

**Evidence of integrated health service delivery during COVID-19 in low- and middle-income countries:
protocol for a scoping review**

Supplemental Material

Supplement 1: PubMed literature search script for low and low-middle-income countries

Search Theme	Search Script for PubMed
Low and middle-income countries	((Deprived Countries[tw] OR Deprived Population[tw] OR Deprived Populations[tw] OR Developing Countries[tw] OR Developing Country[tw] OR Developing Economies[tw] OR Developing Economy[tw] OR Developing Nation[tw] OR Developing Nations[tw] OR Developing Population[tw] OR Developing Populations[tw] OR Developing World[tw] OR LAMI Countries[tw] OR LAMI Country[tw] OR Less Developed Countries[tw] OR Less Developed Country[tw] OR Less Developed Economies [tw] OR Less Developed Nation[tw] OR Less Developed Nations[tw] OR Less Developed World[tw] OR Lesser Developed Countries[tw] OR Lesser Developed Nations[tw] OR LMIC[tw] OR LMICS[tw] OR Low GDP[tw] OR Low GNP[tw] OR Low Gross Domestic[tw] OR Low Gross National[tw] OR Low Income Countries[tw] OR Low Income Country[tw] OR Low Income Economies [tw] OR Low Income Economy[tw] OR Low Income Nations[tw] OR Low Income Population[tw] OR Low Income Populations[tw] OR Lower GDP[tw] OR lower gross domestic[tw] OR Lower Income Countries[tw] OR Lower Income Country[tw] OR Lower Income Nations[tw] OR Lower Income Population[tw] OR Lower Income Populations[tw] OR Middle Income Countries[tw] OR Middle Income Country[tw] OR Middle Income Economies [tw] OR Middle Income Nation[tw] OR Middle Income Nations[tw] OR Middle Income Population[tw] OR Middle Income Populations[tw] OR Poor Countries[tw] OR Poor Country[tw] OR Poor Economies [tw] OR Poor Economy[tw] OR Poor Nation[tw] OR Poor Nations[tw] OR Poor Population[tw] OR Poor Populations[tw] OR poor world[tw] OR Poorer Countries[tw] OR Poorer Economies [tw] OR Poorer Economy[tw] OR Poorer Nations[tw] OR Poorer Population[tw] OR Poorer Populations[tw] OR Third World[tw] OR Transitional Countries[tw] OR Transitional Country[tw] OR Transitional Economies[tw] OR Transitional Economy[tw] OR Under Developed Countries[tw] OR Under Developed Country[tw] OR under developed nations[tw] OR Under Developed World[tw] OR Under Served Population[tw] OR Under Served Populations[tw] OR Underdeveloped Countries[tw] OR Underdeveloped Country[tw] OR underdeveloped economies[tw] OR underdeveloped nations[tw] OR underdeveloped population[tw] OR Underdeveloped World[tw] OR Underserved Countries[tw] OR Underserved Nations[tw] OR Underserved Population[tw] OR Underserved Populations[tw] OR (Afghanistan[tw] OR Angola[tw] OR Bangladesh[tw] OR Benin[tw] OR Bhutan[tw] OR Bolivia[tw] OR Burma[tw] OR “Burkina Faso”[tw] OR Burundi[tw] OR “Cabo Verde”[tw] OR “Cape verde”[tw] OR Cambodia[tw] OR Cameroon[tw] OR “Central African Republic”[tw] OR Chad[tw] OR Comoros[tw] OR Comores[tw] OR Comoro[tw] OR Congo[tw] OR “Côte d'Ivoire”[tw] OR Djibouti[tw] OR Egypt[tw] OR “El Salvador”[tw] OR Eritrea[tw] OR Ethiopia[tw] OR Gambia[tw] OR Gaza[tw] OR Ghana[tw] OR Guinea[tw] OR “Guinea Bissau”[tw] OR Haiti[tw] OR Honduras[tw] OR India[tw] OR Indonesia[tw] OR Kenya[tw] OR Kiribati[tw] OR Kyrgyz[tw] OR Kirghizia[tw] OR Kirghiz[tw] OR Kirgizstan[tw] OR Kyrgyzstan[tw] OR “Lao PDR”[tw] OR Laos[tw] OR Lesotho[tw] OR Liberia[tw] OR Madagascar[tw] OR Malawi[tw] OR Mali[tw] OR Mauritania[tw] OR Micronesia[tw] OR Moldova[tw] OR Mongolia[tw] OR Morocco[tw] OR Mozambique[tw] OR Myanmar[tw] OR Nepal[tw] OR Nicaragua[tw] OR Niger[tw] OR Nigeria [tw] OR Pakistan [tw] OR Palau[tw] OR Panama[tw] OR “Papua New Guinea”[tw] OR Philippines[tw] OR Phillippines[tw] OR Philipines[tw] OR Phillipines[tw] OR Principe[tw] OR Rwanda[tw] OR Ruanda[tw] OR

“Sao Tome”[tw] OR Senegal[tw] OR “Sierra Leone”[tw] OR “Solomon Islands”[tw] OR Somalia[tw] OR “South Sudan”[tw] OR Sudan[tw] OR Swaziland[tw] OR Syria[tw] OR “Syrian Arab Republic”[tw] OR Tajikistan[tw] OR Tadjhikistan[tw] OR Tadjikistan[tw] OR Tadzhih[tw] OR Tanzania[tw] OR Timor[tw] OR Togo[tw] OR Tunisia[tw] OR Uganda[tw] OR Ukraine[tw] OR Uzbek[tw] OR Uzbekistan[tw] OR Vanuatu[tw] OR Vietnam[tw] OR “West Bank”[tw] OR Yemen[tw] OR Zambia[tw] OR Zimbabwe[tw]))

Note: The World Bank developed the list of low-income economies and the lower-middle-income economies according to the World Bank Atlas method using GNI per capita.

