

# Search Methods

Document compiled by	Steve McDonald, Senior Information Specialist
Version and Date	Version 5, 1 June 2023
Main changes from version 1 (Nov 2020)	<ol style="list-style-type: none"> <li>1. Following sites 1) COVID-19 Evidence Reviews, 2) Oxford CEBM and 3) Canadian Agency for Drugs and Technologies in Health are no longer checked daily but are searched in response to specific PICOs.</li> <li>2. COVID-NMA Initiative checked weekly rather than daily (site is updated every Friday).</li> <li>3. PubMed alerts: 1) replaced NLM supplementary terms for coronavirus with COVID-19[Mesh Terms]. 2) Removed Coronavirus[Mesh Terms] and Coronavirus Infections[Mesh terms] since records retrieved by these terms are retrieved by coronavirus*, plus records relevant to COVID-19 are now retrieved with the new MeSH term. 3) Excluded protocols for reviews and meta-analyses from PubMed alerts, in addition to trials. 4) Respiratory support and Pregnancy &amp; newborn PubMed alerts changed from daily to weekly.</li> <li>4. Added two new LSR (macrolides and cell-based therapies)</li> </ol>
Main changes from version 2 (Dec 2020)	<ol style="list-style-type: none"> <li>1. PubMed alerts 1) added SARS-CoV-2[MeshTerms] to all search strategies. 2) Removed 2020:3000[DP], coronavirus* and coronavirinae* from all search strategies. 3) Revised Respiratory support and Pregnancy and newborn care search strings to retrieve systematic reviews and trials only (not observational studies). 4) Added tocilizumab, baricitinib, sarilumab, casirivimab, imdevimab and REGEN-COV to the Pregnancy and newborn care search. 5) Aerosol-generating procedures search no longer active. 6) Patient preferences and values search no longer active. 7) Separated RCT and SR PubMed alerts, and amended search to retrieve covid-related terms in the title only.</li> <li>2. Sources searched 1) added PubMed daily alert to Table 2. 2) removed CDC Register from search for new PICOs in Table 4, and added Europe PMC and NIH COVID-19 Portfolio. 3) CEBM removed from weekly check. 4) Research Square and WHO COVID-19 Database removed from daily check in Table 2. 5) Added Europe PMC to sources search on a weekly basis in Table 2.</li> </ol>
Main changes from version 3 (Jul 2021)	<ol style="list-style-type: none"> <li>1. PubMed 1) ceased separate weekly search for respiratory support interventions at the end of February 2022 since only randomised trials are now considered for inclusion (and these are retrieved in the main COVID-19 daily PubMed alert). 2) Daily alert added for retractions,</li> </ol>

	<p>errata, etc. related to COVID-19 randomised trials (from November 2021). 3) Daily alert added for <i>in vitro</i> studies relating to neutralising activities on selected SARS-CoV-2 omicron subvariants (from March 2022). 4) added meta-analysis[Title] to the list of exclusion terms for the RCTs search (see section 3.1). 5) Added search for risk factors for deterioration (see section 2.5).</p> <ol style="list-style-type: none"> <li>2. Europe PMC 1) daily automated alerts replaced weekly alerts from 10 November 2021. 2) Daily alert added for <i>in vitro</i> studies relating to neutralising activities on selected SARS-CoV-2 omicron subvariants (from March 2022).</li> <li>3. COVID NMA Initiative 1) fortnightly search replaced weekly search since the site is now updated every two weeks (from March 2022) with trials evaluating antivirals and immunomodulators only.</li> <li>4. RSS feeds set up for Retraction Watch and the RECOVERY, PRINCIPLE and PANORAMIC platform trials.</li> <li>5. Added description of search for 'Care after COVID-19' (see 2.5).</li> <li>6. Amended section on searching for living systematic reviews (see 2.2).</li> </ol>
<p>Main changes from version 4 (Oct 2022)</p>	<ol style="list-style-type: none"> <li>1. Frequency of surveillance searches changed from daily to weekly from June 2023 for RCTs and SRs (PubMed, preprints and journal collections).</li> <li>2. Amended the RCT and SR search to exclude records with the phrase 'during the COVID-19' in the title.</li> <li>3. Ceased cross-checking studies against the <a href="#">COVID-NMA Initiative</a> at the end of January 2023 when COVID-NMA stopped searching for RCTs of prevention and treatment.</li> <li>4. Ceased the PubMed weekly search for PIMS-TS and pregnancy &amp; perinatal care at the end of May 2023.</li> <li>5. Ceased weekly checking of the NSW Health <a href="#">COVID-19 Critical Intelligence Unit Daily Evidence Digest</a> for relevant studies or commentaries after the final edition of the digest was published on 14 April 2023.</li> <li>6. Added the following Omicron subvariants to the <i>in vitro</i> search in PubMed and Europe PMC: XBB, XBF, BQ.1 and BQ1.</li> <li>7. Any updates to Cochrane LSRs are picked up through the PubMed SR weekly search as updates are no longer posted to Cochrane's Slack channel.</li> <li>8. NICE ceased providing us with monthly evidence summaries in relation to long Covid when their guideline on managing the long term effects of COVID-19 transitioned from living mode.</li> </ol>

## 1. Introduction

This document outlines our approach to evidence surveillance and provides details of the routine sources we consult and the searches we run on a daily, weekly or monthly basis to identify evidence relevant to the scope of the guideline.

