Strengthening our **health communication systems:** Pandemic lessons for Melbourne's west

HealthWest Partnership

Acknowledgments

HealthWest Partnership acknowledges the traditional custodians of the lands that we work on, the Wurundjeri, Bunurong, and Wadawurrung peoples of the Kulin Nation, and pay our respects to their cultures, their elders past and present and to all other Aboriginal and Torres Strait Islander people.

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Executive summary

Background

Effective health communication has been a significant challenge for governments and other health authorities during the COVID-19 pandemic. In Australia, the communication response has lacked clarity, coherence and coordination, which has impacted on people's ability to access, understand and apply health information and advice.

The purpose of this project was to identify the core elements of coordinated health communication approaches, and subsequently inform more responsive and effective communication in Melbourne's West, particularly with culturally and linguistically diverse communities. A scoping review was undertaken to identify evidence on health communication systems and best practice in communication and community engagement in the context of pandemics and other health emergencies.

Key findings

Partnerships for communication

A theme of the review was the need for coordinated, multisectoral partnerships as a central component of communication systems and responses in pandemics and other public health emergencies. To be effective, partnerships need a:

- coordination platform and implementation mechanisms
- communication strategy that outlines clear roles and responsibilities for all partners
- training and development strategy and resources to support implementation
- monitoring and evaluation strategy.

Community engagement and mobilisation

The review showed that community engagement is a critical element of effective public health emergency responses, as it enables stakeholders to:

- Reach marginalised and at-risk communities with prevention messages/measures
- Build trust with disenfranchised communities
- Reduce fear, stigma and discrimination
- Prevent the exacerbation of existing inequalities.

Effective community engagement depends on community-centred, culturally responsive and participatory approaches that involve communities in the design, delivery and evaluation of preparedness and response activities. There is also a need to strengthen and support community leadership capacity and community governance structures.

A prominent theme of the review was the need to work with trusted community members and leaders to build trust and mobilise communities. A wide range of community engagement methods and approaches were identified, including:

- Door-to-door and street outreach
- Community meetings/forums
- Attendance at community-led events
- Community radio
- Social media and mobile apps

Communication and engagement with culturally and linguistically diverse (CALD) communities

The review showed that in addition to the above communication and engagement approaches, effective communication and engagement with CALD communities requires:

- Use of interpreters and adequate and timely translation of messages and materials
- Engagement of a culturally and linguistically diverse workforce, including CALD liaison officers, CALD advisors and bicultural workers
- Collaborating with multicultural and settlement services
- Engagement with and use of ethnic media.
- Involvement of community leaders and faith/religious leaders to disseminate information and mobilise communities
- Co-designing messages and resources with communities
- Utilising a range of communication channels, including online, face-to-face, telephone and community meetings.

Elements of a health communication system

While federal and state governments have overall legislative and leadership responsibility for public health communication during pandemics and health emergencies, regional and local level partnerships have a critical role to play.

Recommendations

Evidence from this review demonstrates the need for strong communication systems, as well as strategic and coordinated communication as part of an overall response to pandemics and other public health emergencies. While federal and state governments have overall legislative and leadership responsibility for public health communication during pandemics and health emergencies, regional and local level partnerships have a critical role to play in the coordination and implementation of communication responses, and can significantly bolster national and state communication systems and ensure alignment of messages and responses.

Recommendations for governments

To ensure effective and coordinated communication, governments need to:

- invest in and establish critical health communication system infrastructure
- establish a clear chain of command from the highest level of government down to regional and local level coordination groups and partnerships
- develop a comprehensive communication and community engagement strategy in collaboration with key stakeholders
- ensure all official advice is translated into community languages
- identify the training and development needs of key stakeholders
- undertake regular monitoring and evaluation of communication systems and responses.

Recommendations for regional authorities and partnerships

Regional authorities and partnerships should:

- establish regional health communication systems, including communication teams
- advocate for the integration of regional level partnerships and coordination mechanisms into overarching government coordination structures
- involve local community leaders and members
- develop and implement a regional communication and community engagement strategy
- support regional partners to undertake effective communication activities
- identify the training and development needs of regional partners
- undertake regional level monitoring and evaluation of communication and engagement activities.

