may not be generalisable to other health and care settings.
- The quality of references used for the evidence base is poor (a qualitative piece of evidence from YouTube and an expert opinion from CDC).

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Kiely PM, Lian KY, Napper G et al. Influenza A(H1N1) and infection control guidelines for optometrists. Clinical & experimental optometry. 2009; 92(6): 490–494	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Optometry

Country: Australia

Methods: A narrative guideline from Australia. No information is provided regarding the guidance development process, nor is there evidence of any systematic review been conducted hence it can only be graded as expert opinion. It cites one guideline from 2007 which is from the same organisation and a narrative expert guideline.

Main findings:

“A patient with a history of travel to an area affected by the virus or who has been in contact with a confirmed case of Influenza A(H1N1) or who presents with an influenza-like illness should be given a surgical mask [P2 (N95)] to wear immediately and moved to a separate room or, if this is not possible, they should be separated from people in the waiting room by at least one metre. These patients should be provided with tissues and asked to use them to cover the nose and mouth when coughing or sneezing and to dispose of them immediately into a hands-free waste receptacle. They should also be asked to wash their hands after contact with respiratory secretions and

Assessment of evidence

contaminated objects or materials and to avoid touching their face. Reinforcement of the need for infection control procedures for patients such as frequent handwashing, appropriate cough and sneeze etiquette, used tissue disposal and rescheduling of non-urgent appointments can be achieved through signs, posters and information leaflets in the practice visible to both staff and patients."

Limitations:

- Guidance is from 2009, hence a bit outdated and no update available.
- Guidance cannot be generalised to settings out with optometry.
- No details regarding guidance development process.
- No information provided regarding the effectiveness of these strategies.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Brouqui P, Puro V, Fusco FM, et al. Infection control in the management of highly pathogenic infectious diseases: consensus of the European Network of Infectious Disease. Lancet Infect Dis. 2009; 9(5):301-311.	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Doi:10.1016/S1473-3099(09)70070-2					

Assessment of evidence

Country: International (European)

Setting: Clinical management of patients with highly infectious diseases

Methods: This consensus statement and its recommendations were drafted by the European Network for Infectious Diseases (EUNID) which is made up of 30 national representatives and various subject matter experts. It includes recommendations for infection control while performing invasive procedures and during the clinical management of patients with highly infectious diseases (HID) admitted to high-level isolation units (HLIU). The subject matter expert undertook an extensive review and put together recommendations that were amended and refined by international teams with a final consensus reached in 2007 through two meetings. A table is shown with some recommendations although it is unclear how these are linked to the evidence base with no grading of recommendations and no citations provided.

Main findings:

“At admission of patients with HID to an emergency department • Systematically apply standard precautions and cough and respiratory etiquette”.

An HID has been defined as “An HID is transmissible from person to person, **causes life-threatening illness, presents a serious hazard in health-care settings** and the community, and therefore requires specific control measures”.

Limitations:

- The definition/classification of highly infectious disease (HID) may be different in UK as compared to EU settings.
- Guideline is from 2009, slightly outdated.
- Not much detail provided regarding how cough etiquette is to be performed.

Assessment of evidence
• No details provided of the grading of evidence and papers chosen to support recommendations.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
National Health and Medical Research Council (NHMRC). Australian Guidelines for the Prevention and Control of Infection in Healthcare. 2019. v.11.23. Updated 28 February 2024. Last accessed 21/08/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence
Country: Australia **Setting:** Acute health care settings

Assessment of evidence

Methods:

The main target audience of the guidance is healthcare workers working within acute health and care settings, but authors state that certain sections can also be beneficial for other health and care settings. The evidence base is formed of an amalgamation of "international IPC guidelines, systematic literature reviews, horizon scans, work on HAI prevention from the Australian Commission on Safety and Quality in Health Care (ACSQHC), national discipline-based infection control guidelines, and Australian Standards". Authors outline a specific process for development and grading of recommendations however, there were no formal recommendations presented for cough etiquette and respiratory hygiene. Cough etiquette and respiratory hygiene only appears as part of a bundled approach with other standard infection control measures with no citations provided.

Main findings:

'In applying standard and transmission-based infection prevention and control strategies as part of day-to-day practice, healthcare workers should ensure that their patients understand why certain practices are being undertaken, and that these practices are in place to protect everyone from infection. Patients and visitors should also be aware of their role in minimising risks by following basic hand hygiene and respiratory hygiene and cough etiquette and informing staff about aspects of their care or services if necessary.'

'Respiratory hygiene and cough etiquette must be applied as a standard infection control precaution at all times.'

'Anyone with signs and symptoms of a respiratory infection, regardless of the cause, should follow or be instructed to follow respiratory hygiene and cough etiquette.'

'Respiratory hygiene and cough etiquette are particularly important for patients on droplet precautions'

'In primary care and other office-based practice, examples of appropriate implementation of droplet precautions include segregation in waiting rooms for patients with violent or frequent coughing, and the availability of tissues, alcohol-based hand rub and a waste bin so that patients can practice respiratory hygiene and cough etiquette.'

'When transfer of a patient on droplet precautions within or between facilities is necessary, there is the potential for other patients and healthcare workers to come in contact with infectious agents when the patient coughs or sneezes. This can be addressed by asking the patient to wear a fluid resistant surgical mask while they are being transferred and to follow respiratory hygiene and cough etiquette.'

Assessment of evidence

Limitations:

- No references provided for this statement.
- No systematic literature review conducted for cough etiquette, and no formal recommendations made.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Clinical management of COVID-19: living guideline. Geneva: World Health Organization; 18 August, 2023. (WHO/2019-nCoV/clinical/2023.2) Last accessed 07/01/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Health facilities managing COVID-19 patients

Country: International

Assessment of evidence

Methods: The guideline development group for these international guidelines had global representation. The recommendations were formulated using the GRADE approach and expert opinion. Systematic methods for evidence synthesis were not consistently used for all sections of this document and external groups were used to conduct these processes. There is lack of transparency regarding development of recommendations. In addition, there were no recommendations made for 'cough etiquette' hence the AGREE tool was not used.

Main findings:

IPC measures for patients with suspected or confirmed COVID-19:

'Health facilities should adhere to key WHO recommended IPC measures, in particular, adhering to respiratory etiquette and hand hygiene best practices, contact, droplet and airborne precautions, adequate environmental cleaning and disinfection; ensuring adequate ventilation; isolation facilities of COVID-19 patients.'

'Apply standard precautions according to risk assessment for all patients, at all times, when providing any diagnostic and care services. Standard precautions include but are not limited to, hand and respiratory hygiene and the appropriate use of PPE; universal masking is required for all persons in areas of known or suspected community or cluster SARS-CoV-2 transmission.'

Practices the mother should perform during all infant and childcare

'Perform respiratory hygiene: sneeze or cough into a tissue and immediately dispose of the tissue. Hands should immediately be washed with soap and water or alcohol-based hand rub.'

Limitations:

- The approach towards COVID-19 has evolved over time and guidance may update in future versions.
- There appears to be no systematic review or meta-analysis conducted to support this information nor references quoted.
- Guidance limited to COVID-19 and not generalisable to other respiratory infections.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
American Academy of Ophthalmology INFORMATION STATEMENT Infection Prevention in Eye Care Services and Operating Areas. 2012. Last accessed 25/10/2024.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Eye Care Services and Operating Areas

Country: USA

Methods:

A list of references was provided at the beginning of the document which includes federal regulations (OSHA, FDA, EPA), CDC guidelines, current research and literature, recommendations, and standards from professional organisations (AORN, APIC, NIOSH) although there is no indication of any systematic methods on how they were used for evidence synthesis.

Main findings:

'The strategy is targeted at patients and accompanying family members and friends with undiagnosed transmissible respiratory infections, and applies to any person with signs of illness including cough, congestion, rhinorrhea, or increased production of respiratory secretions

Assessment of evidence

when entering a health care facility. Patients who have asthma, allergic rhinitis, or chronic obstructive lung disease also may be coughing and sneezing. While these patients often are not infectious, cough etiquette measures are prudent and recommended by the CDC. The absence of fever does not always exclude a respiratory infection. Health care personnel are advised to observe Droplet Precautions (i.e., wear a mask with eye protection) and hand hygiene when examining and caring for patients with signs and symptoms of a respiratory infection.'

'Control measures for HCWs include: Wearing a mask with eye protection when within 3-6 feet of the patient when the coughing patient is unable to cover mouth and nose with tissue or mask. Respiratory etiquette also includes preventing the HCW's respiratory droplets from infecting the patient. It is courtesy and good practice for the HCW to wear a mask if the following personal conditions exist while working: sore/scratchy throat, cough, runny nose, halitosis, cold symptoms. Wearing the mask prevents the patient from breathing the droplets of the HCW and prevents potential exposure. Healthcare workers who have a respiratory infection are advised to avoid direct patient contact, especially with high-risk patients.'

Limitations:

- No evidence of systematic methods to produce the guidance document.
- No citations were provided for the respiratory hygiene and cough etiquette section.
- Guidance applicable only to eye care services and may not be generalisable to other healthcare settings.
- Guidance is more than 10 years old.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee. Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. 2007 (updated 2024). Last accessed 25/10/2024.	Guidance	Level 4	N/A	N/A	N/A
Assessment of evidence					
Setting: IPC in healthcare settings **Country:** USA					

Assessment of evidence

Methods: The document a list of members of the guidance development group and their qualifications. Each section of the document contains information on an IPC topic along with recommendations, although it is unclear how the evidence cited contributed to the grade of evidence. There is also no evidence of a systematic literature review being conducted or information on the quality of individual studies.

Main findings:

Changes or clarifications in terminology (since the 1996 guideline):

'A new addition to the practice recommendations for Standard Precautions is Respiratory Hygiene and cough Etiquette. While Standard Precautions generally apply to the recommended practices of healthcare personnel during patient care, 'Respiratory Hygiene and cough Etiquette applies broadly to all persons who enter a healthcare setting, including healthcare personnel, patients and visitors.'

I.C.4. Severe Acute Respiratory Syndrome (SARS).

'Early detection of cases is accomplished by screening persons with symptoms of a respiratory infection for history of travel to areas experiencing community transmission or contact with SARS patients, followed by implementation of Respiratory Hygiene and cough Etiquette (i.e., placing a mask over the patient's nose and mouth) and physical separation from other patients in common waiting areas.'

I.D.2.b. Ambulatory care

'If transmission in outpatient settings is to be prevented, screening for potentially infectious symptomatic and asymptomatic individuals, especially those who may be at risk for transmitting airborne infectious agents (e.g., M. tuberculosis, varicella-zoster virus, rubeola [measles]), is necessary at the start of the initial patient encounter.'

'Upon identification of a potentially infectious patient, implementation of prevention measures, including prompt separation of potentially infectious patients and implementation of appropriate control measures (e.g., Respiratory Hygiene and cough Etiquette and Transmission-Based Precautions) can decrease transmission risks.'

Assessment of evidence

III.A.1.a. Respiratory hygiene and cough etiquette.

'The strategy is targeted at patients and accompanying family members and friends with undiagnosed transmissible respiratory infections, and applies to any person with signs of illness including cough, congestion, rhinorrhoea, or increased production of respiratory secretions when entering a healthcare facility.'

'Masking may be difficult in some settings, (e.g., pediatrics, in which case, the emphasis by necessity may be on cough etiquette.'

'Patients who have asthma, allergic rhinitis, or chronic obstructive lung disease also may be coughing and sneezing. While these patients often are not infectious, cough etiquette measures are prudent.'

III.B.2. Droplet precautions

'Patients on Droplet Precautions who must be transported outside of the room should wear a mask if tolerated and follow Respiratory Hygiene and cough Etiquette.'

Recommendations:

IV.C. Respiratory Hygiene and cough Etiquette

'Educate healthcare personnel on the importance of source control measures to contain respiratory secretions to prevent droplet and fomite transmission of respiratory pathogens, especially during seasonal outbreaks of viral respiratory tract infections (e.g., influenza, RSV, adenovirus, parainfluenza virus) in communities. Category IB'

'Implement the following measures to contain respiratory secretions in patients and accompanying individuals who have signs and symptoms of a respiratory infection, beginning at the point of initial encounter in a healthcare setting (e.g., triage, reception and waiting areas in emergency departments, outpatient clinics and physician offices)

'During periods of increased prevalence of respiratory infections in the community (e.g., as indicated by increased school absenteeism, increased number of patients seeking care for a respiratory infection), offer masks to coughing patients and other.''symptomatic persons (e.g., persons who accompany ill patients) upon entry into the facility or medical office and encourage them to maintain special separation, ideally a distance of at least 3 feet, from others in common waiting areas. Category IB'

Assessment of evidence

V.C.1. Patient placement

'In ambulatory settings, place patients who require Droplet Precautions in an examination room or cubicle as soon as possible. Instruct patients to follow recommendations for Respiratory Hygiene and cough Etiquette. Category II'

V.C.3. Patient transport

'If transport or movement in any healthcare setting is necessary, instruct patient to wear a mask and follow CDC's Respiratory Hygiene and cough Etiquette in Healthcare Settings.'

V.D. Airborne Precautions

V.D.2.d. In ambulatory settings:

'Instruct patients with a known or suspected airborne infection to wear a surgical mask and observe Respiratory Hygiene and cough Etiquette. Once in an AIIR, the mask may be removed; the mask should remain on if the patient is not in an AIIR. Category IB/IC'

V.D.5. Patient transport

'If transport or movement outside an AIIR is necessary, instruct patients to wear a surgical mask, if possible, and observe Respiratory Hygiene and cough Etiquette. Category II'

Glossary:

'These measures are targeted to all patients with symptoms of respiratory infection and their accompanying family members or friends beginning at the point of initial encounter with a healthcare setting (e.g., reception/triage in emergency departments, ambulatory clinics, healthcare provider offices.'