The intensity of guideline development has changed substantially over the course of the pandemic. The latest version of the document reflects the transition of the guideline to a

more scaled down operation following the end of federal funding in December 2022. From June 2023 the guidelines moved from daily to weekly evidence searches—this reflects the significant decrease in COVID evidence being published globally.

The aim of the guideline is to provide recommendations on the management and care of people with suspected or confirmed COVID-19, including care after COVID-19. With the exception of chemoprophylaxis for the prevention of infection in people exposed to COVID-19 and the prevention of infection to health professionals using respiratory support interventions, the guideline does not include other interventions (e.g., vaccines) used in the prevention of COVID-19 infection or transmission.

The main sections of the guideline cover drug treatments, chemoprophylaxis, respiratory support, venous thromboembolism prophylaxis, therapies for existing indications, care after COVID-19, timing of surgery following COVID-19 infection, pregnancy and perinatal care, and child and adolescent care.

As the guideline has evolved over the course of the pandemic, the type and sources of evidence used to inform recommendations have become more focused. For drug treatments and chemoprophylaxis, our primary interest is in randomised trials. For the remaining sections, in the absence of randomised trials, we consider non-randomised or observational studies, or high-quality systematic reviews or other evidence synthesis, especially living reviews.

In accordance with our [policy](#), the guideline includes evidence from both published studies and studies that are only available as preprints.

Table 1 summarises the sources and frequency we search. All new studies, including publications of studies previously published as preprints, and any updates to living systematic reviews and other living syntheses, are notified to the evidence review team for consideration.

Table 1: Search methods summary

Topic and approach	Source	Frequency
COVID-19 randomised trials <sup>1</sup> In-scope of guideline recommendations	PubMed alert medRxiv Europe PMC (preprints)	Weekly Manually scanned
COVID-19 systematic reviews In-scope of guideline recommendations	PubMed alert	Weekly Manually scanned
Omicron <i>in vitro</i> studies	PubMed alert Europe PMC (preprints)	Daily Manually scanned

<sup>1</sup> further details in Table 2

## 2. Surveillance activities

### 2.1 Sites checked daily, weekly or monthly

The first component of our evidence surveillance activities comprises the daily or weekly checking of several resources and sites for relevant primary studies and reviews (Table 2). The aim is to identify new reports of randomised trials soon after they are published to allow the evidence review team maximum time to prepare new or updated evidence profiles for consideration by the guideline panels. Due to the sharp reduction in new studies being published that impact on the current guideline recommendations, daily surveillance of new studies was replaced with weekly surveillance from June 2023. To safeguard against missing potential studies, we previously cross-checked with the [COVID-NMA Initiative](#). However, this site stopped searching for RCTs of prevention and treatment at the end of January 2023. Since March 2022 a daily search has been added to identify *in vitro* studies relating to neutralising activities on selected SARS-CoV-2 omicron subvariants. Daily surveillance of *in vitro* studies continues.

Table 2: Sites checked daily, weekly or monthly

Coverage	Sources
COVID-19 primary studies	<b>PubMed (<a href="https://pubmed.gov">pubmed.gov</a>)</b> <ul style="list-style-type: none"> <li>→ Daily alert for <i>in vitro</i> studies relating to neutralising activities on selected SARS-CoV-2 omicron subvariants</li> <li>→ Weekly alerts for randomised trials, systematic reviews and retractions</li> </ul>
	<b>medRxiv preprint server (<a href="https://medrxiv.org">medrxiv.org</a>)</b> <ul style="list-style-type: none"> <li>→ manual scan of all papers posted in the previous 7 days.</li> </ul>
	<b>Europe PMC (<a href="https://europepmc.org">europepmc.org</a>)</b> <p>Preprints only. Includes preprints from medRxiv, Research Square, preprints.org and SSRN, among others.</p> <ul style="list-style-type: none"> <li>→ Daily alerts for <i>in vitro</i> studies relating to neutralising activities on selected SARS-CoV-2 omicron subvariants</li> <li>→ Weekly alerts for randomised trials</li> </ul>
	<b>RSS Feeds</b> <p>Notification of items that appear in Retraction Watch plus news alerts from the RECOVERY, PRINCIPLE and PANORAMIC platform trials.</p> <ul style="list-style-type: none"> <li>→ Checked weekly</li> </ul>
	<b>Collections of COVID-19 articles from leading journals</b> <ul style="list-style-type: none"> <li>→ Lancet, JAMA, BMJ, NEJM sites checked weekly</li> </ul>