Recommendations for local implementers

Local implementing partners should:

- support the implementation and evaluation of regional communication and community engagement strategies
- establish health communication specific roles
- recruit a team of bicultural workers
- identify and involve trusted local community leaders and influencers
- utilise a wide range of communication approaches and formats to communicate and engage with communities.

1. Background

On 30 January 2020 the World Health Organization (WHO) declared the coronavirus (COVID-19) disease outbreak a Public Health Emergency of International Concern, and within six weeks of the initial outbreak had declared COVID-19 a global pandemic[1]. The World Health Organization has designated risk communication and community engagement as one of eight key pillars of pandemic preparedness and response[2] and a core function that WHO Member States must fulfil under International Health Regulations[3].

Despite global recognition of the importance of communication for pandemic preparedness and response, and the lessons learned from previous pandemics and outbreaks, communication during the COVID-19 pandemic has been a significant challenge for governments and other health authorities across the world[4]. In Australia, the communication response has lacked clarity, coherence and coordination. In addition, public health advice has changed frequently, often contained overly complex information, and at times contradictory recommendations[5-7]. This has significantly impacted people's ability to access, understand, and apply relevant information, including on COVID-19 symptoms, testing requirements, effective prevention measures, and the restrictions and health orders in place to minimise the spread of infection. The situation was compounded for culturally and linguistically diverse (CALD) communities, due to the lack of information provided in community languages, the failure of officials to conduct timely translation of public health advice, and the lack of engagement with CALD communities in developing message and communication materials that responded to their needs[8, 9].

There is an urgent need to improve public health communication systems and practices in Australia to ensure effective and equitable responses to the current COVID-19 pandemic, as well as future pandemics, health emergencies and other public health issues. This has been particularly evident in Melbourne's west, where there has been a lack of clear and culturally appropriate health communication provided to CALD communities. The purpose of this project was to undertake a scoping review to identify the core elements of coordinated health communication approaches, and subsequently ensure more responsive and effective communication in public health emergency situations and on public health issues more broadly, particularly with culturally and linguistically diverse communities.

Project purpose:
- identify core elements of coordinated health communication approaches,
- ensure more responsive and effective communication.

2. Methods

2.1 Review focus

A scoping review was undertaken between September and October 2021 to identify evidence on health communication systems and best practices in communication and community engagement in the context of pandemics and other health emergencies. Specifically, the review aimed to identify evidence on:

- Health communication systems, including the infrastructure, resources, partnerships and coordinating mechanisms required to ensure effective communication
- Effective communication strategies and approaches with CALD communities
- Effective community engagement strategies and approaches with CALD communities

2.2 Search strategy

A systematic search process was undertaken to identify relevant peer reviewed and published grey literature. A database search was performed using EBSCOHost, PubMed and SCOPUS to locate journal articles. A web-based search was performed using the Google search engine to identify the following document types:

- COVID-19 communication and community engagement frameworks, guides and guidelines
- COVID-19 communication and community engagement toolkits and resources
- Reports, evaluations or case studies on successful communication systems, methodologies and campaigns
- Reports on successful community engagement strategies during COVID-19
- Policy statements, position papers and recommendations for communication approaches in COVID-19 and future pandemics or health emergencies

The specific search terms and inclusion/exclusion criteria used to guide the search are provided at (Appendix 1).

A systematic search process was undertaken to identify evidence on health communication systems and best practices in communication and community engagement in the context of pandemics and other health emergencies.

2.3 Framework for synthesising the evidence

The following framework was developed to guide the mapping, extraction and synthesis of the evidence found in this review. This framework was informed by the WHO interim guidance and readiness checklist on communication and community engagement for COVID-19 preparedness and response[10].

Category	Components
 **Communication systems**	• Leadership, governance and coordination • Planning • Policies and procedures • Budget and resourcing • Monitoring and evaluation • Capacity building
 **Partnerships**	• Partners • Roles and responsibilities
 **Communication practices**	• Methods and approaches • Social media and digital technology
 **Community engagement and mobilisation**	• Methods and approaches • Trust and misinformation
 **Communication and engagement with CALD communities**	• Methods and approaches • Community leaders • Language and translation

3. Results

3.1 Search results

The database search returned 3,829 articles. After duplicates were removed, 2,383 abstracts were screened against the inclusion and exclusion criteria for eligibility. Of these, 125 articles met the inclusion criteria and were downloaded for further screening. A total of 63 articles were deemed relevant and included in the final review.