Limitations:

- This guidance provides some recommendations related to cough etiquette although it is unclear how the citations quoted contributed to the grading of the evidence.
- Multiple citations have expired or been updated since.

Assessment of evidence

- No evidence of a systematic review been conducted on this topic.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Basic Infection Control And Prevention Plan for Outpatient Oncology Settings 2011. Last accessed 17/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Outpatient oncology settings

Country: USA

Methods:

'There was no specific method detailing the process for creating this guidance. Its intended audience was outpatient oncology facilities. The layout of this guidance is as a model for a basic infection control and prevention plan. Any advice given within the 'model' are based on CDC's evidence-based guidelines and guidelines from professional societies e.g., oncology nursing society.'

Assessment of evidence

Main findings:

- Listed measures apply to “all potentially infected persons at the point of entry and continuing throughout the duration of the visit.”
  - “any person […] with signs and symptoms of respiratory illness, including cough, congestion, rhinorrhea, or increased production of respiratory secretions.”
  - Includes staff of the health and care setting.
- Measures can be stopped at the point it is determined that infectious agents do not require droplet or airborne precautions.

Limitations:

- No methodology.
- Narrative guidance, with no formal recommendations.
- Poorly linked to underlying evidence.
- Underlying evidence is from the USA.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Summary of Infection Prevention Practices in Dental Settings	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
2016. Last accessed 17/02/2025.					

Assessment of evidence

Setting: Dental settings

Country: USA

Main findings:

- Narrative content: These measures apply to “patients and individuals accompanying patients to the dental setting who might have undiagnosed transmissible respiratory infections, but also apply to anyone (including [dental healthcare professionals]) with signs of illness including cough, congestion, runny nose, or increased production of respiratory secretions.”
- Recommendation (no grade): “Implement measures to contain respiratory secretions in patients and accompanying individuals who have signs and symptoms of a respiratory infection, beginning at point of entry to the facility and continuing throughout the visit.”

Limitations:

- No methodology.
- Risk of duplicating information, as cites 2007 isolation guidelines already captured.
- Sources cited have been removed, updated, or already captured.
- Recommendations are not graded.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Prevention and Control for Hospitalized MERS Patients. 2024. Last accessed 17/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Hospitals and other Healthcare settings.

Country: USA

Main findings:

- "Upon Arrival and During the Visit […] all persons with symptoms of a respiratory infection adhere to respiratory hygiene and cough etiquette, hand hygiene and triage procedures throughout the duration of the visit."
- Immediately implement respiratory hygiene and cough etiquette when those at risk for having MERS-CoV infection have been identified.
- When in common areas, visitors should follow respiratory hygiene and cough etiquette precautions.

Assessment of evidence

- Where healthcare workers develop respiratory symptoms “after an unprotected exposure (i.e., not wearing recommended PPE at the time of contact) to a patient with MERS-CoV, they should implement respiratory hygiene and cough etiquette.

Limitations:

- No methodology.
- No references.
- Pathogen-specific guidance, but same content as other CDC guidance (risk of duplicating information).

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Guidance for the Prevention and Control of Influenza in the Peri- and Postpartum Settings. 2020. Last accessed 17/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Peri- and post-partum settings

Country: USA

Main findings:

- "Prior to delivery, a hospitalized pregnant woman with suspected or laboratory-confirmed influenza should be […] instructed to follow respiratory hygiene and cough etiquette, including wearing a facemask, if being transported outside of her room."
- "The peripartum patient and her family members and other visitors should […] adhere to respiratory hygiene and cough etiquette, hand hygiene, and use of personal protective equipment (PPE) according to current facility policy."
- Before discharge, "ensure that the ill postpartum woman [with suspected or confirmed influenza] follows hand hygiene and respiratory hygiene and cough etiquette when having contact with her new-born."

Limitations:

- No methodology.
- No references provided.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Infection Prevention and Control Strategies for Seasonal Influenza	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
in Healthcare Settings. 2021. Last accessed 18/02/2025.					

Assessment of evidence

Setting: Healthcare settings

Country: USA

Main findings:

- Implement “respiratory hygiene and cough etiquette […] upon entry and for the entire duration of stay in healthcare settings.”
- Upon entry, implement respiratory hygiene, cough etiquette and hand hygiene.
- When healthcare workers return to work after being off sick with respiratory symptoms and/or fever, “adherence to respiratory hygiene and cough etiquette after returning to work is always important. If symptoms such as cough and sneezing are still present, HCP should wear a facemask during patient-care activities. The importance of performing frequent hand hygiene (especially before and after each patient contact and contact with respiratory secretions) should be reinforced.”
- Where patients under Droplet precautions are being transported outside private rooms: “Have the patient wear a facemask, if possible, and follow respiratory hygiene and cough etiquette and hand hygiene.”

Limitations:

- No methodology.
- No signposting to evidence.

Assessment of evidence

- Pathogen-specific guidance, but same content as other CDC guidance (risk of duplicating information).

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). CDC's Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings 2024. Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Healthcare settings

Country: USA

Methodology:

- Existing CDC recommendations, where cited in more than one guideline, formed “fundamental standards”, which are measures not expected to become outdated by emerging evidence or technologies.

Assessment of evidence

- New items were identified from CDC pathogen-specific guidance.
- The development process for this guidance multidisciplinary discussion and consultation amongst the guidelines committee, HICPAC working group and other expert opinion Organisations.
- There was also expert review by the CDC Division of Healthcare Quality Promotion. For further information, the guidance urges you to access full CDC infection control guidelines.
- Publication of new CDC guidelines will prompt future updates.

Main findings:

- “During periods of higher levels of community respiratory virus transmission, facilities should consider having everyone mask upon entry to the facility to ensure better adherence to respiratory hygiene and cough etiquette for those who might be infectious. Such an approach could be implemented facility-wide or targeted toward higher risk areas (e.g., emergency departments, urgent care, units experiencing an outbreak) based on a facility risk assessment”.

Limitations:

- No methodology.
- No supportive evidence provided.
- Pathogen-specific guidance, but same content as other CDC guidance (risk of duplicating information).

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Preventing Transmission of Viral Respiratory Pathogens in Healthcare Settings. 2024. Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Healthcare settings

Country: USA

Main findings:

- Facemasks use is discussed in relation to:
  - "people with symptoms of respiratory infection (e.g., cough)"
  - "periods of higher levels of community respiratory virus transmission" – facility-wide or based on risk assessment (high-risk areas such as "emergency departments and urgent care", high-risk patients such as those moderately or severely immunocompromised)

Assessment of evidence
Limitations: • No methodology.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings. 2019 (last updated). Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence
Setting: Healthcare facilities **Country:** USA

Assessment of evidence

Main findings:

- "Routinely promoting and facilitating respiratory hygiene and cough etiquette"
- Upon arrival to the healthcare setting, "facilitate adherence to respiratory hygiene, cough etiquette, hand hygiene".

Limitations:

- No methodology.
- No references provided.
- Pathogen-specific guidance.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
European Centre for Disease Prevention and Control (ECDC). Infection prevention and control and preparedness for COVID-19 in healthcare settings. 2021. Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Healthcare settings (including long-term care facilities)

Country: EU/EEA region and the UK

Main findings:

- Where there is identified community transmission of COVID-19 staff, patients and visitors are to apply respiratory hygiene.
- Visitors to inpatients in healthcare facilities are to be aware of the need for respiratory hygiene, including cough etiquette.
- Where possible COVID-19 patients have been identified, they should follow cough etiquette and hand hygiene.

Limitations:

- No methodology provided for update.
- Evidence poorly linked to text (no in-text citations).
- Pathogen-specific guidance.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Interim infection prevention and control guidance for care of patients with suspected or confirmed filovirus	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
haemorrhagic fever in health-care settings, with focus on Ebola. 2014. Last accessed 19/02/2025.					

Assessment of evidence

Setting: Healthcare facilities

Country: International

Methodology:

- The evidence base for the guidance included “WHO and other international reference documents” available at the time publication during an Ebola outbreak.
- The guidance was also subject to expert opinion consensus and external expert review.

Main findings:

- Listed measures are to be applied by persons with symptoms of respiratory infection.
- Perform hand hygiene after contact with respiratory secretions.

Limitations:

- Interim guidance, with no detail on whether a final version will be published.

Assessment of evidence
• Pathogen-specific guidance thus may lack generalisability and/or duplicate other sources. • Poor link between evidence and relevant content.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Clinical care of severe acute respiratory infections – Tool kit. 2022 (last updated). Last accessed 19/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence
Setting: Hospitals **Country:** Low- and middle-income countries **Main findings:** • The above measures are discussed in relation to patients in the waiting room where patients are “known or suspected to have an acute respiratory infection”.

Assessment of evidence

- In a flow chart, these measures are to be implemented at entry of patients with known or suspected acute respiratory infection to triage.

Limitations:

- No methodology.
- Guidance has potential to lack generalisability as it is targeted towards low- and middle- income countries and active epidemics from emerging viral respiratory pathogens, however, content is very similar to other guidance included.
- Unclear whether content has been updated for relevant sections or represents guidance from past iterations.
- Evidence underlying relevant content is unclear.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
European Centre for Disease Prevention and Control (ECDC). Protect yourself against flu: Learn more about preventive measures. 2024 (last updated). Last accessed: 19/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Not reported, appears to apply to all settings (healthcare and community)

Country: EU/EEA region

Main findings:

- "if you are sick"
- (use of face mask for coughing and sneezing) "when otherwise unavoidably having close contact with healthy people"

Limitations:

- No methodology.
- Poor association to evidence within the text.
- Pathogen-specific guidance thus may lack generalisability and/or duplicate other sources.
- Not healthcare setting-specific as discusses management of flu at home and in the community.
- Reference list cites a number of expert opinion guidance documents already captured, thus there is a risk of duplicating information.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health (Republic of Ireland). NCEC National Clinical Guideline	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
No. 30 Infection Prevention. 2023 (last updated). Last accessed: 19/02/2025.					

Assessment of evidence

Setting: Health and social care settings

Country: Republic of Ireland

Main Findings:

- “Anyone with signs or symptoms of a respiratory infection, regardless of the cause, should follow or be instructed to follow respiratory hygiene and cough etiquette”
- “particularly important for people on droplet precautions”
- (wearing a mask) “should be offered to all people with symptoms of viral respiratory tract infection presenting in a healthcare setting.”

Movement of patients:

“If transfer of the person outside the room with appropriately controlled ventilation is necessary, asking the person to wear a correctly fitted surgical mask while they are being transferred and to follow respiratory hygiene and cough etiquette, as well as covering any skin lesions associated with the condition (for example chickenpox) will reduce the risk of cross transmission.”

Limitations:

- No in-text citations, so it is unclear which cited reference sources were used to inform relevant content.

Assessment of evidence

- No detail provided regarding guidance development process.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Public Health Agency of Canada (PHAC). Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Healthcare Settings. 2016 (last updated). Last accessed 20/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Healthcare settings

Country: Canada

Assessment of evidence

Methodology:

- A thorough literature search from the year 1999 was conducted, but details of this search, including systematic methods if any, are only available on request thus this document was graded SIGN50 level 4.
- Recommendations were graded according to their strength of evidence and/or "predictive power of the study designs from which that data were obtained" (domains listed are "strength of study design, quality of study, number of studies, consistency of results and directness of evidence"). Content relevant to this research question was not in the form of recommendations.
- Evidence gaps were stated to be supplemented by expert opinion. Authors report that consensus was reached for all content included. Following its development, the guidance was subject to external stakeholder review. There is a statement that guidelines should be updated to reflect changes in the evidence.

Main findings:

- "Respiratory hygiene should be encouraged for patients and accompanying individuals who have signs and symptoms of an acute respiratory infection, beginning at the point of initial encounter in any healthcare setting" and "maintained throughout every encounter in the healthcare setting" – graded BII (moderate).
- For outpatient settings: "Patients who cannot defer their routine clinic visit (i.e., those who need assessment of symptoms/condition) should be informed to follow hand hygiene and/or respiratory hygiene recommendations as indicated by their symptoms" – graded CI (weak).
- "[For droplet precautions] The patient should wear a mask […] if tolerated and follow respiratory hygiene during transport" – graded CI (weak).

Limitations:

- Most cited references are not relevant for inclusion in this review. Primary studies address efficacy of surgical masks or respiratory protective equipment, were published pre-2000 or are not relevant. Two guidance sources are cited, one of which is from PHAC and has less relevant content for this topic than this resource, and the other is already captured (WHO, 2007).

Assessment of evidence
• Search methods only available on request.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Public Health Agency Canada (PHAC). Prevention and Control of Influenza during a Pandemic for All Healthcare Settings. 2021 (last updated). Last accessed 20/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence
Setting: All healthcare settings (including existing and temporary healthcare settings). **Country:** Canada **Methodology:** • The annex recommendations are informed by "a synthesis of recent literature reviews related to influenza transmission; published PHAC documents […] and experience with the pandemic H1N1 influenza virus outbreak in Canada in the spring of 2009."

Assessment of evidence

- PHAC members and a multidisciplinary working group were involved in development of the annex and the full guidance is endorsed by “the Public Health Network Council”.
- The guidance is subject to review based on emerging evidence.

Main findings:

“2. Pandemic Period Recommendations for Infection Prevention and Control Activities in Long-Term Care (LTC) Settings”

- In long-term care facilities, “A resident with ILI symptoms should wear a mask (if able) to control their cough or sneezing induced secretions when a susceptible host (other patients, HCWs, visitors, contractors, etc.) is within two metres of the resident.”