## 2.2 Living systematic reviews (LSRs)

We had previously identified relevant living systematic reviews and developed a specific PubMed search to monitor and retrieve updates. These LSRs were rarely a source of trials that we are unaware of, but were occasionally useful for comparing approaches in how evidence is assessed and interpreted.

At this stage in the pandemic (June 2023) only a few of these LSRs are being regularly updated. We no longer have a specific LSR search but continue to identify living reviews and any updates through our daily PubMed search. The suite of COVID-19 reviews maintained by Cochrane and the two BMJ-published reviews (*Drug treatments for covid-19: living systematic review and network meta-analysis* and *A living guideline on drugs for covid-19*) are the key living reviews we continue to monitor.

## 2.3 Preprints

In addition to our weekly manual search of medRxiv, a weekly automated alert identifies preprints from Europe PMC, which collates preprints from several preprint servers.

<p><b>Europe PMC</b></p> <p>RCTs</p>	<p>((TITLE:"covid") OR (TITLE:"covid-19") OR (TITLE:"coronavirus") OR (TITLE:"sars-cov-2") OR (TITLE:"sars")) AND (((TITLE:"trial") OR (ABSTRACT:"trial") OR (TITLE:"randomised") OR (ABSTRACT:"randomised") OR (TITLE:"randomized") OR (ABSTRACT:"randomized") OR (ABSTRACT:"randomly"))) NOT ((TITLE:"vaccine") OR (TITLE:"vaccines") OR (TITLE:"protocol") OR (TITLE:"meta-analysis")))) AND (SRC:PPR)</p>
<p><i>in vitro</i> studies</p>	<p>((TITLE:"omicron" OR (TITLE:"XBB") OR (TITLE:"XBF") OR (TITLE:"BQ.1") OR (TITLE:"BQ1") OR (TITLE:"BA4") OR (TITLE:"BA5") OR (TITLE:"BA.4") OR (TITLE:"BA.5") OR (TITLE:"BA4/5") OR (TITLE:"BA.4/5") OR (TITLE:"BA2.75") OR (TITLE:"BA.2.75")) AND ((TITLE:"mabs") OR (TITLE:"antibody") OR (TITLE:"antibodies") OR (TITLE:"neutralising") OR (TITLE:"neutralizing") OR (TITLE:"neutralisation") OR (TITLE:"neutralization") OR (TITLE:"vitro") OR (TITLE:"in-vitro") OR (TITLE:"sotrovimab") OR (TITLE:"casirivimab") OR (TITLE:"imdevimab") OR (TITLE:"tixagevimab") OR (TITLE:"cilgavimab"))) AND (SRC:PPR))</p>

## 2.4 COVID-19 core search strings for PubMed

Our PubMed searches are based on core search strings for COVID-19 and study design terms, which are then combined with topic-specific terms (see Section 3). These search strings were last amended on 1 June 2023.