In addition, 40 documents were identified through the grey literature search, including evaluation and research reports, global guidelines and frameworks, strategies, policy briefs, issue papers and other advisory documents.

In total, 103 documents were included in this review to inform an understanding of the elements of communication systems and best practices in communication and community engagement.

3.2 Document characteristics

Of the 63 included journal articles, there were 18 reviews[3, 11-27] (including systematic, rapid and scoping reviews), 23 descriptive studies[28-50] (including observational/cross sectional population studies and desktop analyses), and five intervention studies[51-55]. There were also a significant number of commentary or perspective papers[56-66], many of which were informed by firsthand experiences of responding to the COVID-19 pandemic, and which were included to provide additional context to the review findings. Other studies included intervention protocols[67-69], case studies [9, 70] and a Delphi study[71].

Of the 40 included grey literature documents, 17 were communication and community engagement guidelines[10, 72-74], guides[75-83] and frameworks/ strategies[84-87]. Two were regional or country strategies[88, 89], eleven were research or evaluation reports on pandemics or health emergencies [5, 6, 90-98], nine were policy, issue or background papers [4, 7, 8, 99-104], and one was a communique[105] with recommendations for action.

Overall, the documents were published in, or related to activities in over 22 countries, including nine in Australia[5-9, 58, 96, 99, 100], ten in the United States[28, 33, 37, 52, 54, 55, 61, 63, 66, 71], five in China[30, 39, 49, 50, 59] and four in Canada[21, 43, 48, 69]. There were five documents from the European region[16, 41, 42, 51, 67], and six relating to the African region[19, 29, 31, 35, 45, 47], while 41 had a global focus (or were not geographically bound).

There were 22 documents that contained explicit recommendations for improving communication systems or communication and community engagement practices during pandemics or health emergencies[6-9, 12, 14, 16, 29, 31, 48, 59, 60, 71, 73, 90, 92, 93, 96-99, 105].

4. Evidence summary

4.1 Health communication systems

There were only a small number of studies that focused specifically on health communication systems. These were six peer reviewed studies, including two reviews[3, 17], three descriptive studies[34, 35, 50], and a Delphi study[71]. Of the grey literature documents, only two contained a specific section on communication systems. These were both WHO guideline documents[10, 73].

There were several studies that focused on communication and community engagement with a focus on multiple elements of communication systems[19, 26, 29, 30, 46], as well as several guidelines and frameworks (See Appendix 2). The systems elements most frequently discussed in the literature were governance and leadership, coordination mechanisms, capacity building, and monitoring and evaluation. There was also a substantial focus on communication planning within global guidelines and frameworks, but information on policies, procedures, budget and resourcing was lacking overall.

Leadership, governance and coordination

Communication in public health emergencies is a national government responsibility, being one of the core functions of WHO Member States as signatories to the International Health Regulations[85]. Global guidelines and frameworks emphasise the importance of effective leadership, governance and coordination for public health communication in emergencies. This is supported by findings from systematic reviews and evaluations of country and regional level responses to pandemics and other health emergencies[26, 73].

This requires strong leadership from the highest levels of government. The studies in this review highlighted that in many countries, national governments provide overarching leadership on pandemic responses through their Health Ministries and departments or disease control centres, while many also devolve some responsibilities to state, provincial and district level governments [19, 30, 44, 46, 85].

Key Lessons

- Strong leadership from national and state governments is needed
- Governance and coordination mechanisms specific to communication should be established
- Regional and local coordination groups can bolster communication systems
- Coordination groups should be multisectoral and involve local organisations

Establishing national multisectoral coordination mechanisms is an essential component of effective health communication systems, which may include committees, task forces and working groups[19, 26, 85]. Depending on the systems of government and political context within countries, regional and local coordination groups are likely to be needed[87]. Two systematic reviews on risk communication highlighted the creation of specific emergency task forces and committees as critical mechanisms for coordination and collaboration between governments and other agencies[3, 26]. They also highlighted the importance of establishing local governance structures and/or utilising existing structures and networks to coordinate local level action.

