

Full search strategy for PubMed and Embase

A complete and reproducible PubMed and Embase search strategy for the systematic review titled “Barriers and facilitators to integrating non-communicable disease care within primary healthcare systems in low-resource countries.”

Step-by-Step Search Strategy

This strategy includes both MeSH (controlled vocabulary) terms and free-text keywords to ensure a comprehensive search.

1. Non-communicable Diseases
("Noncommunicable Diseases"[MeSH] OR "chronic disease*" [tiab] OR "non-communicable disease*" [tiab])
✓ <i>MeSH term used:</i> "Noncommunicable Diseases"
✓ <i>Free-text terms:</i> “chronic disease*” and “non-communicable disease*” (with truncation to capture plural/singular forms).
2. Primary Health Care
("Primary Health Care"[MeSH] OR "primary care" [tiab] OR "primary healthcare" [tiab])
✓ <i>MeSH term used:</i> "Primary Health Care"
✓ <i>Free-text terms:</i> “primary care” and “primary healthcare.”
3. Low-resource Settings / Developing Countries
("Developing Countries"[MeSH] OR "low-resource" [tiab] OR "resource-limited" [tiab] OR "low income countr*" [tiab] OR "LMIC*" [tiab])
✓ <i>MeSH term used:</i> "Developing Countries"
✓ <i>Free-text terms:</i> “low-resource,” “resource-limited,” “low income countr*” (to capture “country” and “countries”), and “LMIC*.”
4. Integrated Care
("Delivery of Health Care, Integrated"[MeSH] OR integrat* [tiab] OR "integrated care" [tiab])
✓ <i>MeSH term used:</i> "Delivery of Health Care, Integrated"
✓ <i>Free-text terms:</i> Use of truncation with “integrat*” (to capture integrate, integrated, integration) and the phrase “integrated care.”
5. Barriers and Facilitators
(barrier* [tiab] OR challenge* [tiab] OR facilitator* [tiab] OR enabler* [tiab])
✓ <i>Free-text terms:</i> This set includes various expressions capturing obstacles and aids in implementation, such as “barrier*,” “challenge*,” “facilitator*,” and “enabler*.”
6. Combine All Concepts
1 AND 2 AND 3 AND 4 AND 5
✓ Combine the five components with the Boolean operator AND to retrieve articles addressing all the key concepts.

The Complete PubMed Search String

("Noncommunicable Diseases"[MeSH] OR "chronic disease*" [tiab] OR "non-communicable disease*" [tiab]) AND ("Primary Health Care"[MeSH] OR "primary care" [tiab] OR "primary

healthcare"[tiab]) AND ("Developing Countries"[MeSH] OR "low-resource"[tiab] OR "resource-limited"[tiab] OR "low income countr*"[tiab] OR "LMIC*"[tiab]) AND ("Delivery of Health Care, Integrated"[MeSH] OR integrat*[tiab] OR "integrated care"[tiab]) AND (barrier*[tiab] OR challenge*[tiab] OR facilitator*[tiab] OR enabler*[tiab]))

Additional Considerations we sought during the search

- **Truncation:** The asterisk () is used to capture multiple forms of a word (e.g., “*integrat*” retrieves “*integrate*,” “*integrated*,” “*integration*,” etc.).
- **Field Tags:**
 - ✓ [MeSH] indicates a controlled vocabulary term.
 - ✓ [tiab] restricts the free-text search to the title and abstract fields.
- **Documentation:** Record the date the search is run (e.g., “Search executed on April 14, 2025”) and any adjustments or pilot tests conducted.
- **Supplementary File:** The complete strategy should be included as a supplementary file in your systematic review publication to support transparency and reproducibility.

Step-by-Step Search Strategy for Embase:

This strategy combines both controlled vocabulary terms (Emtree headings) and free-text keywords using field tags to restrict searches to titles and abstracts when appropriate. Adjust the syntax as needed for your specific Embase interface.

1. Non-communicable Diseases
('noncommunicable disease'/exp OR 'chronic disease*':ti,ab OR 'non-communicable disease*':ti,ab)
✓ <i>Controlled Vocabulary:</i> The term 'noncommunicable disease'/exp searches for the Emtree term and all its narrower terms.
✓ <i>Keywords:</i> Free-text words “chronic disease*” and “non-communicable disease*” are included in the title and abstract (ti,ab).
2. Primary Health Care
('primary health care'/exp OR 'primary care':ti,ab OR 'primary healthcare':ti,ab)
✓ <i>Controlled Vocabulary:</i> The term 'primary health care'/exp captures the Emtree term and related concepts.
✓ <i>Keywords:</i> Free-text variations “primary care” and “primary healthcare” broaden retrieval.
3. Low-resource Settings / Developing Countries
('developing country'/exp OR 'low-resource':ti,ab OR 'resource-limited':ti,ab OR 'low income countr*':ti,ab OR 'LMIC*':ti,ab)
✓ <i>Controlled Vocabulary:</i> The term 'developing country'/exp covers the Emtree indexing for developing countries.

✓ Keywords: Additional keywords such as “low-resource,” “resource-limited,” “low income countr*” (using truncation for plural or variant endings), and “LMIC*” are included.
4. Integrated Care
('integrated care'/exp OR integrat*:ti,ab OR 'integrated care':ti,ab)
✓ Controlled Vocabulary: The term 'integrated care'/exp retrieves the Emtree term for integrated care, including its hierarchical terms.
✓ Keywords: The truncation term integrat* covers “integrate,” “integrated,” “integration,” etc. The exact phrase “integrated care” is also added.
5. Barriers and Facilitators
(barrier*:ti,ab OR challenge*:ti,ab OR facilitator*:ti,ab OR enabler*:ti,ab)
✓ Keywords: This set captures various expressions related to obstacles and enabling factors using truncation to ensure variant forms are included.
6. Combining All Concepts
1 AND 2 AND 3 AND 4 AND 5
○ Combining all five components with the Boolean operator AND ensures that each retrieved record addresses all aspects of the review topic.

Comprehensive Embase Search String

((('noncommunicable disease'/exp OR 'chronic disease*':ti,ab OR 'non-communicable disease*':ti,ab) AND ('primary health care'/exp OR 'primary care':ti,ab OR 'primary healthcare':ti,ab) AND ('developing country'/exp OR 'low-resource':ti,ab OR 'resource-limited':ti,ab OR 'low income countr*':ti,ab OR 'LMIC*':ti,ab) AND ('integrated care'/exp OR integrat*:ti,ab OR 'integrated care':ti,ab) AND (barrier*:ti,ab OR challenge*:ti,ab OR facilitator*:ti,ab OR enabler*:ti,ab)))

Additional Considerations we sought during search

- **Truncation:** The asterisk () is used to capture various word endings (e.g., “integrate” retrieves “integrate,” “integrated,” “integration”).
- **Field Tags:**
 - ✓ /exp ensures that the search includes the Emtree term and all its narrower terms.
 - ✓ :ti,ab confines the free-text search to titles and abstracts.
- **Transparency:** Include this full search strategy in the supplementary file of your systematic review to promote transparency and reproducibility.

The PubMed and Embase search strategy is designed to maximise sensitivity by covering both indexed terms and keywords, ensuring that relevant studies addressing the integration of

non-communicable disease care into primary healthcare systems in low-resource settings are captured.