Limitations:

- One supportive reference provided for definition of respiratory hygiene, which is superseded but its update is captured in the evidence base for this review.
- Pathogen- and pandemic-specific guidance, thus may lack generalisability to other pathogens and usual clinical practice.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health and Social Care (DHSC). Health and Social Care Act 2008: code of practice on the prevention and control of infections.	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
2022 (last updated). Last accessed 20/02/2025.					

Assessment of evidence

Setting: Health and social care settings

Country: England

Main findings:

- Criteria 5 Summary**:** “That there is a policy for ensuring that people who have or are at risk of developing an infection are identified promptly and receive the appropriate treatment and care to reduce the risk of transmission of infection to other people.”
    - Guidance for compliance: “Ensure that people who have or at risk of developing an infection are identified promptly and receive the appropriate treatment and care to reduce the risk of transmission of infection to other people.”

Limitations:

- Non-specific, due to the wide array of health and care settings this code applies to. Requires facility-level decisions on how best to apply this guidance.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Jensen PA, Lambert LA, Iademarco MF, et al. Guidelines for preventing the transmission of Mycobacterium tuberculosis in health-care settings, 2005. Centers for Disease Control and Prevention (CDC). MMWR Recomm Rep. 2005;54(RR-17):1-141. Last accessed 21/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Settings: Health-care settings

Country: USA

Assessment of evidence

Methods:

Evidence base was made using primary references, expert consultation from experts in the field and review articles.

Main findings:

Prompt Triage

‘Special steps should be taken in settings other than TB clinics. Patients with symptoms suggestive of undiagnosed or inadequately treated TB disease should be promptly referred so that they can receive a medical evaluation. These patients should not be kept in the setting any longer than required to arrange a referral or transfer to an AII room. While in the setting, symptomatic patients should wear a surgical or procedure mask, if possible, and should be instructed to observe strict respiratory hygiene and cough etiquette procedures’.

TB Airborne Precautions for Settings in Which Patients with Suspected or Confirmed TB Disease Are Not Expected To Be Encountered

‘If an AII room is not available, persons with suspected or confirmed infectious TB disease should wear a surgical or procedure mask, if possible. Patients should be instructed to keep the mask on and to change the mask if it becomes wet. If patients cannot tolerate a mask, they should observe strict respiratory hygiene and cough etiquette procedures.’

Inpatient Settings

Emergency Departments (EDs)

‘Before a patient leaves an AII room, perform an assessment of 1) the patient's need to discontinue airborne precautions, 2) the risk for transmission and the patient's ability to observe strict respiratory hygiene, and 3) cough etiquette procedures. Patients with suspected or confirmed infectious TB who are outside an AII room should wear a surgical or procedure mask, if possible. Patients who cannot tolerate masks because of medical conditions should observe strict respiratory hygiene and cough etiquette procedures.’

TB Treatment Facilities

‘TB treatment facilities might include TB clinics, infectious disease clinics, or pulmonary clinics.’

Assessment of evidence

‘Persons with suspected or confirmed infectious TB disease should be promptly placed in an AII room to minimize exposure in the waiting room and other areas of the clinic, and they should be instructed to observe strict respiratory hygiene and cough etiquette procedures. Clinics that provide care for patients with suspected or confirmed infectious TB disease should have at least one AII room. The need for additional AII rooms should be based on the risk assessment for the setting.’

Dental-Care Settings

‘During clinical assessment and evaluation, a patient with suspected or confirmed TB disease should be instructed to observe strict respiratory hygiene and cough etiquette procedures. The patient should also wear a surgical or procedure mask, if possible. Non-urgent dental treatment should be postponed, and these patients should be promptly referred to an appropriate medical setting for evaluation of possible infectiousness. In addition, these patients should be kept in the dental health-care setting no longer than required to arrange a referral.’

Home-Based Health-Care and Outreach Settings:

‘HCWs who provide medical services in the homes of patients with suspected or confirmed infectious TB disease should instruct TB patients to observe strict respiratory hygiene and cough etiquette procedures. HCWs who enter homes of persons with suspected or confirmed infectious TB disease or who transport such persons in an enclosed vehicle should consider wearing at least an N95 disposable respirator (see Respiratory Protection).’

Respirator Options: Special Circumstances

‘Surgical or procedure masks are designed to prevent respiratory secretions of the wearer from entering the air. To reduce the expulsion of droplet nuclei into the air, persons with suspected or confirmed TB disease should be instructed to observe respiratory hygiene and cough etiquette procedures and should wear a surgical or procedure mask, if possible, when they are not in AII rooms. These patients do not need to wear particulate respirators.’

Frequently Asked Questions (FAQs)

- ‘What kind of respiratory protection should HCWs use when transporting patients with suspected or confirmed infectious TB disease?

Assessment of evidence

The risk assessment for the setting should consider the potential for shared air. Drivers, HCWs and other staff who are transporting patients with suspected or confirmed infectious TB disease in an enclosed vehicle should consider wearing an N95 disposable respirator. If the patient has symptoms or signs of infectious TB disease (e.g., productive cough or positive AFB sputum smear result), the patient should wear a surgical or procedure mask, if possible, during transport, in waiting areas, or when other persons are present. Patients who cannot tolerate masks because of medical conditions should observe strict respiratory hygiene and cough etiquette procedures.'

Limitations:

- No methodology.
- Citations in the document are from pre-2000.
- No grading of strength of evidence.
- Guidance almost 20 years old (no updates visible).
- No recommendations relevant to this research question were made in the guidance.
- Evidence is from the USA.
- Pathogen-specific guidance.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of health and social care (DHSC). Pandemic (H1N1) 2009 influenza: a summary of guidance for infection control in healthcare settings 2009. Last accessed 03/03/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Settings: Health-care settings

Country: UK

Methods: There is no evidence of any systematic methods used for guidance development. A limited reference list is provided but there are no references linked to respiratory hygiene, hence it can only be graded as expert opinion.

Main findings:

4. Infection control precautions

“Good respiratory hygiene is essential, i.e. ‘Catch it, bin it, kill it’.

Assessment of evidence

4.1.2 Respiratory hygiene – 'Catch it, bin it, kill it'

Patients, staff and visitors should be encouraged to minimise potential influenza transmission through good respiratory hygiene measures'.

'In common waiting areas or during transport, symptomatic patients may wear surgical masks to minimise the dispersal of respiratory secretions and reduce environmental contamination."

4.2 Applying droplet precautions for pandemic influenza

"In addition to standard infection control precautions, droplet precautions should be used for a patient known or suspected to be infected with influenza.'

4.2.3 Patient transport

'If transport or movement is necessary, consider offering the patient a surgical mask to be worn during transport until the patient returns to the segregated area, to minimise the dispersal of respiratory droplets. As an alternative, good respiratory hygiene should be encouraged – 'Catch it, bin it, kill it' (see section 4.1.2)"

4.5 Segregation and cohorting:

4.5.1 Hospital settings

"The provision of surgical masks to patients with suspected or confirmed pandemic influenza to be worn from the point of assessment or triage in any healthcare setting (except when in a dedicated influenza area) should be considered. As an alternative to a mask, good respiratory hygiene should be encouraged – 'Catch it, bin it, kill it' (see section 4.1.2)"

4.5.2 Primary care, walk-in centres, assessment centres, A&E, dental surgeries

"The provision of surgical masks to patients with suspected or confirmed pandemic influenza to be worn from the point of assessment or triage in any healthcare setting (except when in a dedicated influenza area) should be considered. As an alternative to a mask, good respiratory hygiene should be encouraged – 'Catch it, bin it, kill it' (see section 4.1.2)"

Assessment of evidence

7.3 Antiviral collection points

"[…] it is possible that someone with symptoms of influenza may present themselves. In these circumstances, staff at the collection point should:

offer the individual a surgical mask to wear or encourage good respiratory hygiene – 'Catch it, bin it, kill it' (see section 4.1.2)"

Limitations:

- No recent updates available (last version is from 2009).
- No methodology.
- No references cited.
- Pathogen specific guidance.
- Pandemic specific guidance, may not be generalisable to other scenarios.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Saiman L, Siegel JD, LiPuma JJ, et al. Infection prevention and control guideline for cystic fibrosis: 2013 update. Infect Control Hosp Epidemiol. 2014; 35	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Suppl 1:S1-S67. Doi:10.1086/67688.					

Assessment of evidence

Settings: Infection prevention and control for Cystic Fibrosis patients in healthcare settings

Country: USA

Methods:

This guidance was initially produced by the Cystic Fibrosis (CF) foundation in 2003. New IPC knowledge and challenges prompted an update in 2013 which appears to be the current version online. Its intended users are healthcare workers involved in the care of CF patients. The 2013 update focuses on preventing transmission of CF in ambulatory and inpatient settings. Recommendations have been broken down into 7 sections with the first section outlining core recommendations and the remaining sections focusing on different settings such as ambulatory, inpatient, microbiology, nonhealthcare etc.

Main findings:

Recommendation:

“18. The CF Foundation recommends that all people with CF and their family members/friends perform hand hygiene (with either alcohol-based hand rub or antimicrobial soap and water) when there is potential for contamination of hands with pathogens, such as the following:

a. Entering and exiting CF clinics, clinic exam rooms, or hospital rooms

b. Hands become contaminated with respiratory secretions (e.g., after coughing or performing PFTs or chest physiotherapy)

“20. The CF Foundation recommends that people with CF be instructed to follow Respiratory Hygiene practices to contain their secretions when coughing or sneezing (i.e, cough into a tissue, immediately discard soiled tissue into a trash receptacle, and perform hand hygiene after disposing of soiled tissues). A covered trash receptacle with a foot pedal is preferred.

Assessment of evidence

IV.C. Hand Hygiene

“Healthcare personnel should perform thorough hand hygiene, as presented in the figures in the 2009 WHO guideline, before and after contact with patients and whenever hands are contaminated with respiratory secretions or other body fluids. Contamination may occur from direct patient care activities, from contact with surfaces or equipment in a patient’s environment, and/or following coughing or sneezing by healthcare personnel.”

People with CF and families/visitors

“Masks prevent ill individuals from spreading infectious respiratory droplets. For people entering healthcare settings, availability of facemasks is an essential component of respiratory hygiene and cough etiquette, particularly during times of seasonal community-onset respiratory infections (e.g., influenza)”

“Thus, to prevent transmission by the droplet route people with CF should routinely don a facemask of appropriate size when entering healthcare settings where they are likely to encounter others with CF. Such settings include the common areas of the CF clinic, when leaving their hospital room, or when leaving the clinic exam room. However, it is possible that very young children, people in respiratory distress, and people exercising may not be able to tolerate a mask. Such individuals should be instructed to practice other components of respiratory hygiene (i.e., cough into a tissue, discard the tissue, perform hand hygiene after coughing) and remain at least 6 feet from others with CF”.

Limitations:

- Lack of clear methodology.
- Evidence tables only available on request (lack of transparency).
- Evidence base largely made up of expert opinion and consensus.
- Disease specific guidance, not applicable to other scenarios.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Infection prevention and control in the context of COVID-19: a guideline. (WHO/2019-nCoV/IPC/guideline/2023.4) Geneva: World Health Organization; 2023. Last accessed 27/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Country: International

Setting: Healthcare and community settings

Methods:

This is an international guidance document produced by the World Health Organization. Recommendations for infection prevention and control practices for COVID-19 are set out within the context of healthcare and community settings; this is the 7th update of the document. The target audience for this guidance is made up of public health professionals, IPC professionals, wider health and care workers, policy

Assessment of evidence

makers and managers. A rapid review methodological approach was used due to time constraints; therefore, the AGREE tool for appraisal was not appropriate to use in this case.

Main findings:

'Standard precautions are the minimum standard of IPC practices that should be used by all health and care workers during the care of all patients, at all time, in all settings…Key elements of standard precautions include: 1. Risk assessment, 2. Hand hygiene, 3. Respiratory hygiene and cough etiquette…'

'When caring for someone on airborne precautions, health and care workers should: Instruct the patient to wear a medical mask and follow respiratory hygiene and cough etiquette when transport is necessary.'

Components in children

Children 5 and under

'Children should be taught to perform frequent hand hygiene and respect respiratory etiquette using an age-appropriate approach and materials'.

Children aged 6-11

'The use of masks is part of a comprehensive package of preventative measures to reduce transmission that includes ventilation, physical distance, hand hygiene and respiratory etiquette'.

Adolescents aged 12 years and older.

'The use of masks is part of a comprehensive package of preventative measures to reduce transmission that includes ventilation, physical distance, hand hygiene and respiratory etiquette'.

Limitations:

- This guidance was produced in response to COVID-19 using a rapid review methodology and therefore it is unlikely that the approach was robust as no systematic review was conducted. In addition, it is possible that guidance may update in future iterations due to the changing nature of tackling COVID-19.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Guidelines on tuberculosis infection prevention and control. Geneva. World Health Organization; (WHO/CDS/TB/2019.1) 2019. Last accessed 20/02/2025.	Guidelines	AGREE II: Recommend with modifications	N/A	N/A	N/A

Assessment of evidence

Country: International

Setting: Healthcare settings and other groups outside of the healthcare system

Methods:

These guidelines, produced by the World Health Organization, outline interventions and recommendations to reduce the risk of *M. tuberculosis* transmission within both healthcare and non-healthcare settings; they are aimed to inform national level and local level IPC policies. The target audience includes national and regional policy makers, IPC services and inpatient and outpatient facilities. The evidence for these guidelines were produced using a systematic review process; a WHO steering group, Guideline Development Group and an External Review Group were also established during the process. Although the methods for collecting the data were systematic,

Assessment of evidence

the literature identified as evidence was limited and of a low quality. Animal studies were not excluded from the results and there was a lack of literature comparing the different materials used to cover the mouth during coughing and sneezing.