A study on the pandemic response in Oman reported on successful district/regional level governance through their national network of district health committees[20]. These are multisectoral committees that coordinate with the national Ministry of Health, which acted as a platform for collaboration during the COVID-19 pandemic, including on local communication planning and coordination. Similarly, studies reporting on pandemic responses in Vietnam and India also highlighted the involvement of national governance structures, supported by provincial, district and commune level committees[44, 46].

An expert panel convened to advise on system level planning, communication and coordination for pandemics in the United States also encouraged the utilisation of local healthcare coalitions/regional health authorities as platforms for coordination during pandemics and health emergencies, with support from governments to develop and implement local level pandemic plans[71].

Planning

Effective health communication planning includes establishing a communication team with clear roles and responsibilities[26, 46], reviewing and strengthening communication systems[19], providing training for communication personnel[73] and developing a comprehensive national communication and community engagement plan[26, 44]. State and district level plans are also needed where sub-national governments are responsible for managing health emergencies[87] and these may need to be adapted and tailored further to address local contexts and needs[26, 29].

Key Lessons

Public health communication teams should be established within government health departments, and relevant local organisations

National and state communication strategies should be developed, with clear roles and responsibilities for all stakeholders

Regional and local level communication strategies are needed to address local contexts and needs

There are several global guidelines that provide guidance on developing communication and community engagement strategies and plans[73, 82, 85, 87, 106]. The World Health Organization advises that planning should occur in advance, be a continuous process and focus on both preparedness and response. Experience from previous pandemics indicates that countries that establish communication teams and plans during the pre-pandemic phase are better equipped to respond to outbreaks when they occur[17].

WHO also advocates the need to plan collaboratively with a broad range of stakeholders and involve communities through participatory processes[73]. While there is no universal approach for developing a strategy, they should:

- be informed by a community needs assessment
- define clear goals and objectives
- identify key target audiences
- tailor messages and dissemination approaches to specific communities
- include a monitoring and evaluation plan
- define roles and responsibilites of key stakeholders for implementing the plan (references)[73, 79, 82, 85, 87, 106].

Policies and procedures

There was very limited evidence found on policies and procedures in this review. The WHO guidelines on risk communication and community engagement state the need for clear operating procedures as part of health communication systems[10], and two studies reported on the importance of establishing these as part of an effective and coordinated communication response[17, 29]. This included the need to have procedures endorsed by all implementing partners, to enforce their utilisation and to review them routinely so they can be adapted to suit the emergency and context.

A systematic review reported broadly on the need to develop legislation, regulations, policies and frameworks that support health emergency communication[3]. Another study suggested that communication functions need to be embedded within public health emergency policies and plans[30]. However, information on the specific characteristics and components needed in policies and procedures was not provided.

Key Lessons

Communication functions should be embedded within public health policies and plans

Clear operating procedures for public health communication are needed

Governments and implementing partners should allocate a specific budget for communication and engagement

Budgets should include funding for translation and interpreters

Budget and resourcing

WHO guidelines on communication in health emergencies strongly recommend the need for a defined and sustained budget as a core component of financing emergency preparedness, response and recovery[73]. However, the evidence on budgeting and resourcing in health emergencies was limited. Two studies assessed budgeting practices as part of pandemic response evaluations across Africa and South East Asia, and found that very few countries allocated a budget specifically for risk communication activities, which constrained their responses[17, 19].

A study conducted in the United States on responses to the Zika virus outbreak noted that the allocation of adequate financial and staffing resources was a critical structural enabler of effective communication, and that allocating specific funding to support outbreak communication activities was needed[34]. Three studies reported on budgeting issues, noting that direct communication and community engagement approaches can be resource intensive and that inadequate resourcing was a barrier to reaching the most vulnerable communities in public health emergencies[17, 34, 35]. Similarly, two reports on communication and engagement with culturally and linguistically diverse communities in New Zealand reported that allocating funding specifically for translation and interpreter services is an essential component of health emergency preparedness and response, but that it is frequently overlooked by governments and other organisations[92, 94].The review found no specific evidence or guidance on the level of financial and staffing resources required to ensure effective communication and engagement at national, regional or local levels.