(<https://datahelpdesk.worldbank.org/knowledgebase/articles/378832-what-is-the-world-bank-atlas-method>)

Low-income economies = GNI per capita \$1,025 or less in 2018

Lower middle-income economies = GNI per capita between \$1,026 and \$3,995 in 2018

Supplement 2: Description of the data extraction form

Extracted data	Description of the data needs to be extracted
<i>Study characteristics</i>	
Article Number	Assigned number of the article
Database ID	ID in the repository or database
Article	Article type
Source	Name of the repository or database
Title	Title of the articles
Authors	Author of the article/report/document
Year	Year of publication
Country name	Name of the country/countries where the study/studies were conducted or the integration mechanisms were described or where there is stated relevance of the recommendations
Country Type	<ul style="list-style-type: none"> • Low-income economies: GDP \$1,025 or less (n = 31) • Lower-middle income economies: GDP \$1,026 to \$3,995 (n = 47)
WHO region	<ul style="list-style-type: none"> • African Region • Region of the Americas • South-East Asia Region • European Region • Eastern Mediterranean Region, and • Western Pacific Region
Study populations	If applicable
Study location	Urban or Rural
Study design and methodology	<ul style="list-style-type: none"> • Observational studies (qualitative, quantitative, mixed-method, case studies) • Intervention or experimental studies • Methodological report • Systemic review or scoping review • Commentary, editorial or personal narrative or review • Government document or programmatic document • Personal communication
Study framework(s) and/or theories	If applicable
<i>Dimensions of Integrated Care and Pandemic Preparedness</i>	
Definition of integrated care	<ul style="list-style-type: none"> • How integrated health service delivery is defined (if directly mentioned in the article)
Pandemic phase when IHSD implemented	<ul style="list-style-type: none"> • Interpandemic • Alert • Pandemic • Transition
• IHSD related risk assessment	<ul style="list-style-type: none"> • Preparedness • Response • Recovery

Extracted data	Description of the data needs to be extracted
Typologies of integration	<ul style="list-style-type: none"> Organizational: Integration of organizations are brought together formally by mergers or through 'collectives' the virtually through coordinated provider networks or via contacts between separate organizations brokered by the purchaser Functional: Integration of non-clinical support and back-office functions, such as electronic patient records Service: Integration of different clinical services at an organizational level, such as through teams of multidisciplinary professionals Clinical: Integration of care delivered by professional and providers to patients into a single or coherent process within and/or across professions, such as through the use of shared guidelines and protocols Mixed: Combination of two or more type above: Specify
Type of service integration (if applicable)	<ul style="list-style-type: none"> Specific service name / disease focus OR None
Mechanism of integration (if applicable)	<ul style="list-style-type: none"> Normative: based on shared values for coordination and collaboration Systematic: coherence of rules and policies at various levels of the Organisation
Structure of integration (if applicable)	<ul style="list-style-type: none"> Horizontal: integration occurring across operating units and/or organizations that are at the same stage in the process of delivering services come together Vertical: brings together organizations at different levels of the hierarchical structure under one management umbrella
Intensity of integration (if applicable)	<ul style="list-style-type: none"> Full integration: Process of integrating different component of the health system using a new organizational model Partial integration: Process of creating non-binding linkages or ties support integration between health system to improve coordination between them
Incentives for integration (if applicable)	<ul style="list-style-type: none"> Any monetary or non-monetary incentives for integration targeted at any actors in the health system
Timing of integration (if applicable)	<ul style="list-style-type: none"> Prior to COVID-19's emergence In preparation for COVID-19 During COVID-19 After COVID-19 cases had declined in the study area
Organizational and operational components	<ul style="list-style-type: none"> Program design Policy options used Level/s of health systems integrated Implementation strategy
<i>Intersection with COVID-19</i>	
Provided details on COVID-19 pandemic specific to a country (if applicable)	<ul style="list-style-type: none"> Dates of pandemic in specified country Reported cases (absolute number and per capita) Reported deaths Details on health systems capacity during COVID-19 (e.g. beds occupied)
Facilitators of integration	<ul style="list-style-type: none"> Reported facilitators
Barriers of integration	<ul style="list-style-type: none"> Reported barriers or challenges

Extracted data	Description of the data needs to be extracted
'Positive' effects of integration	<ul style="list-style-type: none"> • Can be reported as improvements in inputs, processes, outputs, or outcomes. • Both quantified and qualitative effects should be recorded
Negative consequences of integration	<ul style="list-style-type: none"> • Can be reported as negative impacts on inputs, processes, outputs, or outcomes • Both quantified and qualitative effects should be recorded
Recommendations – COVID-19 specific	<ul style="list-style-type: none"> • Preparedness recommendations • Response recommendations • Recovery recommendations
Recommendations – health system (non-COVID-19 specific)	<ul style="list-style-type: none"> • Related to future pandemics/epidemics • Related to essential services during pandemics/epidemics • Related to the health system when there is not an active pandemic/epidemic