

Appendix 1: Master search strategy: evidence map on CHWs, mobile technology, and training

Search Sources

Source

Pubmed
 Medline
 Cochrane
 CINAHL
 Global Health' database
 ERIC
 Education Full-text
 ISI web of science

Master Search String

Combination of concepts:

- (1) Community health care workers
AND
- (2) LMICs
AND
- (3) mobile technology
AND
- (4) training / education

Concept	Search terms
(1) Community health care workers	("community health care worker*" OR CHW OR CHWs OR ((community health* adj3 (worker* or volunteer* or aide* or practition* or representative* or advocate* or promote*)) or (community adj (mental health*) adj3 (worker* or volunteer* or aide*)) or (village adj health* adj (worker* or team* or guide*)) or (lady health worker*) or (lady health visitor*) or (front-line primary health?care) or (front-line primary health care) or behvarz or brigadista or manzaneras or (rural health assistant*) or gramsakhi or Doula or (lay health worker*) or (trained birth assistant*) or (accredited social health activist*) or (adherence support worker*) or (care facilitator*) or (community adj10 (treatment support*)) or (community* adj4 (distributor* or volunteer*)) or (health extension worker*) or (lay counsellor*) or (peer counsellor*) or (maternal health worker*) or (shasthy? shebikas) or (shasthy? kormis) or (front line primary health* care

	worker*) or (front line primary healthcare worker*) or (health activist*) or (home health aide) or (Nutrition worker) or (midwife) or (midwives) or (midwifery) or (birth assistant*) or (barefoot doctor*) or (Basic health worker*)
(2) LMICs	Africa OR Asia OR Caribbean OR "West Indies" OR "South America" OR "Latin America" OR "Central America" or Afghanistan OR Albania OR Algeria OR Angola OR Antigua OR Barbuda OR Argentina OR Armenia OR Aruba OR Azerbaijan OR Bahrain OR Bangladesh OR Barbados OR Benin OR Byelarus OR Byelorussian OR Belarus OR Belorussian OR Belorussia OR Belize OR Bhutan OR Bolivia OR Bosnia OR Herzegovina OR Hercegovina OR Botswana OR Brasil OR Brazil OR Bulgaria OR "Burkina Faso" OR "Burkina Fasso" OR "Upper Volta" OR Burundi OR Urundi OR Cambodia OR "Khmer Republic" OR Kampuchea OR Cameroon OR Camerouns OR Cameron OR Camerons OR "Cape Verde" OR "Central African Republic" OR CAR OR Chad OR Chile OR China OR Colombia OR Comoros OR "Comoro Islands" OR Comores OR Mayotte OR Congo OR Zaire OR "Costa Rica" OR "Cote d'Ivoire" OR "Ivory Coast" OR Croatia OR Cuba OR Cyprus OR Czechoslovakia OR "Czech Republic" OR Slovakia OR "Slovak Republic" OR Djibouti OR "French Somaliland" OR Dominica OR "Dominican Republic" OR "East Timor" OR "East Timur" OR "Timor Leste" OR Ecuador OR Egypt OR "United Arab Republic" OR "El Salvador" OR Eritrea OR Estonia OR Ethiopia OR Fiji OR Gabon OR "Gabonese Republic" OR Gambia OR Gaza OR Georgia OR Ghana OR "Gold Coast" OR Greece OR Grenada OR Guatemala OR Guinea OR Guam OR Guiana OR Guyana OR Haiti OR Honduras OR Hungary OR India OR Maldives OR Indonesia OR Iran OR Iraq OR Jamaica OR Jordan OR Kazakhstan OR Kazakh OR Kenya OR Kiribati OR Korea OR Kosovo OR Kyrgyzstan OR Kirghizia OR "Kyrgyz Republic" OR Kirghiz OR Kirgizstan OR "Lao PDR" OR Laos OR Latvia OR Lebanon OR Lesotho OR Basutoland OR Liberia OR Libya OR Lithuania OR Macedonia OR Madagascar OR "Malagasy Republic" OR Malaysia OR Malaya OR Malay OR Sabah OR Sarawak OR Malawi OR Nyasaland OR Mali OR Malta OR "Marshall Islands" OR Mauritania OR Mauritius OR "Agalega Islands" OR Mexico OR Micronesia OR "Middle East" OR Moldova OR Moldavia OR Mongolia OR Montenegro OR Morocco OR Mozambique OR Mocambique OR Myanmar OR Myanma OR Burma OR Namibia OR Nepal OR "Netherlands Antilles" OR "New Caledonia" OR Nicaragua OR Niger OR Nigeria OR "Northern Mariana Islands" OR Oman OR Muscat OR Pakistan OR Palau OR Palestine OR Panama OR Paraguay OR Peru OR Philippines OR Philipines OR Phillipines OR Phillippines OR Poland OR Portugal OR "Puerto Rico" OR Romania OR Rumania OR Roumania OR Russia OR Russian OR Rwanda OR Ruanda OR "Saint Kitts" OR "St Kitts" OR Nevis OR "Saint Lucia" OR "St Lucia" OR "Saint Vincent" OR "St Vincent" OR Grenadines OR Samoa OR "Samoan Islands" OR "Navigator Island" OR "Navigator Islands" OR "Sao Tome" OR "Saudi Arabia" OR Senegal OR Serbia OR Montenegro OR Seychelles OR "Sierra Leone" OR Slovenia OR "Sri Lanka" OR Ceylon OR