Main findings:

'The second study indicated that the use of surgical masks by people with presumed or confirmed TB was associated with 14.8% risk reduction in incident TB infection among health workers. Estimates from the two studies in which TB disease was measured showed a slight or no reduction in TB incidence in health workers after surgical masks were used by patients; the assessment of the effect of respiratory hygiene on the development of active TB disease in health workers showed a reduction in incident TB of 0.29 cases per 100 person-years in one study and of 0.5% in another.'

'The Guideline Development Group stressed that, despite limited evidence on the impact of respiratory hygiene (e.g., surgical masks worn by infectious TB patients, and cough etiquette) in settings of interest, the use of this measure as part of a composite intervention can help to reduce transmission of *M. tuberculosis*.'

'The use of respiratory hygiene measures applies to individuals with confirmed or presumed TB in all health care settings…'

'Respiratory hygiene must be implemented at all times. The use of surgical masks, in particular; is of utmost importance in waiting rooms; during patient transport and in any situation which can lead to temporary exposure to *M. tuberculosis*.'

Children

'The Guidelines Development Group acknowledged that use of surgical masks in paediatric TB patients can have a negative psychosocial impact on children and families; nevertheless, children should be provided with masks until they are initiated in effectives treatment to ensure that they are non-infectious.'

Severely ill patients

'The use of surgical masks may be poorly tolerated in severely ill patients. Therefore, health care authorities need to ensure the proper implementation of interventions within the hierarchy of controls for preventing *M. tuberculosis* transmission.'

Assessment of evidence

Limitations:

- Five relevant studies were identified within the systematic review process. However, four of the studies were before and after studies that used a bundled intervention. The fifth study was a prospective cohort study using an animal model which measured the effect of surgical masks used by MDR-TB patients on transmission to guineapigs exposed to ward air.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Infection prevention and control of epidemic – and pandemic-prone acute respiratory infections in health care. Geneva. World Health Organization. 2014. Last accessed 20/02/2025.	Guidelines	AGREE II: Recommend with modifications	N/A	N/A	N/A

Assessment of evidence

Country: International

Setting: healthcare settings

Methods:

This is an update to Guidelines detailing IPC measures for containing respiratory infections, produced by the World Health Organization. The target audience is primarily IPC professionals and members of IPC teams, healthcare policy makers and health care workers. The evidence base is formed of a field evaluation, literature review and practical experience and lessons learnt from pandemic Influenza A (H1N1) 2009. A systematic review process was followed, and the quality of evidence was assessed using the GRADE approach.

Main findings:

'In people with ARIs, encourage the use of respiratory hygiene (i.e. covering the mouth and nose during coughing or sneezing with a medical mask (surgical or procedure mask), cloth mask, tissue, sleeve or flexed elbow), followed by hand hygiene, to reduce the dispersal of respiratory secretions containing potentially infectious particles (Strong recommendation, very low quality of evidence).'

'Encourage the use of medical masks by patients with ARI during transport or when care is necessary outside of the isolation room or area. If medical masks are not available or not tolerated by the patient, other methods to reduce the dispersal of respiratory secretions, including covering the mouth and nose with a tissue or flexed elbow during coughing or sneezing, can be used, and should be followed by hand hygiene.'

Limitations:

- These guidelines were published in 2014 (11 years ago) before the COVID-19 pandemic and so the recommendations are based on evidence that may not be relevant today.
- Out-dated as per planned update, should have been updated in 2016.
- No explanations were given for the strength of evidence rating with each recommendation.

Question 4: What is the evidence to support hand hygiene as an aspect of cough etiquette and respiratory hygiene?

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Rathore MH, Jackson MA, and Committee on Infectious Diseases. Infection Prevention and Control in Pediatric Ambulatory Settings. Pediatrics. 2017;140(5): e20172857.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Ambulatory care facilities

Country: USA

Methods: No methods have been provided of how evidence was collated or assessed, although the following statement is provided; 'Policy statements from the American Academy of Pediatrics benefit from expertise and resources of liaisons and internal (AAP) and external reviewers'. Based on this statement, it appears that expert opinion has informed the statement. The authors also state that this policy statement should not serve as a standard of medical care.

Assessment of evidence

Main findings:

“Visual alerts should be posted that emphasize the importance of (1) covering the nose and mouth when coughing or sneezing, (2) coughing and sneezing into the elbow rather than hand, (3) the appropriate use and disposal of tissues, (4) performing hand hygiene whenever hands have been in contact with respiratory secretions.”

From Table 2:

“Perform hand hygiene (i.e., use of alcohol-based hand rub, hand washing with soap and water, or use of an antiseptic handwash) after having contact with respiratory tract secretions and contaminated objects and materials”.

Limitations:

- Lack of systematic methods to put together the evidence base.
- Guidance applicable to ambulatory settings and may not be generalisable to other health and care settings.
- The quality of references used for the evidence base is poor (a qualitative piece of evidence from YouTube and an expert opinion from CDC).

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Kiely PM, Lian KY, Napper G et al. Influenza A(H1N1) and infection control guidelines for optometrists. Clinical & experimental optometry. 2009; 92(6): 490–494.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Optometry

Country: Australia

Methods: A narrative guideline from Australia. No information is provided regarding the guidance development process, nor is there evidence of any systematic review been conducted hence it can only be graded as expert opinion. It cites one guideline from 2007 which is from the same organisation and a narrative expert guideline.

Main findings:

A patient with a history of travel to an area affected by the virus or who has been in contact with a confirmed case of Influenza A(H1N1) or who presents with an influenza-like illness should be given a surgical mask [P2 (N95)] to wear immediately and moved to a separate room or, if this is not possible, they should be separated from people in the waiting room by at least one metre. These patients should be provided with tissues and asked to use them to cover the nose and mouth when coughing or sneezing and to dispose of them immediately into a hands-free waste receptacle.

Assessment of evidence

They should also be asked to wash their hands after contact with respiratory secretions and contaminated objects or materials and to avoid touching their face."

Limitations:

- Guidance is from 2009, hence a bit outdated and no update available.
- Guidance cannot be generalised to settings out with optometry.
- No details regarding guidance development process.
- No information provided regarding the effectiveness of these strategies.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
National Health and Medical Research Council (NHMRC). Australian Guidelines for the Prevention and Control of Infection in Healthcare. 2019. v.11.23. Updated 28 February 2024.	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Last accessed 21/08/2025.					

Assessment of evidence

Country: Australia

Setting: Acute health care settings

Methods:

The main target audience of the guidance is healthcare workers working within acute health and care settings, but authors state that certain sections can also be beneficial for other health and care settings. The evidence base is formed of an amalgamation of "international IPC guidelines, systematic literature reviews, horizon scans, work on HAI prevention from the Australian Commission on Safety and Quality in Health Care (ACSQHC), national discipline-based infection control guidelines, and Australian Standards". Authors outline a specific process for development and grading of recommendations however, there were no formal recommendations presented for cough etiquette and respiratory hygiene. Cough etiquette and respiratory hygiene only appears as part of a bundled approach with other standard infection control measures with no citations provided.

Main findings:

"Table 10. Steps in respiratory hygiene and cough etiquette

Anyone with signs and symptoms of a respiratory infection, regardless of the cause, should follow or be instructed to follow respiratory hygiene and cough etiquette as follows:

- Cover the nose/mouth with disposable single-use tissues when coughing, sneezing, wiping and blowing noses.
- Use tissues to contain respiratory secretions.
- Dispose of tissues in the nearest waste receptacle or bin after use.

Assessment of evidence
• If no tissues are available, cough or sneeze into the inner elbow rather than the hand. • Practice hand hygiene after contact with respiratory secretions and contaminated objects/materials.” **Limitations:** • No references provided for stated evidence.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Clinical management of COVID-19: living guideline. Geneva: World Health Organization; 18 August, 2023. (WHO/2019-nCoV/clinical/2023.2) Last accessed 07/01/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Health facilities

Country: International

Methods: The guideline development group for these international guidelines had global representation. The recommendations were formulated using the GRADE approach and expert opinion. Systematic methods for evidence synthesis were not consistently used for all sections of this document and external groups were used to conduct these processes. There is lack of transparency regarding development of recommendations. In addition, there were no recommendations made for 'cough etiquette' hence the AGREE tool was not used.

Main findings:

Screen for early recognition of suspected COVID-19 patients and rapid implementation of source control measures

'Suspected or confirmed COVID-19 patient to wear a medical mask and placement in a separate, well-ventilated area, ideally an isolation room/area if available. Keep at least 1 m distance between patients. Instruct all patients to cover nose and mouth during coughing or sneezing with tissue or flexed elbow, dispose of tissues safely immediately after and perform hand hygiene after contact with respiratory secretions. In areas with COVID-19 community transmission, restrict visitors to those that are essential such as the parents of pediatric patients and caregivers and ask them to wear a mask.'

Practices the mother should perform during all infant and childcare

'Perform respiratory hygiene: sneeze or cough into a tissue and immediately dispose of the tissue. Hands should immediately be washed with soap and water or alcohol-based hand rub.'

Limitations:

- The approach towards COVID-19 has evolved over time and guidance may update in future versions.
- There appears to be no systematic review or meta-analysis conducted to support this information nor references quoted.
- Guidance limited to COVID-19 and not generalisable to other respiratory infections.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee. Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. 2007 (updated 2024). Last accessed 25/10/2024.	Guidance	Level 4	N/A	N/A	N/A
Assessment of evidence					
Setting: IPC in healthcare settings **Country:** USA					

Assessment of evidence

Methods: The document a list of members of the guidance development group and their qualifications. Each section of the document contains information on an IPC topic along with recommendations, although it is unclear how the evidence cited contributed to the grade of evidence. There is also no evidence of a systematic literature review being conducted or information on the quality of individual studies.

Main findings:

'The elements of Respiratory Hygiene and cough Etiquette include:

1. education of healthcare facility staff, patients, and visitors;
2. posted signs, in language(s) appropriate to the population served, with instructions to patients and accompanying family members or friends;
3. source control measures (e.g., covering the mouth/nose with a tissue when coughing and prompt disposal of used tissues, using surgical masks on the coughing person when tolerated and appropriate);
4. hand hygiene after contact with respiratory secretions; and
5. spatial separation, ideally >3 feet, of persons with respiratory infections in common waiting areas when possible.

Table 4. **Recommendations for Application of Standard Precautions for the Care of All Patients in All Healthcare Settings**

'Instruct symptomatic persons to cover mouth/nose when sneezing/coughing; use tissues and dispose in no-touch receptacle; observe hand hygiene after soiling of hands with respiratory secretions; wear surgical mask if tolerated or maintain spatial separation, >3 feet if possible.'

Limitations:

- This guidance provides some recommendations related to cough etiquette although it is unclear how the citations quoted contributed to the grading of the evidence.
- Multiple citations have expired or been updated since.
- No evidence of a systematic review been conducted on this topic.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Basic Infection Control And Prevention Plan for Outpatient Oncology Settings. 2011. Last accessed 17/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Outpatient oncology settings

Country: USA

Methods: There was no specific guidance development method provided. Authors explained that this document has been developed to serve as a model for a basic infection control and prevention plan. Any advice given within the 'model' are reported to be based on CDC's evidence-based guidelines and guidelines from professional societies, for example, oncology nursing society.

Main findings:

- Perform hand hygiene after contact with respiratory secretions and contaminated objects/materials"
- 'Healthcare personnel with a respiratory infection avoid direct patient contact; if this is not possible, then a facemask should be worn while providing patient care and frequent hand hygiene should be reinforced'

Assessment of evidence

Limitations:

- No methodology.
- Narrative guidance, with no formal recommendations.
- Poorly linked to underlying evidence.
- Underlying evidence is from the USA.
- Designed to be used as a practical model on which to adapt the specific department's needs, rather than used as concrete guidance.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Summary of Infection Prevention Practices in Dental Settings. 2016. Last accessed 17/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Dental settings

Country: USA

Main findings:

- Recommendations [for patients with respiratory symptoms]: “perform hand hygiene after hands have been in contact with respiratory secretions.”

Limitations:

- No methodology.
- Risk of duplicating information, as cites 2007 isolation guidelines already captured.
- Sources cited have been removed, updated, or already captured.
- Recommendations are not graded.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Prevention and Control for Hospitalized MERS Patients. 2024.	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Last accessed 17/02/2025.					

Assessment of evidence

Setting: Hospitals and other Healthcare settings.

Country: USA

Main findings:

- “how and when to perform hand hygiene” discussed as an aspect of respiratory hygiene and cough etiquette for symptomatic patients.

Limitations:

- No methodology.
- No references.
- Pathogen-specific guidance.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Infection Prevention and Control Strategies for Seasonal Influenza in Healthcare Settings. 2021. Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Healthcare settings

Country: USA

Main findings:

- “perform hand hygiene” particularly following contact with respiratory secretions.

Limitations:

- No methodology.
- No signposting to evidence.

Assessment of evidence

- Pathogen-specific guidance, but same content as other CDC guidance (risk of duplicating information).

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health & Social Care (DHSC). Infection prevention and control: resource for adult social care 2024 (last updated). Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Adult social care (including long-term care and non-NHS services).

Country: England

Main findings:

- “clean hands after coughing, sneezing, using tissues, or after contact with respiratory secretions or objects contaminated by these secretions”

Limitations:

- No methodology.

