

Project: Rapid Response Recommendations for COVID-19 & Organ and Tissue Donation and Transplantation

Working Group: Recipient Treatment and Protection

Sponsor: Canadian Blood Services

Project Lead: Laura Hornby

Information specialists: Robin Featherstone, Liset Pengel, Marc-André Simard

Search methods: A team of information specialists (RF, LP, MS) designed and executed a comprehensive search between June 18-21, 2020 with text words and controlled vocabulary terms (e.g. MeSH) combining concepts for COVID-19/SARS-CoV-2 and organ transplantation. Search results were limited to references published since 2019. No language or publication type limits were applied to the search. Search result were managed, and duplicates removed in EndNote X9 (Clarivate). References were uploaded to Covidence for primary (title and abstract) screening. See Appendix 1 for the complete strategies.

Search sources:

- MEDLINE Ovid (1946 to June 19, 2020)
- Embase Ovid (1947 to June 19, 2020)
- Cochrane COVID-19 Study Register (<https://covid-19.cochrane.org/>; searched June 21, 2020)
- WHO COVID-19 Global literature on coronavirus disease (<https://search.bvsalud.org/global-literature-on-novel-coronavirus-2019-ncov/>; search June 21, 2020)
- Science Citation Index (1900 to June 19, 2020) Web of Science
- medRxiv and bioRxiv preprint server Cold Spring Harbor Laboratory, BMJ, Yale (<https://www.medrxiv.org/>; <https://www.biorxiv.org/>; searched June 18, 2020)
- Chinese translations of COVID-19 journal articles from Lanzhou University's Evidence-Based Medicine Center¹ (current up to June 2, 2020; searched June 19, 2020)
- Google Scholar (<https://scholar.google.com/>; searched June 18, 2020)
- NHS Blood and Transplant (<https://www.nhsbt.nhs.uk/news/coronavirus-update/>; searched June 21, 2020)

Additional sources: Reference lists for any included studies or relevant reviews were also checked.

Search summary:

Source	Results (w. duplicates)	Results (unique)
MEDLINE	261	261
Embase	318	81
Cochrane COVID-19 Study Register	163	52
WHO COVID-19 Global literature on coronavirus disease	380	95
Science Citation Index	81	5
medRxiv & bioRxiv preprints	9	8
Lanzhou Translations	7	7
Google Scholar	206	26
NHS Blood and Transplant	1	1
Total:	1426	536

Search results: 1426 references were retrieved by the search, 536 after duplicates were removed.

Note on revisions from the protocol: A search line (#25 in the MEDLINE strategy) was added to the protocol strategy to capture references with the term "transplant*" in the title only, excluding references with terms for both "transplant*" and "cell*" or "faecal*" or "fecal*" (to remove references about stem cell or fecal transplantation). We found this search captured new unique references that were relevant to the topic but did not explicitly mention solid organ transplantation. We also evaluated and excluded a search line (#24 in the protocol MEDLINE strategy) specific to donors as this was capturing citations about blood donors, not organ donation, and not adding new eligible references to the results.

¹ <http://meta-evidence.co.uk/the-role-of-evidence-synthesis-in-covid19/>

Appendix 1 – Search Strategy

Database: Ovid MEDLINE(R) ALL 1946 to June 19, 2020

Date search conducted: June 21, 2020

Search title: COVID-19_LSR_All-Groups_Stage1

Information specialist: Robin Featherstone

Strategy:

- 1 Coronavirus Infections/ (11557)
- 2 COVID-19.rs. (7164)
- 3 severe acute respiratory syndrome coronavirus 2.os. (6004)
- 4 2019 nCoV.tw,kf. (878)
- 5 2019nCoV.tw,kf. (6)
- 6 2019-novel CoV.tw,kf. (5)
- 7 (coronavirus* or corona virus*).tw,kf. (21987)
- 8 COVID 19.mp. (23712)
- 9 COVID19.tw,kf. (313)
- 10 COVID 2019.tw,kf. (102)
- 11 nCov 2019.tw,kf. (42)
- 12 nCov 19.tw,kf. (9)
- 13 ("SARS-CoV-2" or "SARS-CoV2" or SARSCoV2 or "SARSCoV-2").mp. (7592)
- 14 ("SARS coronavirus 2" or "SARS-like coronavirus" or "Severe Acute Respiratory Syndrome Coronavirus-2").mp. (7605)
- 15 or/1-14 [Set 1: COVID-19] (38861)
- 16 Heart Transplantation/ (34143)
- 17 Kidney Transplantation/ (95022)
- 18 Liver Transplantation/ (56151)
- 19 Lung Transplantation/ (15054)
- 20 Organ Transplantation/ (12899)
- 21 Pancreas Transplantation/ (7423)
- 22 Transplantation/ (8920)
- 23 ((allograft\$1 or donor\$1 or graft\$1 or recipient\$1 or transplant*) adj2 (cardiac or heart\$1 or heart-lung or hepatic or intestin\$ or kidney\$1 or kidney-pancreas or liver\$1 or lung\$1 or lung-heart or multiorgan or multi-organ or organ\$1 or pancreas or pancreas-kidney or renal)).tw,kf. (240244)
- 24 (transplant* not (cell* or faecal* or fecal*)).ti. (200882)
- 25 or/16-24 [Set 2: Organ Transplantation] (338773)
- 26 and/15,25 [Sets 1 & 2] (306)
- 27 limit 26 to yr="2019-Current" (266)
- 28 remove duplicates from 27 [Results for stage 1 screen] (261)

Database: Ovid Embase Classic+Embase 1947 to 2020 June 19

Date search conducted: June 20, 2020

Search title: COVID-19_LSR_All-Groups_Stage1_2

Information specialist: Robin Featherstone

Strategy:

- 1 exp coronavirus/ (14936)
- 2 coronavirus infections/ (506)
- 3 2019 nCoV.tw,kw. (772)
- 4 2019nCoV.tw,kw. (5)
- 5 2019-novel CoV.tw,kw. (3)
- 6 (coronavirus* or corona virus*).tw,kw. (21723)
- 7 COVID 19.af. (21601)
- 8 COVID19.tw,kw. (284)
- 9 COVID 2019.tw,kw. (85)
- 10 nCov 2019.tw,kw. (18)

- 11 nCov 19.tw,kw. (7)
- 12 ("SARS-CoV-2" or "SARS-CoV2" or SARSCoV2 or "SARSCoV-2").af. (6447)
- 13 ("SARS coronavirus 2" or "SARS-like coronavirus" or "Severe Acute Respiratory Syndrome Coronavirus-2").af. (5671)
- 14 or/1-13 [Set 1: COVID-19] (41860)
- 15 exp heart transplantation/ (67764)
- 16 exp kidney transplantation/ (161008)
- 17 exp liver transplantation/ (117400)
- 18 exp lung transplantation/ (36455)
- 19 organ transplantation/ (36765)
- 20 exp pancreas transplantation/ (20619)
- 21 spleen transplantation/ (667)
- 22 transplantation/ (179475)
- 23 ((allograft\$1 or donor\$1 or graft\$1 or recipient\$1 or transplant*) adj2 (cardiac or heart\$1 or heart-lung or hepatic or intestin\$ or kidney\$1 or kidney-pancreas or liver\$1 or lung\$1 or lung-heart or multiorgan or multi-organ or organ\$1 or pancreas or pancreas-kidney or renal)).tw,kw. (381286)
- 24 (transplant* not (cell* or faecal* or fecal*)).ti. (290373)
- 25 or/15-24 [Set 2: Organ Transplantation] (632858)
- 26 and/14,25 [Sets 1 & 2] (451)
- 27 limit 26 to yr="2019-Current" (325)
- 28 remove duplicates from 27 [Results for stage 1 screen] (318)

Database: Cochrane COVID-19 Study Register

URL: <https://covid-19.cochrane.org/> (searched via the Cochrane Register of Studies: <https://crsweb.cochrane.org/>)

Date search conducted: June 20, 2020

Information specialist: Robin Featherstone

Strategy:

1. ((allograft* or donor* or graft* or recipient* or transplant*) AND (cardiac* or heart* or hepatic* or intestin* or kidney* or liver* or lung* or multiorgan* or organ* or pancreas* or renal*)):TI,AB (159)
2. (transplant* not (cell* or faecal* or fecal* or microbiota*)):TI (111)
3. #1 OR #2 (163)