Monitoring and evaluation

Effective monitoring and evaluation systems and processes are needed in health emergencies to: inform an understanding of community needs and preferences; seek ongoing feedback from communities; track public perceptions and concerns; monitor the reach of messages across various channels; assess the appropriateness and effectiveness of communication approaches; and evaluate their impact on attitudes, perceptions and behaviours[76, 78, 80, 81, 85, 86].

Key Lessons

- Monitoring and evaluation activities should form part of the planning process
- Monitoring is needed to understand community needs, and track public perceptions, rumours and media activity
- Evaluation should be undertaken regularly to determine reach and effectiveness of communication, including impact on perceptions and behaviours
- Post-pandemic evaluations should be undertaken to assess systems capacity and performance and inform future improvements

Several guidelines and strategies provide useful guidance, tools and resources to support monitoring and evaluation, including conducting needs assessments, setting up community feedback mechanisms, media monitoring, message testing, social listening and rumour tracking[78, 80, 85].

The UNICEF Vaccine Misinformation Management Field Guide also provides in-depth guidance on developing and implementing social listening systems to monitor and analyse misinformation and rumours in order to disrupt infodemics[80]*. It includes monitoring and data collection tools, an evaluation matrix and a set of process and outcome indicators. One study also reported on the development of a 30-item assessment checklist for evaluating crisis communication during pandemics, which includes questions relating to sense-making, public leadership, health professionals and expert voices, interactions with stakeholders and instructions for the public[15].

*An **infodemic** is too much information including false or misleading information in digital and physical environments during a disease outbreak.

More info:
www.who.int/health-topics/infodemic#tab=tab_1

The evidence highlights the need to develop a set of process and impact indicators to monitor the implementation and outcomes of communication and community engagement activities[29]. The WHO COVID-19 Global Risk Communication and Community Engagement Strategy contains a comprehensive monitoring and evaluation framework with indicators and measures across six domains: i) information and communication; ii) knowledge and understanding; iii) perceptions; iv) practices; v) social environment; and vi) structural factors [85].

Comprehensive evaluations of communication responses following a pandemic or health emergency are critical for assessing overall system capacity and performance, and informing improvements in preparation for future events[2, 73]. Several countries have participated in voluntary joint external evaluations (JEE) of their risk communication in health emergencies, which examines performance across five key areas: i) risk communication systems; ii) partner and internal coordination; iii) public communication; iv) community engagement; and v) addressing perceptions, risky behaviours and misinformation[17, 30]. The JEE tool and process is intended to assess country capacity to prevent and respond to health emergencies, but may also be useful for evaluating regional and local responses.

Capacity building

The World Health Organization recognises capacity building as a core element of effective communication systems and strongly recommends that preparation and training should be organised regularly for all personnel and stakeholders involved in emergency communication[73]. This should include training and information on key concepts and terminology, guidelines and operating procedures relevant to the health emergency, and the use of appropriate methods, approaches and technologies[10, 78].

One of the key objectives of the WHO COVID-19 Global Risk Communication and Community Engagement Strategy is to reinforce capacity and local solutions[85]. These guidelines outline a number of key actions that need to be taken to build the capacity of organisations, professionals and communities, including: identifying the skills and capacities needed in different contexts;

facilitating participatory needs assessments to identify training priorities; developing and implementing training activities and resources; facilitating peer-to-peer learning exchanges; and establishing mentoring systems.

Another key focus of the World Health Organization is the establishment of a global workforce to manage infodemics. They have developed an Infodemic Competency Framework that establishes key competencies for the workforce and provides guidance on how to strengthen infodemic management capacity through hiring practices, staff development and human resource planning[86]. While it has an infodemic focus, the framework provides useful insights on the knowledge and skills required for effective communication in emergencies more broadly.

This review identified evidence on capacity building for organisations, professionals and community members, including through training and orientation, information and resources, and ongoing support through supervision and professional networks[26, 73, 85, 86, 94]. Multiple studies reported on training and orientation for personnel involved in communication and community engagement, including central coordinating teams, health care workers, and community members[19, 26, 29, 44]. One study conducted in Vietnam reported on the provision of 24/7 support to people involved in communication and community engagement via hotlines and other digital communication channels[44].