Assessment of evidence

- No references provided.
- Generalisability may be limited as this guidance is for non-NHS services and long-term care facilities amongst other settings and is for England only. The content outlined is like other guidance so presumably this is standard practice and/or transferable.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health & Social Care (DHSC). Infection prevention and control: quick guide for care workers. 2024 (last updated). Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Care settings

Country: England

Main findings:

- Clean your hands after coughing, sneezing, using tissues or after contact with respiratory secretions such as saliva or mucus.

Assessment of evidence

Limitations:

- No methodology.
- No references provided.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
European Centre for Disease Prevention and Control (ECDC). Infection prevention and control and preparedness for COVID-19 in healthcare settings. 2021. Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Healthcare settings (including long-term care facilities)

Country: EU/EEA region and the UK

Assessment of evidence

Main findings:

- Advice to perform hand hygiene is listed after covering mouth during coughing, but it is unclear if hand hygiene should be performed in relation to coughing: “Possible COVID-19 patient cases should wear a face mask or cover their mouth with a tissue when coughing and perform hand hygiene.”

Limitations:

- No methodology provided for update.
- Evidence poorly linked to text (no in-text citations).
- Pathogen-specific guidance thus may lack generalisability and/or duplicate other sources.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Interim infection prevention and control guidance for care of patients with suspected or confirmed filovirus haemorrhagic fever in health-care	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
settings, with focus on Ebola. 2014. Last accessed 19/02/2025.					

Assessment of evidence

Setting: Healthcare facilities

Country: International

Methodology:

- The evidence base for the guidance included “WHO and other international reference documents” available at the time publication during an Ebola outbreak.
- The guidance was also subject to expert opinion consensus and external expert review.

Main findings:

- “perform hand hygiene after contact with respiratory secretions.”

Limitations:

- Interim guidance, with no detail on whether a final version will be published.
- Pathogen-specific guidance thus may lack generalisability and/or duplicate other sources.
- Poor link between evidence and relevant content.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Clinical care of severe acute respiratory infections – Tool kit. 2022 (last updated). Last accessed 19/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Hospitals

Country: Low- and middle-income countries

Main findings:

- "perform hand hygiene after contact with respiratory secretions (such as coughing, sneezing or blowing nose)."

Limitations:

- No methodology.
- Guidance has potential to lack generalisability as it is targeted towards low- and middle- income countries and active epidemics from emerging viral respiratory pathogens, however, content is very similar to other guidance included.
- Unclear whether content has been updated for relevant sections or represents guidance from past iterations.
- Evidence underlying relevant content is unclear.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
European Centre for Disease Prevention and Control (ECDC). Protect yourself against flu: Learn more about preventive measures. 2024 (last updated). Last accessed 19/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Not reported, appears to apply to all settings (healthcare and community)

Country: EU/EEA region

Main findings:

- "Wash your hands thoroughly with soap and water, especially after handling your used tissues after coughing or sneezing."

Limitations:

- No methodology.
- Poor association to evidence within the text.
- Pathogen-specific guidance thus may lack generalisability and/or duplicate other sources.

Assessment of evidence
• Not healthcare setting specific as discusses management of flu at home and in the community. • Reference list cites a number of expert opinion guidance documents already captured, thus there is a risk of duplicating information.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health (Ireland). NCEC National Clinical Guideline No. 30 Infection Prevention. 2023 (last updated). Last accessed 19/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence
Setting: Health and social care settings **Country:** Republic of Ireland **Main findings:** • "Hands can become contaminated through contact with respiratory secretions when coughing or sneezing. Contaminated hands can lead to the cross-transmission of infectious microorganisms in non-outbreak situations and contribute to outbreaks involving

Assessment of evidence

organisms such as meticillin resistant Staphylococcus aureus (MRSA), vancomycin resistant enterococci (VRE) and multi drug resistant Gram-negative (MDRGN) microorganisms such as Acinetobacter spp".

- "Hands must be cleaned after coughing, sneezing, using tissues, after contact with respiratory secretions or objects contaminated by these secretions."

Limitations:

- No in-text citations, so it is unclear which cited reference sources were used to inform relevant content.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Public Health Agency of Canada (PHAC). Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Healthcare Settings. 2016 (last updated). Last accessed 20/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Healthcare settings

Country: Canada

Methodology:

- A thorough literature search from the year 1999 was conducted, but details of this search, including systematic methods if any, are only available on request thus this document was graded SIGN50 level 4.
- Recommendations were graded according to their strength of evidence and/or "predictive power of the study designs from which that data were obtained" (domains listed are "strength of study design, quality of study, number of studies, consistency of results and directness of evidence"). Content relevant to this research question was not in the form of recommendations.
- Evidence gaps were stated to be supplemented by expert opinion. Authors report that consensus was reached for all content included. Following its development, the guidance was subject to external stakeholder review. There is a statement that guidelines should be updated to reflect changes in the evidence.

Main findings:

- Hand hygiene discussed in association with cough etiquette and respiratory hygiene: "follow hand hygiene and/or respiratory hygiene recommendations as indicated by their symptoms."

Limitations:

- Most cited references are not relevant for inclusion in this review. Primary studies address efficacy of surgical masks or respiratory protective equipment, were published pre-2000 or are not relevant. Two guidance sources are cited, one of which is from PHAC and has less relevant content for this topic than this resource, and the other is already captured (WHO, 2007).
- It is unclear if other extracted content represents narrative recommendations, expert opinion guidance (as per methods, see below) or supportive information.
- Search methods only available on request.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of health and social care (DHSC). Pandemic (H1N1) 2009 influenza: a summary of guidance for infection control in healthcare settings. 2009. Last accessed: 03/03/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Settings: Health-care settings

Country: UK

Methods: There is no evidence of any systematic methods used for guidance development. A limited reference list is provided but there are no references linked to respiratory hygiene, hence it can only be graded as expert opinion.

Main findings:

“4.1.2 Respiratory hygiene – ‘Catch it, bin it, kill it’

Hands should be cleaned (using soap and water, if possible, otherwise using alcohol handrub) after coughing, sneezing, using tissues or after any contact with respiratory secretions and contaminated objects.”

Assessment of evidence

Limitations:

- No recent updates available (last version is from 2009).
- No methodology.
- No references cited.
- Pathogen specific guidance.
- Pandemic specific guidance, may not be generalisable to other scenarios.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Public Health Scotland (PHS). Guidance for the public health management of acute respiratory infections (ARI) in community, social and residential care settings 2024 (last updated 2025).	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Date accessed: 03/03/2025.					

Assessment of evidence

Setting: Scottish health and social care settings

Country: UK (Scottish guidance)

Methods:

This guidance is for managing acute respiratory infections (ARI) in both higher and lower risk settings (although it does not include information on outbreak management in hospitals or clinical management of ARIs). It also excludes certain pathogen specific guidance for which PHS already provides specific guidance for. A link is provided for the guidance development process document and details provided for the consultations required, although guidance clearly states that the supporting evidence base used to formulate this guidance was largely made up of expert opinion.

Main findings:

Hand washing and respiratory hygiene

“Ensuring effective hand hygiene, respiratory and cough hygiene assists everyone in reducing onwards transmission.

- Covering mouth and nose with disposable tissues reduces onward transmission of viruses and bacteria when coughing or sneezing. Tissues should be placed in a bin immediately and hands washed. When tissues are not available, coughing or sneezing into the crook of the elbow is advised, and not into hands.
- Washing hands removes viruses and other micro-organisms, making infection less likely when people touch their faces. Using soap (preferably liquid soap) and warm water is the most effective way to clean hands, especially if they are visibly dirty. Hands should be thoroughly dried after washing. This should be done regularly throughout the day, especially before meals and after toileting.

Assessment of evidence

Hand sanitiser should only be used when soap and water are not available. It is important to note that the use of hand sanitiser is not effective against gastrointestinal viruses (e.g., norovirus).

- Individuals who are unable to wash their hands independently, such as young children or older adults, should be supported to do so."

Limitations:

- Lack of systematic methodology.
- Lack of references.
- Disease- specific guidance (i.e., acute respiratory infections) hence may lack generalisability to other conditions.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Saiman L, Siegel JD, LiPuma JJ, et al. Infection prevention and control guideline for cystic fibrosis: 2013 update. Infect Control Hosp Epidemiol. 2014; 35 Suppl 1:S1-S67. Doi:10.1086/67688.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Settings: Infection prevention and control for Cystic Fibrosis patients in healthcare settings

Country: USA

Methods:

This guidance was initially produced by the Cystic Fibrosis (CF) foundation in 2003. New IPC knowledge and challenges prompted an update in 2013 which appears to be the current version online. Its intended users are healthcare workers involved in the care of CF patients. The 2013 update focuses on preventing transmission of CF in ambulatory and inpatient settings. Recommendations have been broken down into 7 sections with the first section outlining core recommendations and the remaining sections focusing on different settings such as ambulatory, inpatient, microbiology, nonhealthcare etc.

Main findings:

Recommendation:

“18. The CF Foundation recommends that all people with CF and their family members/friends perform hand hygiene (with either alcohol-based hand rub or antimicrobial soap and water) when there is potential for contamination of hands with pathogens, such as the following:

a. Entering and exiting CF clinics, clinic exam rooms, or hospital rooms

b. Hands become contaminated with respiratory secretions (e.g., after coughing or performing PFTs or chest physiotherapy)

“20. The CF Foundation recommends that people with CF be instructed to follow Respiratory Hygiene practices to contain their secretions when coughing or sneezing (ie, cough into a tissue, immediately discard soiled tissue into a trash receptacle, and perform hand hygiene after disposing of soiled tissues). A covered trash receptacle with a foot pedal is preferred.

IV.C. Hand Hygiene

“Healthcare personnel should perform thorough hand hygiene, as presented in the figures in the 2009 WHO guideline, before and after contact with patients and whenever hands are contaminated with respiratory secretions or other body fluids. Contamination may occur

Assessment of evidence

from direct patient care activities, from contact with surfaces or equipment in a patient's environment, and/or following coughing or sneezing by healthcare personnel."

Limitations:

- Lack of clear methodology.
- Evidence tables only available on request (lack of transparency).
- Evidence base largely made up of expert opinion and consensus.
- Disease specific guidance, not applicable to other scenarios.

Question 5: What equipment should be available to support effective cough etiquette and respiratory hygiene?

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Rathore MH, Jackson MA, and Committee on Infectious Diseases. Infection Prevention and Control in Pediatric Ambulatory Settings. Pediatrics. 2017;140(5): e20172857. https://doi.org/10.1542/peds.2017-2857	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Ambulatory care facilities

Country: USA

Methods: No methods have been provided of how evidence was collated or assessed, although the following statement is provided; 'Policy statements from the American Academy of Pediatrics benefit from expertise and resources of liaisons and internal (AAP) and external reviewers'. Based on this statement, it appears that expert opinion has informed the statement. The authors also state that this policy statement should not serve as a standard of medical care.

Assessment of evidence

Main findings:

“Resources to enable patients and families to adhere to respiratory hygiene and cough etiquette principles must also be provided. These include resources to perform hand hygiene, masks for use by coughing patients and family members, and tissues and trash receptacles for disposing of used tissues.”

“Components of respiratory hygiene and cough etiquette for staff

- Educate patients and accompanying people on the need for and components of respiratory hygiene and cough etiquette.
- In reception area, have tissues and no-touch receptacles for used tissue disposal available.
- If feasible, provide conveniently located dispensers of alcohol-based hand rub with instructions for use (or have a sink available with consistently available soap and disposable towels).
- When space and chair availability permit, cluster chairs for a coughing patient and accompanying people at least 3 feet away from other patients.
- Consider having masks available for distribution to symptomatic patients by staff.
- In addition to hand hygiene before and after patient contact, health care personnel should consider wearing a mask when examining an ambulatory patient with suspected influenza”

FEASIBILITY:

“Some features of respiratory hygiene and cough etiquette may be difficult to implement. For example, in many ambulatory settings, supplying masks for patients with suspected respiratory tract infection may not be feasible, and ensuring effective use of these masks in young children may not be possible.”

Limitations:

- Guidance from ambulatory settings, may not be generalisable to other settings.
- No systematic methods visible for evidence synthesis.

Assessment of evidence
• Some references used for the information are pre-2000.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Kiely PM, Lian KY, Napper G et al. Influenza A(H1N1) and infection control guidelines for optometrists. Clinical & experimental optometry. 2009; 92(6): 490–494. https://doi.org/10.1111/j.1444-0938.2009.00420.x.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence
Setting: Optometry **Country:** Australia

Assessment of evidence

Methods: A narrative guideline from Australia. No information is provided regarding the guidance development process, nor is there evidence of any systematic review been conducted hence it can only be graded as expert opinion. It cites one guideline from 2007 which is from the same organisation and a narrative expert guideline.

Main findings:

"A patient with a history of travel to an area affected by the virus or who has been in contact with a confirmed case of Influenza A(H1N1) or who presents with an influenza-like illness should be given a surgical mask [P2 (N95)] to wear immediately and moved to a separate room or, if this is not possible, they should be separated from people in the waiting room by at least one metre. These patients should be provided with tissues and asked to use them to cover the nose and mouth when coughing or sneezing and to dispose of them immediately into a hands-free waste receptacle. They should also be asked to wash their hands after contact with respiratory secretions and contaminated objects or materials and to avoid touching their face. Reinforcement of the need for infection control procedures for patients such as frequent handwashing, appropriate cough, and sneeze etiquette, used tissue disposal and rescheduling of non-urgent appointments can be achieved through signs, posters, and information leaflets in the practice visible to both staff and patients."