	<p>“Solomon Islands” OR Somalia OR Sudan OR Suriname OR Surinam OR Swaziland OR Syria OR Tajikistan OR Tadjhikistan OR Tadjikistan OR Tadjhik OR Tanzania OR Thailand OR Togo OR “Togolese Republic” OR Tonga OR Trinidad OR Tobago OR Tunisia OR Turkey OR Turkmenistan OR Turkmen OR Uganda OR Ukraine OR Uruguay OR “USSR” OR “Soviet Union” OR “Union of Soviet Socialist Republics” OR Uzbekistan OR Uzbek OR Vanuatu OR “New Hebrides” OR Venezuela OR Vietnam OR “Viet Nam” OR “West Bank” OR Yemen OR Yugoslavia OR Zambia OR Zimbabwe</p> <p>OR</p> <p>“developing country” OR “developing countries” OR “developing nation” OR “developing nations” OR “developing world” OR “less-developed countr*” OR “less developed countr*” OR “less-developed world” OR “less-developed world” OR “lesser-developed countr*” OR “lesser developed countr*” OR “lesser-developed nation” OR “lesser developed nation*” OR “lesser developed world” OR “lesser-developed world” OR “under-developed countr*” OR “under developed countr*” OR “under-developed nation*” OR “under developed nation*” OR “under-developed world” OR “underdeveloped world” OR “under developed world” OR “underdeveloped countr*” OR “under-developed countr*” OR “Under developed countr*” OR “under developed nation*” OR “under-developed nation*” OR “underdeveloped nation*” OR “lower middle income countr*” OR “lower middle-income countr*” OR “lower middle income nation*” OR “lower middle-income nation*” OR “upper middle-income countr*” OR “upper middle income countr*” OR “upper middle-income nation*” OR “upper middle income nation*” OR “low-income countr*” OR “low income countr*” OR “low-income nation*” OR “low income nation*” OR “lower income countr*” OR “lower-income countr*” OR “lower income nation*” OR “lower-income nation*” OR “Low- and Middle- Income countr*” OR “Low and Middle Income Countr*” OR “underserved country” OR “underserved countries” OR “underserved nation” OR “underserved nations” OR “underserved world” OR “underserved country” OR “underserved countries” OR “underserved nation” OR “underserved nations” OR “underserved world” OR “deprived country” OR “deprived countries” OR “deprived nation” OR “deprived nations” OR “deprived world” OR “poor country” OR “poor countries” OR “poor nation” OR “poor nations” OR “poor world” OR “poorer country” OR “poorer countries” OR “poorer nation” OR “poorer nations” OR “poorer world” OR “developing economy” OR “developing economies” OR “less developed economy” OR “less developed economies” OR “lesser developed economy” OR “lesser developed economies” OR “under developed economy” OR “under developed economies” OR “underdeveloped economy” OR “underdeveloped economies” OR “middle income economy” OR “middle income economies” OR “low income economy” OR “low income economies” OR “lower income economy” OR “lower income economies” OR Imic OR Imics OR “third world” OR “lami country” OR “lami countries” OR “transitional country”</p>
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	OR “transitional countries” OR “majority world” OR “Global South” OR LMIC OR LMICs OR LIC OR LICs OR LMICs OR LMIC OR UMICs OR UMIC) OR (“khmer” AND “republic”) OR (“cape” AND “verde”) OR (“central” AND “african” AND “republic”)
(3) Mobile technology	(mhealth OR m-health OR “mobile health” OR ((mobile technolog* OR “mobile phone_” OR “mobile telephone_” OR “cell* phone_” OR “mobile device_” OR “Portable electronic device*” OR “_phone_” OR tablet_* OR PDA OR “personal digital assistant” OR “handheld computer*” OR “tablet computer*” OR “computer tablet*” OR iPad OR iPod OR OR iPhone “smart phone_” OR “smartphone_” OR “feature phone_” OR “app” OR “mobile application_”) OR (“Text messag*” OR “short messag*” OR SMS OR “social media” OR “mobile communication”)
(4) Training	Education* OR learn* OR train* OR teach* OR instruct* OR coach* OR guide* OR tutor* OR supervision OR “Decision-support” OR “provider-provider communication” OR “provider work planning” OR “provider work scheduling” OR (refresher* train* OR refresher* course* OR (adequa* AND train*) OR (continuing medical education) OR (continuing medical training) OR (continuing nursing education) OR (continuing nursing training) OR (continuing education) OR ((in-service OR ongoing OR update OR recap*) AND train*))