<p><b>COVID-19 terms</b></p> <p>Free-text terms all fields</p>	<p>(COVID-19[Mesh Terms] OR SARS-CoV-2[Mesh Terms] OR coronavirus* OR COVID* OR sars*)</p>
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<p><b>Study design terms</b></p> <p>MeSH terms exploded; SRs, RCTs, observational studies, excluding trial and review protocols</p>	<p>Systematic[SB] OR meta-analysis[Publication Type] OR Cochrane Database Syst Rev[SO] OR review[Title] OR "systematic review"[Text Word] OR "rapid review"[Text Word] OR "scoping review"[Text Word] OR "living review"[Text Word] OR "meta-analysis"[Text Word]</p> <p>Clinical Trial[Publication Type] OR trial[Title] OR randomized[Text Word] OR randomised[Text Word] OR randomly[Text Word] OR placebo[Text Word]</p> <p>Epidemiologic Studies[Mesh] OR Observational Study[Publication Type] OR Evaluation Study[Publication Type] OR Comparative Study[Publication Type] OR study[Title] OR analysis[Title] OR cohort[Text Word] OR "case series"[Text Word] OR "case reports"[Text Word] OR cross-section*[Text Word] OR "retrospective analysis"[Text Word] OR non-randomised[Text Word] OR non-randomized[Text Word] OR case-control*[Text Word] OR "controlled before"[Text Word] OR "control group"[Text Word] OR "prospective study"[Text Word] OR "retrospective study"[Text Word] OR "observational study"[Text Word] OR guideline*[Text Word]</p> <p>NOT (protocol[Title] AND (randomi*[Title] OR review[Title] OR meta-analysis[Title]))</p>
<p><b>Retractions</b></p> <p>Specific to RCTs</p>	<p>((((COVID-19[MeSH Terms] OR SARS-COV-2[Mesh Terms] OR coronavirus*[Title] OR covid*[Title] OR sars*[Title]) AND (Clinical Trial[Publication Type] OR trial[Title] OR randomi*[Text Word] OR randomly[Text Word] OR placebo[Text Word])) NOT (Systematic[SB] OR protocol[Title] OR vaccine[Title] OR vaccines[Title])) AND ((Expression of Concern[PT] OR Corrected and Republished Article[PT] OR Published Erratum[PT] OR Retracted Publication[PT] OR Retraction of Publication[PT]))</p>
<p><b><i>in vitro</i> studies</b></p> <p>Specific to omicron subvariants</p>	<p>(omicron[ti] OR XBB[TI] OR XBF[TI] OR BQ.1[TI] OR BQ1[TI] OR BA4[TI] OR BA5[TI] OR BA.4[TI] OR BA.5[TI] OR BA4/5[TI] OR BA.4/5[TI] OR BA2.75[TI] OR BA.2.75[TI]) AND (mabs[ti] OR antibod*[ti] OR neutral*[ti] OR vitro[TI] OR in-vitro[TI] OR sotrovimab[ti] OR casirivimab[ti] OR imdevimab[ti] OR tixagevimab[ti] OR cilgavimab[ti])</p>

### 3. PubMed searches and alerts

PubMed alerts had previously been set up to cover the various sections of the guideline. These alerts combined the core search strings for COVID-19 and study designs (modified as indicated) with topic-specific terms. As of June 2023 only PubMed alerts for trials and reviews are still being screened. In the table below, the different coloured sections are combined with the Boolean operator AND. Below the table is the search strategy as applied in PubMed.

### 3.1 All COVID-19 SRs and RCTs

Last amended 1 June 2023

From June 2023 the search no longer includes the MeSH terms COVID-19 or SARS-CoV-2, instead relevant studies will only be retrieved if the words covid\* or coronavirus or sars\* appear in the title. The decision to omit the MeSH terms is based on our observation that NLM is applying the MeSH terms liberally to records that are only peripherally related to COVID-19. Relevant studies of COVID-19 invariably use covid\* or coronavirus in the title. Excluding records with 'during covid-19' in the title reflects the growing number of records that include this phrase but which are not relevant to our guideline recommendations.

Concept	Search terms
<b>COVID-19 terms</b> Title words	coronavirus*[Title] OR covid*[Title] OR sars*[Title]
<b>Study design terms</b> SRs not protocols or vaccine	(Systematic[SB] OR meta-analysis[Publication Type] OR Cochrane Database Syst Rev[SO] OR review[Title] OR "systematic review"[Text Word] OR "rapid review"[Text Word] OR "scoping review"[Text Word] OR "living review"[Text Word] OR "meta-analysis"[Text Word])) NOT (protocol[Title] OR vaccin*[Title] OR "during covid-19"[Title:~3])
RCTs not SRs, protocols or vaccine	(Clinical Trial[Publication Type] OR trial[Title] OR randomi*[Text Word] OR randomly[Text Word] OR placebo[Text Word])) NOT (Systematic[SB] OR meta-analysis[Title] OR protocol[Title] OR vaccin*[Title] OR "during covid-19"[Title:~3])

#### PubMed weekly alert SRs (scanned only, not added to Covidence)

((coronavirus\*[Title] OR covid\*[Title] OR sars\*[Title]) AND (Systematic[SB] OR meta-analysis[Publication Type] OR Cochrane Database Syst Rev[SO] OR review[Title] OR "systematic review"[Text Word] OR "rapid review"[Text Word] OR "scoping review"[Text Word] OR "living review"[Text Word] OR "meta-analysis"[Text Word])) NOT (protocol[Title] OR vaccin\*[Title] OR "during covid-19"[Title:~3])

#### PubMed weekly alert RCTs (scanned only, not added to Covidence)

((coronavirus\*[Title] OR covid\*[Title] OR sars\*[Title]) AND (Clinical Trial[Publication Type] OR trial[Title] OR randomi\*[Text Word] OR randomly[Text Word] OR placebo[Text Word])) NOT (Systematic[SB] OR meta-analysis[Title] OR protocol[Title] OR vaccin\*[Title] OR "during covid-19"[Title:~3])