Database: WHO COVID-19 Global literature on coronavirus disease

URL: <https://search.bysalud.org/global-literature-on-novel-coronavirus-2019-ncov/>

Date search conducted: June 21, 2020

Information specialist: Liset Pengel

Strategy:

transplant\$

LP note: Content: The WHO Global COVID-19 Health literature database contains primarily research articles (published AND/OR pre-publication) journal articles. Major indexing databases, PubMed, Web of Science, Global Index Medicus, Embase as well as major health publishers websites are searched Monday to Friday (excluding WHO Headquarter Official Holidays). The database is updated at 19:00 (Geneva local time). A working document of the search strategies is available upon request (email: library@who.int). In addition, Lanzhou University submits on a daily basis citations from CNKI as well as a number of Chinese journal publishers.

Database: Science Citation Index (1900 to 17 June 2020); Web of Science Clarivate

URL: <https://webofknowledge.com>

Date search conducted: June 19, 2020

Information specialist: Marc-André Simard

Strategy:

# 5	27,719	#2 OR #3 OR #4 <i>Indexes=SCI-EXPANDED Timespan=2019-2020</i>
# 4	17,014	TI=(transplant* NOT (fecal OR faecal OR cell*)) <i>Indexes=SCI-EXPANDED Timespan=2019-2020</i>
# 3	2,166	TS=((cadaver* OR dead OR "heart beating" OR live OR living OR "non heart beating") NEAR/5 donor*) <i>Indexes=SCI-EXPANDED Timespan=2019-2020</i>
# 2	24,601	TS=((allograft* or donor* or graft* or recipient* or transplant*) NEAR/5 (cardiac* or heart* or hepatic* or intestin* or kidney* or liver* or lung* or multiorgan* or organ* or pancreas* or renal*)) <i>Indexes=SCI-EXPANDED Timespan=2019-2020</i>
# 1	9,430	TS=("2019 nCoV" OR "2019nCoV" OR "2019-novel CoV" OR coronavirus* OR "corona virus*" OR "covid 19" OR covid19 OR "covid 2019" OR "nCoV 2019" OR "nCoV 19" OR "SARS-CoV-2" OR "SARS-CoV2" OR "SARSCoV-2" OR "SARS coronavirus 2" OR "SARS-like coronavirus" OR "severe acute respiratory syndrome coronavirus 2") <i>Indexes=SCI-EXPANDED Timespan=2019-2020</i>

Database: medRxiv and bioRxiv preprint servers Cold Spring Harbor Laboratory, BMJ, Yale
(<https://www.medrxiv.org/>; <https://www.biorxiv.org/> searched June 18, 2020)

Note: COVID-19/SARS-CoV-2 results from medRxiv & bioRxiv identified by the Stephen B. Thacker CDC Library, exported results current to June 18, 2020 and searched via EndNote

URL: <https://www.cdc.gov/library/researchguides/2019novelcoronavirus/researcharticles.html>

Date search conducted: June 18, 2020

Information specialist: Liset Pengel

Strategy:

transplant*

Database: Chinese translations of COVID-19 journal articles from Lanzhou University's Evidence-Based Medicine Center

Date search conducted: June 19, 2020

Note: COVID-19/SARS-CoV-2 Chinese translations identified by research project of Campbell UK & Ireland; translations provided by Evidence-Based Medicine Center Lanzhou University; 3184 translations current up to June 2, 2020 and searched via EndNote

Strategy: Keywords used: transplant, donation, donor, immuno*, allograft, graft, recipient (112; MAS kept 7)

Source: Google Scholar

URL: <https://scholar.google.com/>

Date search conducted: June 18, 2020

Note: Results were screened manually and added to a Google Scholar library. The library was then exported into an EndNote file.

Strategy:

"covid-19" transplant (377; MAS kept 206)

Source: NHS Blood and Transplant

URL: <https://www.nhsbt.nhs.uk/news/coronavirus-update/>

Date search conducted: June 21, 2020

Strategy: Manual search of the COVID-19 section of the NHSBT website. 1 NHSBT guidance document was found through the British Transplantation Society website:

<https://bts.org.uk/wp-content/uploads/2020/06/NHSBT-BTS-consent-guidance-COVID-19-Version-2-Updated-5th-June-2020-FINAL-for-Publication.pdf>