Limitations:

- Guidance is from 2009, hence a bit outdated and no update available.
- Guidance cannot be generalised to settings out with optometry.
- No details regarding guidance development process.
- No information provided regarding the effectiveness of these strategies.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
National Health and Medical Research Council (NHMRC). Australian Guidelines for the Prevention and Control of Infection in Healthcare. 2019. v.11.23. Updated 28 February 2024. Last accessed 21/08/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Country: Australia

Setting: Acute health care settings

Methods: The main target audience of the guidance is healthcare workers working within acute health and care settings, but authors state that certain sections can also be beneficial for other health and care settings. The evidence base is formed of an amalgamation of "international IPC guidelines, systematic literature reviews, horizon scans, work on HAI prevention from the Australian Commission on Safety and Quality in Health Care (ACSQHC), national discipline-based infection control guidelines, and Australian Standards". Authors outline a specific process for development and grading of recommendations however, there were no formal recommendations presented

Assessment of evidence

for cough etiquette and respiratory hygiene. Cough etiquette and respiratory hygiene only appears as part of a bundled approach with other standard infection control measures with no citations provided.

Main findings:

"Table 10. Steps in respiratory hygiene and cough etiquette

Anyone with signs and symptoms of a respiratory infection, regardless of the cause, should follow or be instructed to follow respiratory hygiene and cough etiquette as follows:

- Cover the nose/mouth with disposable single-use tissues when coughing, sneezing, wiping and blowing noses.
- Use tissues to contain respiratory secretions.
- Dispose of tissues in the nearest waste receptacle or bin after use.
- If no tissues are available, cough or sneeze into the inner elbow rather than the hand.
- Practice hand hygiene after contact with respiratory secretions and contaminated objects/materials.
- Keep contaminated hands away from the mucous membranes of the mouth, eyes and nose.
- In healthcare facilities, patients with symptoms of respiratory infections should sit as far away from others as possible. If available, healthcare facilities may place these patients in a separate area while waiting for care."

"Healthcare workers should also assist patients (e.g., elderly, children) who need assistance with containment of respiratory secretions. Those who are immobile will need a receptacle (e.g., plastic bag) readily at hand for the immediate disposal of used tissues and will need to be offered hand hygiene facilities."

"In primary care and other office-based practice, examples of appropriate implementation of droplet precautions include segregation in waiting rooms for patients with violent or frequent coughing, and the availability of tissues, alcohol-based hand rub and a waste bin so that patients can practice respiratory hygiene and cough etiquette".

Assessment of evidence
'When transfer of a patient on droplet precautions within or between facilities is necessary, there is the potential for other patients and healthcare workers to come in contact with infectious agents when the patient coughs or sneezes. This can be addressed by asking the patient to wear a fluid resistant surgical mask while they are being transferred and to follow respiratory hygiene and cough etiquette.' **Limitations:** • No references provided for stated evidence.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Clinical management of COVID-19: living guideline. Geneva: World Health Organization; 18 August, 2023. (WHO/2019-nCoV/clinical/2023.2) Last accessed 07/01/2025.	Guidance	Level 4	N/A	N/A	N/A
Assessment of evidence					
Setting: Health facilities managing COVID-19 patients					

Assessment of evidence

Country: International

Methods: This guidance was put together by the WHO, the guideline development group had global representation. The recommendations were put together by GRADE approach and expert opinion. Systematic methods for evidence synthesis were not consistently used for all sections of this document and external groups were used to conduct the process. There is lack of transparency regarding development of recommendations. In addition, there were no recommendations made for 'cough etiquette' hence the AGREE tool was not used.

Main findings:

Screen for early recognition of suspected COVID-19 patients and rapid implementation of source control measures

'Suspected or confirmed COVID-19 patient to wear a medical mask and placement in a separate, well-ventilated area, ideally an isolation room/area if available. Keep at least 1 m distance between patients. Instruct all patients to cover nose and mouth during coughing or sneezing with tissue or flexed elbow, dispose of tissues safely immediately after and perform hand hygiene after contact with respiratory secretions. In areas with COVID-19 community transmission, restrict visitors to those that are essential such as the parents of pediatric patients and caregivers and ask them to wear a mask.'

Practices the mother should perform during all infant and childcare

'Perform respiratory hygiene: sneeze or cough into a tissue and immediately dispose of the tissue. Hands should immediately be washed with soap and water or alcohol-based hand rub.'

Limitations:

- The approach towards COVID-19 has evolved over time and guidance may update in future versions.
- There appears to be no systematic review or meta-analysis conducted to support this information nor references quoted.
- Guidance limited to COVID-19 and not generalisable to other respiratory infections.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
American Academy of Ophthalmology. INFORMATION STATEMENT Infection Prevention in Eye Care Services and Operating Areas. 2012. Last accessed 25/10/2024.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Eye Care Services and Operating Areas

Country: USA

Methods:

A list of sources has been provided at the beginning of the document which include regulations, CDC guidelines, current research and literature, recommendations and standards from professional organisations that were used to produce this document although there is no indication of any systematic methods or how they were used for evidence synthesis.

Main findings:

‘Control measures for patients include: Covering the mouth/nose with a tissue when coughing and prompt disposal of used tissues and/or offering a surgical mask to the coughing person when tolerated.’

Assessment of evidence

Control measures for HCWs include: Wearing a mask with eye protection when within 3-6 feet of the patient when the coughing patient is unable to cover mouth and nose with tissue or mask. Respiratory etiquette also includes preventing the HCW's respiratory droplets from infecting the patient. It is courtesy and good practice for the HCW to wear a mask if the following personal conditions exist while working: sore/scratchy throat, cough, runny nose, halitosis, cold symptoms. Wearing the mask prevents the patient from breathing the droplets of the HCW and prevents potential exposure. Healthcare workers who have a respiratory infection are advised to avoid direct patient contact, especially with high-risk patients.'

Limitations:

- No evidence of systematic methods to produce the guidance document.
- Guidance applicable only to eye care services and may not be generalisable to other healthcare settings.
- Guidance is more than 10 years old.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee. Guideline for Isolation Precautions: Preventing	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Transmission of Infectious Agents in Healthcare Settings. 2007 (updated 2024). Last accessed 25/10/2024.					

Assessment of evidence

Setting: IPC in healthcare settings

Country: USA

Methods: The document a list of members of the guidance development group and their qualifications. Each section of the document contains information on an IPC topic along with recommendations, although it is unclear how the evidence cited contributed to the grade of evidence. There is also no evidence of a systematic literature review being conducted or information on the quality of individual studies.

Main findings:

I.C.4. Severe Acute Respiratory Syndrome (SARS).

'Early detection of cases is accomplished by screening persons with symptoms of a respiratory infection for history of travel to areas experiencing community transmission or contact with SARS patients, followed by implementation of Respiratory Hygiene and cough Etiquette (i.e., placing a mask over the patient's nose and mouth) and physical separation from other patients in common waiting areas.'

III.A.1.a. Respiratory hygiene and cough etiquette.

'Masking may be difficult in some settings, (e.g., pediatrics, in which case, the emphasis by necessity may be on cough etiquette.'

Assessment of evidence

III.B.2. Droplet precautions.

'Patients on Droplet Precautions who must be transported outside of the room should wear a mask if tolerated and follow Respiratory Hygiene and cough Etiquette.'

IV.C. Respiratory Hygiene and cough Etiquette

'During periods of increased prevalence of respiratory infections in the community (e.g., as indicated by increased school absenteeism, increased number of patients seeking care for a respiratory infection), offer masks to coughing patients and other.'

V.C.3. Patient transport

'If transport or movement in any healthcare setting is necessary, instruct patient to wear a mask and follow CDC's Respiratory Hygiene and cough Etiquette in Healthcare Settings.'

V.D. Airborne Precautions

V.D.2.d. In ambulatory settings:

'Instruct patients with a known or suspected airborne infection to wear a surgical mask and observe Respiratory Hygiene and cough Etiquette. Once in an AIIR, the mask may be removed; the mask should remain on if the patient is not in an AIIR. Category IB/IC'

V.D.5. Patient transport:

'If transport or movement outside an AIIR is necessary, instruct patients to wear a surgical mask, if possible, and observe Respiratory Hygiene and cough Etiquette. Category II'

II.E.3. Face protection: masks, goggles, face shields:

'3. placed on coughing patients to limit potential dissemination of infectious respiratory secretions from the patient to others (i.e., Respiratory Hygiene and cough Etiquette).'

Assessment of evidence

III.A.1.a. Respiratory hygiene and cough etiquette.

'3. source control measures (e.g., covering the mouth/nose with a tissue when coughing and prompt disposal of used tissues, using surgical masks on the coughing person when tolerated and appropriate);'

Recommendations:

IV.C. Respiratory Hygiene and cough Etiquette

IV.C.2.b.' Provide tissues and no-touch receptacles (e.g., foot-pedal-operated lid or open, plastic-lined waste basket) for disposal of tissues.' Category II

IV.C.2.c. 'Provide resources and instructions for performing hand hygiene in or near waiting areas in ambulatory and inpatient settings; provide conveniently-located dispensers of alcohol-based hand rubs and, where sinks are available, supplies for handwashing.'

Category IB

IV.C.2.d. 'During periods of increased prevalence of respiratory infections in the community (e.g., as indicated by increased school absenteeism, increased number of patients seeking care for a respiratory infection), offer masks to coughing patients and other symptomatic persons (e.g., persons who accompany ill patients) upon entry into the facility or medical office and encourage them to maintain special separation, ideally a distance of at least 3 feet, from others in common waiting areas. Category IB'

IV.C.2.d.i. 'Some facilities may find it logistically easier to institute this recommendation year-round as a standard of practice. Category II'

Table 4. **Recommendations for Application of Standard Precautions for the Care of All Patients in All Healthcare Settings**

'Instruct symptomatic persons to cover mouth/nose when sneezing/coughing; use tissues and dispose in no-touch receptacle; observe hand hygiene after soiling of hands with respiratory secretions; wear surgical mask if tolerated or maintain spatial separation, >3 feet if possible.'

Assessment of evidence

Glossary:

'Respiratory Hygiene and cough Etiquette. A combination of measures designed to minimize the transmission of respiratory pathogens via droplet or airborne routes in healthcare settings. The components of respiratory hygiene and cough etiquette are

1. covering the mouth and nose during coughing and sneezing,

2. using tissues to contain respiratory secretions with prompt disposal into a no-touch receptacle,

3. offering a surgical mask to persons who are coughing to decrease contamination of the surrounding environment, and

4. turning the head away from others and maintaining spatial separation, ideally >3 feet, when coughing.

Limitations:

- This guidance provides some recommendations related to cough etiquette although it is unclear how the citations quoted contributed to the grading of the evidence.
- Multiple citations have expired or been updated since.
- No evidence of a systematic review been conducted on this topic.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Jensen PA, Lambert LA, Iademarco MF, et al. Guidelines for preventing the transmission of Mycobacterium tuberculosis in health-care settings, 2005. Centers for Disease Control and Prevention (CDC). MMWR Recomm Rep. 2005;54(RR-17):1-141. Accessed: 21 February 2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Settings: Health-care settings

Country: USA

Assessment of evidence

Methods:

Evidence base was made using primary references, expert consultation from experts in the field and review articles.

Main findings:

Prompt Triage

'Special steps should be taken in settings other than TB clinics. Patients with symptoms suggestive of undiagnosed or inadequately treated TB disease should be promptly referred so that they can receive a medical evaluation. These patients should not be kept in the setting any longer than required to arrange a referral or transfer to an AII room. While in the setting, symptomatic patients should wear a surgical or procedure mask, if possible, and should be instructed to observe strict respiratory hygiene and cough etiquette procedures'

TB Airborne Precautions for Settings in Which Patients with Suspected or Confirmed TB Disease Are Not Expected To Be Encountered

'If an AII room is not available, persons with suspected or confirmed infectious TB disease should wear a surgical or procedure mask, if possible. Patients should be instructed to keep the mask on and to change the mask if it becomes wet. If patients cannot tolerate a mask, they should observe strict respiratory hygiene and cough etiquette procedures.'

Inpatient Settings

Emergency Departments (EDs)

'Before a patient leaves an AII room, perform an assessment of 1) the patient's need to discontinue airborne precautions, 2) the risk for transmission and the patient's ability to observe strict respiratory hygiene, and 3) cough etiquette procedures. Patients with suspected or confirmed infectious TB who are outside an AII room should wear a surgical or procedure mask, if possible. Patients who cannot tolerate masks because of medical conditions should observe strict respiratory hygiene and cough etiquette procedures.'

TB Treatment Facilities

'TB treatment facilities might include TB clinics, infectious disease clinics, or pulmonary clinics.'

Assessment of evidence

‘Persons with suspected or confirmed infectious TB disease should be promptly placed in an AII room to minimize exposure in the waiting room and other areas of the clinic, and they should be instructed to observe strict respiratory hygiene and cough etiquette procedures. Clinics that provide care for patients with suspected or confirmed infectious TB disease should have at least one AII room. The need for additional AII rooms should be based on the risk assessment for the setting.’

Dental-Care Settings

‘During clinical assessment and evaluation, a patient with suspected or confirmed TB disease should be instructed to observe strict respiratory hygiene and cough etiquette procedures. The patient should also wear a surgical or procedure mask, if possible. Non-urgent dental treatment should be postponed, and these patients should be promptly referred to an appropriate medical setting for evaluation of possible infectiousness. In addition, these patients should be kept in the dental health-care setting no longer than required to arrange a referral.’

Home-Based Health-Care and Outreach Settings:

‘HCWs who provide medical services in the homes of patients with suspected or confirmed infectious TB disease should instruct TB patients to observe strict respiratory hygiene and cough etiquette procedures. HCWs who enter homes of persons with suspected or confirmed infectious TB disease or who transport such persons in an enclosed vehicle should consider wearing at least an N95 disposable respirator (see Respiratory Protection).’