A systematic review reported on the use of simulation exercises of various scales to test the integration of communication functions into public health emergency preparedness and responses, including communication channels and the strength of collaboration and coordination between various stakeholders[3]. One study reported on a long-term national capacity building initiative between the United States and China following the SARS outbreak. The project aimed to build China's risk communication capacity, including through technical advice and support, the development of guidelines and resources and training workshops[30]. A key lesson from that project was the need to establish and train a communication workforce that can be deployed in emergency situations.

Key Lessons

Needs assessments should be undertaken to determine the training and develop needs of stakeholders involved in communication and engagement activities

Training should be provided to stakeholders including on key concepts, terminology, methods and approaches

Ongoing supervision and mentorship should be provided to people involved in communication and engagement activities, including community leaders and members

Simulation exercises are useful methods of testing communication systems, protocols and coordination capacity

4.2 Partnerships for communication

A key theme within the literature was the need for coordinated, multisectoral partnerships to support effective communication systems and responses in pandemics and other public health emergencies. Key partnership considerations, approaches and potential actors are outlined in various global guidelines, strategies and frameworks[74-76, 78, 81-83, 85, 87, 104]. These emphasise the importance of utilising existing partnership structures to ensure collaborative and coordinated health communication and community engagement activities. Relevant partners will vary according to local contexts, but should be multisectoral and may include health and community organisations, government organisations, migrant councils, local media, health planners, researchers, community groups and associations, faith-based organisations, and community leaders.

To be effective, partnerships need to establish a coordination platform and mechanisms, develop a communication and community engagement strategy, and determine clear roles and responsibilities for all partners involved in its implementation. They should also play a role in identifying training and development needs, providing training and resources to support effective implementation of communication activities, as well as monitoring and evaluating these activities [74, 78, 85]. The UNICEF field guide on COVID-19 communication and community engagement provides detailed guidance on the potential roles and responsibilities of stakeholders involved in pandemic responses, including health system structure roles (i.e. governments and health units/teams) and stakeholder roles and responsibilities, with an emphasis on community health and health promotion organisations[78]. WHO guidelines on the role of community engagement in response to COVID-19 outlines key actions that should be undertaken by local partnerships to plan and implement collaborative activities[74].

A number of studies in this review reported on the role and success of partnerships during COVID-19 and other disease outbreaks[5, 6, 14, 23, 29, 36, 44, 48, 91]. One study conducted in Australia evaluated an interagency partnership approach to COVID-19 communication with CALD communities[6]. The partnership involved a Primary Health Network (PHN), Refugee Health Service and major hospital and health service. The evaluation reported that pre-existing relationships, commitment by partners, a shared goal and the ability to meet virtually were key enablers of the partnership. A key challenge reported was that the collaboration was labour intensive and impacted on other work responsibilities and commitments. The evaluation also identified the need to strengthen the partnership through formalised governance structures and processes, including a terms of reference, goals, membership and evaluation[6].

Another study conducted in Canada reported on a province-wide partnership of integrated health and social service centres and their support for young people and their families during COVID-19[48]. The key goals of the partnership were to translate and amplify government messages to reduce the spread of infection, develop content to support the psychosocial needs of young people and their caregivers, and create a sense of community for young people and

caregivers through digital and social media. An evaluation of the partnership identified the following key enablers:

- an existing partnership platform with a diverse range of partners, including links to youth advisory groups
- the establishment of COVID-19 communication response team
- existing communication strategies, policies and procedures that could be adapted to the COVID-19 context
- young people informed the communication strategy, goals and actions[48].

A study describing lessons learned from the Ebola outbreak in West Africa highlighted the need to invest in strategic partnerships to achieve short and long-term goals, and noted that partnerships with community members, religious leaders, journalists and community radio were critical to the success of their response[29]. Similarly, a study on the COVID-19 pandemic response in Vietnam showed that local partnerships involved health and community sector organisations, local governments, police, women's unions and youth unions[44].

4.3 Communication practices

Several guidelines, strategies and other guiding documents provide evidence-based advice on effective communication practices in pandemic and other health emergency contexts[73, 75-79, 81, 82, 87, 94, 106]. . These highlight critical components of effective communication practices, including the need to:

- understand community concerns, perceptions and sources of distrust/ misinformation
- identify community information needs
- utilise participatory processes to determine effective communication approaches
- tailor approaches to social, cultural and political contexts
- test and adapt messages
- use a wide range of communication channels and
- establish feedback mechanisms to continuously monitor and evaluate communication approaches and messages.