List of Grey literature sources

Type	Sources
Repositories	• Google
	• Google Scholar
	• Mobile Active [http://www.mobileactive.org]
	• KIT Information Portal
	• WHO publication database
	• Knowledge for Health
	• mHealth in Low-Resource Settings [http://www.mhealthinfo.org].
	• K4Health (mHealth Evidence Knowledge 4 Health Database)
	• Centre for Disease Control
Organisational websites	• Aga Khan Health Service, Tanzania
	• AMREF Health Africa,
	• The BRAC MNCH (Maternal, Neonatal and Child Health) programme
	• Cell Life Project
	• Concern Worldwide
	• D-Tree International
	• The Innovation Working Group,
	• Family Health International (FHI)
	• Grameen Foundation
	• GSMA for Mobile Development
	• International Institute for Communication and Development (IICD)
	• Johns Hopkins (JHPIEGO)
	• Royal Tropical Institute (KIT)
	• Mobile Alliance for Maternal Action (MAMA)
	• Medic Mobile
	• mHealth Alliance
	• Mothers2Mothers
	• NEEDS
	• Pathfinder
	• PLAN International
	• Pharmaccess International,
	• Red Cross
	• USAID
	• DFID
• UNICEF	
• UNESCO	
• UNDP	
• Philani	

	<ul style="list-style-type: none">• Foundation for Innovative New Diagnostics
	<ul style="list-style-type: none">• Women Deliver
	<ul style="list-style-type: none">• World Bank
	<ul style="list-style-type: none">• Simavi
	<ul style="list-style-type: none">• Wired Mothers
	<ul style="list-style-type: none">• Village Reach
	<ul style="list-style-type: none">• EngenderHealth
	<ul style="list-style-type: none">• Click Diagnostics
	<ul style="list-style-type: none">• Afya Research Africa
	<ul style="list-style-type: none">• INTRAHEALTH
	<ul style="list-style-type: none">• African Women Foundation
	<ul style="list-style-type: none">• Last Mile Health
	<ul style="list-style-type: none">• Muso
	<ul style="list-style-type: none">• Omni Med
	<ul style="list-style-type: none">• Strong Minds Uganda
	<ul style="list-style-type: none">• mhinnovation.net
	<ul style="list-style-type: none">• dimagi.com