Respirator Options: Special Circumstances

‘Surgical or procedure masks are designed to prevent respiratory secretions of the wearer from entering the air. To reduce the expulsion of droplet nuclei into the air, persons with suspected or confirmed TB disease should be instructed to observe respiratory hygiene and cough etiquette procedures and should wear a surgical or procedure mask, if possible, when they are not in AII rooms. These patients do not need to wear particulate respirators.’

Frequently Asked Questions (FAQs)

- ‘What kind of respiratory protection should HCWs use when transporting patients with suspected or confirmed infectious TB disease?

Assessment of evidence

The risk assessment for the setting should consider the potential for shared air. Drivers, HCWs and other staff who are transporting patients with suspected or confirmed infectious TB disease in an enclosed vehicle should consider wearing an N95 disposable respirator. If the patient has symptoms or signs of infectious TB disease (e.g., productive cough or positive AFB sputum smear result), the patient should wear a surgical or procedure mask, if possible, during transport, in waiting areas, or when other persons are present. Patients who cannot tolerate masks because of medical conditions should observe strict respiratory hygiene and cough etiquette procedures.'

Glossary:

Respiratory hygiene and Cough etiquette

'Procedures by which patients with suspected or confirmed infectious TB disease can minimize the spread of infectious droplet nuclei by decreasing the number of infectious particles that are released into the environment. Patients with a cough should be instructed to turn their heads away from persons and to cover their mouth and nose with their hands or preferably a cloth or tissue when coughing or sneezing.'

Limitations:

- No methodology.
- Citations in the document are from pre-2000.
- No grading of strength of evidence.
- Guidance almost 20 years old (no updates visible).
- No recommendations relevant to this research question were made in the guidance.
- Evidence is from the USA.
- Pathogen-specific guidance.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Basic Infection Control And Prevention Plan for Outpatient Oncology Settings. 2011. Last accessed 17/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Outpatient oncology settings

Country: USA

Methods:

There was no specific method detailing the process for creating this guidance. Its intended audience was by outpatient oncology facilities. The layout of this guidance is as a model for a basic infection control and prevention plan. Any advice given within the 'model' are based on CDC's evidence-based guidelines and guidelines from professional societies e.g., oncology nursing society.'

Main findings:

- Lists the following for placement in reception and "common waiting areas": "Facemasks, tissues, and no-touch waste receptacles for disposing of used tissues; Dispensers of alcohol-based hand rub".

Assessment of evidence

Limitations:

- No methodology.
- Narrative guidance, with no formal recommendations.
- Poorly linked to underlying evidence.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Summary of Infection Prevention Practices in Dental Settings. 2016. Last accessed 17/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Dental settings

Country: USA

Main findings:

- “Provide tissues and no-touch receptables for disposal of tissues.”

Assessment of evidence
• "Provide resources for performing hand hygiene in or near waiting areas." • "Offer masks to coughing patients and other symptomatic persons." **Limitations:** • No methodology. • Sources cited have been removed, updated, or already captured. • Recommendations are not graded.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Prevention and Control for Hospitalized MERS Patients. 2024. Last accessed 17/02/2025.	Guidance	Level 4	N/A	N/A	N/A
Assessment of evidence					
Setting: Hospitals and other Healthcare settings.					

Assessment of evidence

Country: USA

Main findings:

- “tissues to cover nose and mouth when coughing or sneezing”
- “dispose of tissues and contaminated items in waste receptacles”

Limitations:

- No methodology.
- No references.
- Pathogen-specific guidance.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Infection Prevention and Control Strategies for Seasonal Influenza in Healthcare Settings. 2021.	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Last accessed 18/02/2025.					

Assessment of evidence

Setting: Healthcare settings

Country: USA

Main findings:

- Tissues or masks to cover nose and mouth during coughing and sneezing.
- Waste receptacles to dispose of contaminated items.
- “Provide supplies to perform hand hygiene to all patients upon arrival to facility (e.g., at entrances of facility, waiting rooms, at patient check-in) and throughout the entire duration of the visit to the healthcare setting.”

Limitations:

- No methodology.
- No signposting to evidence.
- Pathogen-specific guidance, but same content as other CDC guidance (risk of duplicating information).

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Preventing Transmission of Viral Respiratory Pathogens in Healthcare Settings. 2024. Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Healthcare settings

Country: USA

Main findings:

- “at facility entrances, triage areas, and waiting areas for patients and visitors” provide materials for respiratory hygiene and cough etiquette.
- “Provide facemasks to people with symptoms of respiratory infection (e.g., cough) or who have recently had close contact with someone with SARS-CoV-2 infection”
- “During periods of higher levels of community respiratory virus transmission*, facilities should consider having everyone mask upon entry to the facility to ensure better adherence to respiratory hygiene and cough etiquette for those who might be infectious. Such

Assessment of evidence

an approach could be implemented facility-wide or, based on a facility risk assessment, targeted toward higher-risk areas (e.g., emergency departments, urgent care) or patient groups (e.g., when caring for patients with moderate to severe immunocompromise)."

- "To facilitate hand hygiene, provide conveniently located dispensers of alcohol-based hand sanitizer; where sinks are available, ensure that supplies for hand washing (i.e., soap, disposable towels) are consistently available."
- "Provide tissues and no-touch receptacles for used tissue disposal."

Limitations:

- No methodology.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Centers for Disease Control and Prevention (CDC). Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings. 2019 (last updated).	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Last accessed 18/02/2025.					

Assessment of evidence

Setting: Healthcare facilities

Country: USA

Main findings:

- “Make supplies to perform hand hygiene available to all persons in the facility.”
- “Provide supplies (e.g., facemasks) near the visual alerts if possible.”

Limitations:

- No methodology.
- No references provided.
- Pathogen-specific guidance.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health & Social Care (DHSC). Infection prevention and control: resource for adult social care 2024 (last updated). Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Adult social care (including long-term care and non-NHS services).

Country: England

Main findings:

- “ensure a supply of tissues is in the reach of the person or those providing care”
- Waste bin provided for disposal of used tissues.

Limitations:

- No methodology.
- No references provided.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health & Social Care (DHSC). Infection prevention and control: quick guide for care workers. 2024 (last updated). Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Care settings

Country: England

Main findings:

- Tissues to be used for “sneezing, coughing, or wiping or blowing your nose”
- Waste bin for disposal of used tissues

Limitations:

- No methodology.
- No references provided.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
European Centre for Disease Prevention and Control (ECDC). Infection prevention and control and preparedness for COVID-19 in healthcare settings. 2021. Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Healthcare settings (including long-term care facilities)

Country: EU/EEA region and the UK

Main findings:

- Tissue used to cover the mouth when coughing, for possible COVID-19 patient cases. This is discussed as an option to wearing a face mask.

Limitations:

- No methodology provided for update.
- Evidence poorly linked to text (no in-text citations).

Assessment of evidence

- Pathogen-specific guidance thus may lack generalisability and/or duplicate other sources.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Aide memoire: Standard precautions in health care. 2022. Last accessed 18/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Healthcare settings

Country: International

Main findings:

"• Place hand hygiene supplies, tissues, masks and no-touch waste bins in waiting areas".

Respiratory hygiene and cough etiquette

"Health workers should apply source control measures to individuals with respiratory symptoms, including: – asking patients to wear a mask or use a tissue to cover their cough"

Assessment of evidence

Limitations:

- No methodology.
- It is not reported which document(s) this document provides a summary of.
- Likely to duplicate other information in other WHO documents.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Interim infection prevention and control guidance for care of patients with suspected or confirmed filovirus haemorrhagic fever in health-care settings, with focus on Ebola. 2014. Last accessed 19/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Healthcare facilities

Country: International

Methodology:

- The evidence base for the guidance included “WHO and other international reference documents” available at the time publication during an Ebola outbreak.
- The guidance was also subject to expert opinion consensus and external expert review.

Main findings:

- Tissue or mask to cover nose and mouth during coughs and sneezes.
- “Treat waste contaminated with blood, body fluids, secretions and excretions as clinical waste, in accordance with local regulations.”
- “Human tissues and laboratory waste that is directly associated with specimen processing should also be treated as clinical waste.”

Limitations:

- Interim guidance, with no detail on whether a final version will be published.
- Pathogen-specific guidance thus may lack generalisability and/or duplicate other sources.
- Poor link between evidence and relevant content.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Clinical care of severe acute respiratory infections – Tool kit. 2022 (last updated). Last accessed 19/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Hospitals

Country: Low- and middle-income countries

Main findings:

- Medical masks or tissues are alternative to flexed elbow for containing coughs and sneezing.

Limitations:

- No methodology.
- Guidance has potential to lack generalisability as it is targeted towards low- and middle- income countries and active epidemics from emerging viral respiratory pathogens, however, content is very similar to other guidance included.
- Unclear whether content has been updated for relevant sections or represents guidance from past iterations.
- Evidence underlying relevant content is unclear.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
European Centre for Disease Prevention and Control (ECDC). Protect yourself against flu: Learn more about preventive measures. 2024 (last updated). Last accessed 19/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Not reported, seemingly all settings (healthcare and community)

Country: EU/EEA region

Main findings:

- Tissue or mask to cover nose and mouth when coughing or sneezing.
- Lidded bin for disposal of used tissues.
- Soap and water to wash hands.

Limitations:

- No methodology.

Assessment of evidence

- Poor association to evidence within the text.
- Pathogen-specific guidance thus may lack generalisability and/or duplicate other sources.
- Not healthcare setting specific as discusses management of flu at home and in the community.
- Reference list cites a number of expert opinion guidance documents already captured, thus there is a risk of duplicating information.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health (Republic of Ireland). NCEC National Clinical Guideline No. 30 Infection Prevention . 2023 (last updated). Last accessed 19/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: Health and social care settings

Country: Republic of Ireland

Assessment of evidence

Main findings:

- Use of disposable, single-use tissues for coughing, sneezing, wiping the nose and blowing the nose.
- "Those who are immobile will need a receptacle, for example plastic bag, readily at hand for the immediate disposal of used tissues and will need to be offered hand hygiene facilities."
- "In primary care and other office-based practice, […] availability of tissues, alcohol-based hand rub and a waste bin so that people can practice respiratory hygiene and cough etiquette."

Limitations:

- No in-text citations, so it is unclear which cited reference sources were used to inform relevant content.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Public Health Agency of Canada (PHAC) Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Healthcare Settings. 2016 (last updated).	Guidance	Level 4	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Last accessed 20/02/2025.					

Assessment of evidence

Setting: Healthcare settings

Country: Canada

Methodology:

- A thorough literature search from the year 1999 was conducted, but details of this search, including systematic methods if any, are only available on request thus this document was graded SIGN50 level 4.
- Recommendations were graded according to their strength of evidence and/or "predictive power of the study designs from which that data were obtained" (domains listed are "strength of study design, quality of study, number of studies, consistency of results and directness of evidence"). Content relevant to this research question was not in the form of recommendations.
- Evidence gaps were stated to be supplemented by expert opinion. Authors report that consensus was reached for all content included. Following its development, the guidance was subject to external stakeholder review. There is a statement that guidelines should be updated to reflect changes in the evidence.

Main findings:

- Install "appropriately functioning, accessible dispensers for hand hygiene products (ABHR, soap, lotion, paper towels) and respiratory hygiene and cough etiquette products" – example of an engineering control, not a graded recommendation.
- "provision of materials for respiratory hygiene (e.g., tissues, no-touch plastic-lined waste receptacles, ABHR)" – graded CI (weak).
- Guidance also mentions "designated hand washing sinks" for respiratory hygiene – graded CI (weak).

Assessment of evidence

Limitations:

- Most cited references are not relevant for inclusion in this review. Primary studies address efficacy of surgical masks or respiratory protective equipment, were published pre-2000 or are not relevant. Two guidance sources are cited, one of which is from PHAC and has less relevant content for this topic than this resource, and the other is already captured (WHO, 2007).
- It is unclear if other extracted content represents narrative recommendations, expert opinion guidance (as per methods, see below) or supportive information.
- Search methods only available on request.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Public Health Agency Canada (PHAC). Prevention and Control of Influenza during a Pandemic for All Healthcare Settings. 2021 (last updated). Last accessed 20/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Setting: All healthcare settings

Country: Canada

Methodology:

- The annex recommendations are informed by "a synthesis of recent literature reviews related to influenza transmission; published PHAC documents […] and experience with the pandemic H1N1 influenza virus outbreak in Canada in the spring of 2009."
- PHAC members and a multidisciplinary working group were involved in development of the annex and the full guidance is endorsed by "the Public Health Network Council".
- The guidance is subject to review based on emerging evidence.

Main findings:

"III. Glossary of terms"

- "tissues to contain respiratory secretions during coughing or sneezing"
- "wearing a mask when coughing or sneezing to contain droplets and decrease contamination"
- Used tissues to be disposed of "promptly" using "a hands-free receptacle".

Limitations:

- One supportive reference provided for definition of respiratory hygiene, which is superseded but its update is captured in the evidence base for this review.
- Pathogen- and pandemic-specific guidance thus may lack generalisability to other pathogens and usual clinical practice.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
UK Statutory Instrument 200 No. 2677: The Control of Substances Hazardous to Health Regulations 2002. 2020 (last updated). Last accessed 20/02/2025.	Regulation	Mandatory	N/A	N/A	N/A

Assessment of evidence

Setting: Workplaces

Country: UK

Main findings:

- Substances hazardous to health includes pathogens:
  - ""substance hazardous to health" means a substance (including a [F14mixture])— […] (c) which is a biological agent;"
  - ""biological agent" means a micro-organism, cell culture, or human endoparasite, whether or not genetically modified, which may cause infection, allergy, toxicity or otherwise create a hazard to human health;"
  - Biological agent risk classification is associated with the likelihood to cause human infection, the severity of the infection, likelihood to spread to the community, and whether treatment or prophylaxis is available.

Assessment of evidence

Regulation 3

- Healthcare facilities have a responsibility to protect healthcare staff and persons in healthcare facilities from substances hazardous to health
    - “(1) Where a duty is placed by these Regulations on an employer in respect of his employees, he shall, so far as is reasonably practicable, be under a like duty in respect of any other person, whether at work or not, who may be affected by the work carried out by the employer except that the duties of the employer"

Regulation 7

- **“**(1) Every employer shall ensure that the exposure of his employees to substances hazardous to health is either prevented or, where this is not reasonably practicable, adequately controlled.”
- “(3) Where it is not reasonably practicable to prevent exposure to a substance hazardous to health, the employer shall comply with his duty of control under paragraph (1) by applying protection measures appropriate to the activity and consistent with the risk assessment, including, in order of priority—"
    - (a)the design and use of appropriate work processes, systems and engineering controls and the provision and use of suitable work equipment and materials;
    - (b)the control of exposure at source, including adequate ventilation systems and appropriate Organisational measures; and
    - (c)where adequate control of exposure cannot be achieved by other means, the provision of suitable personal protective equipment in addition to the measures required by sub-paragraphs (a) and (b).”
- “(6) Without prejudice to the generality of paragraph (1), where it is not reasonably practicable to prevent exposure to a biological agent, the employer shall apply the following measures in addition to those required by paragraph (3)—"

    “(g) instituting hygiene measures compatible with the aim of preventing or reducing the accidental transfer or release of a biological agent from the workplace, including—

    “(i) the provision of appropriate and adequate washing and toilet facilities,” – may apply to hand hygiene.

Assessment of evidence

Limitations:

- This legislation is not specific to health and care settings but is broadly applicable.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of health and social care (DHSC). Pandemic (H1N1) 2009 influenza: a summary of guidance for infection control in healthcare settings. 2009. Last accessed 03/03/2025	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Settings: Health-care settings

Country: UK

Methods: There is no evidence of any systematic methods used for guidance development. A limited reference list is provided but there are no references linked to respiratory hygiene, hence it can only be graded as expert opinion.

Assessment of evidence

Main findings:

'4.1.2 Respiratory hygiene – 'Catch it, bin it, kill it'

'Patients, staff, and visitors should be encouraged to minimise potential influenza transmission through good respiratory hygiene measures:

- Hands should be kept away from the eyes, mouth and nose.
- Disposable, single-use tissues should be used to cover the nose and mouth when sneezing, coughing or wiping and blowing noses. Used tissues should be disposed of promptly in the nearest waste bin.
- Tissues, waste bins (preferably lined and foot operated) and hand hygiene facilities should be available for patients, visitors and staff.
- Hands should be cleaned (using soap and water, if possible, otherwise using alcohol handrub) after coughing, sneezing, using tissues or after any contact with respiratory secretions and contaminated objects.
- Some patients (e.g., older people and children) may need assistance with containment of respiratory secretions; those who are immobile will need a container (e.g., a plastic bag) readily at hand for immediate disposal of tissues.

In common waiting areas or during transport, symptomatic patients may wear surgical masks to minimise the dispersal of respiratory secretions and reduce environmental contamination.

Limitations:

- No recent updates available (last version is from 2009).
- No methodology.
- No references cited.
- Pathogen specific guidance.

Assessment of evidence
• Pandemic specific guidance, may not be generalisable to other scenarios.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Public Health Scotland (PHS). Guidance for the public health management of acute respiratory infections (ARI) in community, social and residential care settings. 2024 (last updated 2025). Last accessed 03/03/2025	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence
Setting: Scottish health and social care settings **Country:** UK (Scottish guidance)

Assessment of evidence

Methods:

This guidance is for managing acute respiratory infections (ARI) in both higher and lower risk settings (although it does not include information on outbreak management in hospitals or clinical management of ARIs). It also excludes certain pathogen specific guidance for which PHS already provides specific guidance for. A link is provided for the guidance development process document and details provided for the consultations required, although guidance clearly states that the supporting evidence base used to formulate this guidance was largely made up of expert opinion.

Main findings:

Hand washing and respiratory hygiene

“Ensuring effective hand hygiene, respiratory and cough hygiene assists everyone in reducing onwards transmission.

- Covering mouth and nose with disposable tissues reduces onward transmission of viruses and bacteria when coughing or sneezing. Tissues should be placed in a bin immediately and hands washed. When tissues are not available, coughing or sneezing into the crook of the elbow is advised, and not into hands.
- Washing hands removes viruses and other micro-organisms, making infection less likely when people touch their faces. Using soap (preferably liquid soap) and warm water is the most effective way to clean hands, especially if they are visibly dirty. Hands should be thoroughly dried after washing. This should be done regularly throughout the day, especially before meals and after toileting. Hand sanitiser should only be used when soap and water are not available. It is important to note that the use of hand sanitiser is not effective against gastrointestinal viruses (e.g., norovirus).
- Individuals who are unable to wash their hands independently, such as young children or older adults, should be supported to do so.”

Limitations:

- Lack of systematic methodology.
- Lack of references.

Assessment of evidence

- Disease- specific guidance (i.e., acute respiratory infections) hence may lack generalisability to other conditions.
- Scottish guidance.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Saiman L, Siegel JD, LiPuma JJ, et al. Infection prevention and control guideline for cystic fibrosis: 2013 update. Infect Control Hosp Epidemiol. 2014; 35 Suppl 1:S1-S67. Doi:10.1086/67688.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence

Settings: Infection prevention and control for Cystic Fibrosis patients in healthcare settings

Country: USA

Methods:

This guidance was initially produced by the Cystic Fibrosis (CF) foundation in 2003. New IPC knowledge and challenges prompted an update in 2013 which appears to be the current version online. Its intended users are healthcare workers involved in the care of CF patients. The 2013 update focuses on preventing transmission of CF in ambulatory and inpatient settings. Recommendations have been

Assessment of evidence

broken down into 7 sections with the first section outlining core recommendations and the remaining sections focusing on different settings such as ambulatory, inpatient, microbiology, nonhealthcare etc.

Main findings:

Recommendation:

“18. The CF Foundation recommends that all people with CF and their family members/friends perform hand hygiene (with either alcohol-based hand rub or antimicrobial soap and water) when there is potential for contamination of hands with pathogens, such as the following:

a. Entering and exiting CF clinics, clinic exam rooms, or hospital rooms

b. Hands become contaminated with respiratory secretions (e.g., after coughing or performing PFTs or chest physiotherapy)

20. “The CF Foundation recommends that people with CF be instructed to follow Respiratory Hygiene practices to contain their secretions when coughing or sneezing (i.e., cough into a tissue, immediately discard soiled tissue into a trash receptacle, and perform hand hygiene after disposing of soiled tissues). A covered trash receptacle with a foot pedal is preferred.”

People with CF and families/visitors.

“Masks prevent ill individuals from spreading infectious respiratory droplets. For people entering healthcare settings, availability of facemasks is an essential component of respiratory hygiene and cough etiquette, particularly during times of seasonal community-onset respiratory infections (e.g., influenza)”

“Thus, to prevent transmission by the droplet route people with CF should routinely don a facemask of appropriate size when entering healthcare settings where they are likely to encounter others with CF. Such settings include the common areas of the CF clinic, when leaving their hospital room, or when leaving the clinic exam room. However, it is possible that very young children, people in respiratory distress, and people exercising may not be able to tolerate a mask. Such individuals should be instructed to practice other components of respiratory hygiene (i.e., cough into a tissue, discard the tissue, perform hand hygiene after coughing) and remain at least 6 feet from others with CF”.

Assessment of evidence

Limitations:

- Lack of clear methodology.
- Evidence tables only available on request (lack of transparency).
- Evidence base largely made up of expert opinion and consensus.
- Disease specific guidance, not applicable to other scenarios.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Guidelines on tuberculosis infection prevention and control. Geneva. World Health Organization; (WHO/CDS/TB/2019.1) 2019. Last accessed 20/02/2025.	Guidelines	AGREE II: Recommend with modifications	N/A	N/A	N/A

Assessment of evidence

Country: International

Setting: Healthcare settings and other groups outside of the healthcare system

Methods:

These guidelines, produced by the World Health Organization, outline interventions and recommendations to reduce the risk of *M. tuberculosis* transmission within both healthcare and non-healthcare settings; they are aimed to inform national level and local level IPC policies. The target audience includes national and regional policy makers, IPC services and inpatient and outpatient facilities. The evidence for these guidelines were produced using a systematic review process; a WHO steering group, Guideline Development Group and an External Review Group were also established during the process. Although the methods for collecting the data were systematic, the literature identified as evidence was limited and of a low quality. Animal studies were not excluded from the results and there was a lack of literature comparing the different materials used to cover the mouth during coughing and sneezing.

Main findings:

'The Guideline Development Group stressed that, despite limited evidence on the impact of respiratory hygiene (e.g., surgical masks worn by infectious TB patients, and cough etiquette) in settings of interest, the use of this measure as part of a composite intervention can help to reduce transmission of *M. tuberculosis*.'

'Respiratory hygiene must be implemented at all times. The use of surgical masks, in particular; is of utmost importance in waiting rooms; during patient transport and in any situation which can lead to temporary exposure to *M. tuberculosis*.'

'The practice of covering the mouth and nose during breathing, coughing or sneezing (e.g., wearing a surgical mask or cloth mask, or covering the mouth with tissues or a sleeve, flexed elbow or hand) to reduce the dispersal of respiratory secretions that may contain infectious particles.'

Limitations:

- Five relevant studies were identified within the systematic review process. However, four of the studies were before and after studies that used a bundled intervention. The fifth study was a prospective cohort study using an animal model which measured the effect of surgical masks used by MDR-TB patients on transmission to guinea pigs exposed to ward air.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Infection prevention and control of epidemic – and pandemic-prone acute respiratory infections in health care. Geneva. World Health Organization. 2014. Last accessed 20/02/2025.	Guidelines	AGREE II: Recommend with modifications	N/A	N/A	N/A

Assessment of evidence

Country: International

Setting: Healthcare settings

Methods: These guidelines detail IPC measures for containing respiratory infections. The target audience is primarily IPC professionals and members of IPC teams, healthcare policy makers and health care workers. The evidence base is reported to have been formed through field evaluation, literature review and practical experience and lessons learnt from pandemic Influenza A (H1N1) 2009. A systematic review process was followed, and the quality of evidence was assessed using the GRADE approach.

Assessment of evidence

Main findings:

'Encourage the use of medical masks by patients with ARI during transport or when care is necessary outside of the isolation room or area. If medical masks are not available or not tolerated by the patient, other methods to reduce the dispersal of respiratory secretions, including covering the mouth and nose with a tissue or flexed elbow during coughing or sneezing, can be used, and should be followed by hand hygiene.'

B.1.3 Respiratory hygiene

'Consider providing resources for hand hygiene (e.g., dispensers of alcohol-based hand rubs and handwashing supplies) and respiratory hygiene (e.g., tissues); prioritize areas of gathering, such as waiting rooms'.

J.1 Emergency and outpatient care

Measures for countries with no reported ARIs of potential concern

'Provide tissues in the waiting area so that patients can contain respiratory secretions when coughing or sneezing whenever possible. Provide receptacles for disposal of used tissues (if possible, these should be no-touch receptacles).

- Give people with acute febrile respiratory illness medical masks on entry, if possible.
- Encourage hand hygiene after contact with respiratory secretions and provide hand-hygiene facilities (e.g., sinks equipped with water, soap and single-use towel, alcohol-based hand rub) in waiting areas whenever possible.'

Within the recommendation there is a cost consideration below that says the following:

'There is a cost implication for the health-care facility in the use of medical masks, tissues and hand-hygiene supplies.'

Limitations:

- These guidelines were published in 2014 (11 years ago) before the COVID-19 pandemic and so the recommendations are based on evidence that may not be relevant today.
- No explanations were given for the strength of evidence rating with each recommendation.

Assessment of evidence
• Although the quality of evidence was considered very low, there was consensus that the advantages of the use of respiratory hygiene and an assessment of values and preferences provided sufficient basis for the strong recommendation'.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization (WHO). Infection prevention and control in the context of COVID-19: a guideline. (WHO/2019-nCoV/IPC/guideline/2023.4) Geneva: World Health Organization; 2023. Last accessed 27/02/2025.	Guidance	Level 4	N/A	N/A	N/A

Assessment of evidence
Country: International **Setting:** Healthcare and community settings

Assessment of evidence

Methods:

This is an international guidance document produced by the World Health Organization. Recommendations for infection prevention and control practices for COVID-19 are set out within the context of healthcare and community settings; this is the 7th update of the document. The target audience for this guidance is made up of public health professionals, IPC professionals, wider health and care workers, policy makers and managers. A rapid review methodological approach was used due to time constraints; therefore, the AGREE tool for appraisal was not appropriate to use in this case.

Main findings:

'**Components**

'Individuals who cannot tolerate a medical mask should practice respiratory hygiene by coughing or sneezing into a bent elbow or tissue and then disposing of the tissue, followed by hand hygiene'.

Limitations:

- This guidance was produced in response to COVID-19 using a rapid review methodology and therefore it is unlikely that the approach was robust as no systematic review was conducted. In addition, it is possible that guidance may update in future iterations due to the changing nature of tackling COVID-19.