Key guidelines and empirical studies also reported the need to combine top-down communication approaches with bottom-up approaches to facilitate trust, accountability and two-way communication that is tailored to local needs and contexts[13, 49, 104].

Methods and approaches

This review identified a wide range of communication channels, methods and approaches that are recommended and have been utilised as part of pandemic communication, including television, community radio, print media, mass campaigns, dedicated websites, social and digital media, national hotlines, city message boards, newsletters, mail drops, public/ community meetings, phone trees and text message services[34, 50, 67, 73, 75, 77, 87, 94, 104].

Key guidelines and empirical studies also emphasise the need to work with journalists, local media, and utilise trusted public spokespeople[10, 75, 76].

A rapid review reported on 42 case studies on communication and engagement activities conducted globally, noting that several had been effective in preventing community transmission or addressing other community needs. These included community campaigns, local radio, social media and mobile apps, and online resources[23]. A systematic review found national hotline services to be an effective method of two-way communication, as well as for monitoring public reactions and opinions to inform communication and engagement activities[3]. In India, district control rooms were set up to provide direct phone communication with high-risk individuals, which included multilingual staff to support migrant and CALD communities[46].

A strong theme in the literature was the importance and effectiveness of community radio and working with local journalists for engaging in two-way communication, particularly for reaching the most vulnerable communities in health emergencies[29, 35, 40]. One study reported on the use of entertainment-education campaigns as part of a COVID-19 health communication strategy across various regions[70].

These campaigns adapted existing radio and television dramas to incorporate COVID-19 specific health messages, which were complemented by other communication activities such as live call-in shows, short videos and digital engagement. The study reported entertainment education to be an effective method for reaching a wide audience and increasing knowledge and awareness through storytelling that involves trusted and familiar characters and that is culturally and contextually relevant.

Social media and digital technology

Social media and digital technologies are critical tools for effective communication during pandemics and health emergencies. The World Health Organization strongly recommends the use of social media to raise awareness, engage the public, facilitate peer-to-peer communication, as well as to monitor and respond to rumours, public perceptions and concerns[73].

There were a number of studies that reported on the use of digital and social media as a useful medium for disseminating health information and seeking feedback from communities. For example, as part of the COVID-19 response in Wuhan, the municipal government developed an app for residents, which was used to seek public feedback, conduct sentiment analyses, and inform the development of key messages to address community concerns. It also provided a list of relevant hotlines that residents could contact for further support[49]. Mobile apps such as WeChat and WhatsApp were found to be effective methods for communicating prevention messages with some communities [5, 19, 23, 50, 68]. Studies also reported on the effective use of social media, including platforms such as Facebook, Twitter, and Instagram to promote prevention messages as well as to engage in dialogue with communities[34, 45].

Two studies reported on the use of expert-led social media campaigns. The first study was conducted in Denmark and reported on the development and implementation of a physician-led Facebook group, involving more than 200 volunteer medical physicians.

The Facebook group provided a platform for community members to ask questions and engage directly with doctors during the COVID-19 pandemic, as well as a mechanism for monitoring and responding to misinformation[67]. The second study was conducted in the United States and reported on a social media campaign (Facebook, LinkedIn and Instagram) led by a multidisciplinary team of experts, including epidemiologists, doctors and nurses[54]. The social media campaign was utilised to disseminate health information as well as enable information exchange between followers and health professionals.

Both studies acknowledged that expert-led social media campaigns are useful due to the perceived credibility of health professionals, and their ability to challenge misconceptions and misinformation in a public forum.

4.4 Community engagement and mobilisation

Community engagement is a critical component of effective communication, as well as for mobilising communities during public health emergencies more broadly. Several guidelines and strategies have been developed to guide effective community engagement in pandemics and health emergencies[74, 76-78, 81, 82, 85, 87, 88]. These emphasise community-centred, culturally responsive and participatory approaches that involve communities in the design, delivery and evaluation of preparedness and response activities. They also acknowledge the role of community engagement in reaching marginalised and at-risk communities, building trust, reducing fear, stigma and discrimination, and preventing the exacerbation of existing inequalities.

Communities play a crucial role in responding to and managing outbreaks in pandemics. Effective community engagement involves understanding community concerns and perceptions, identifying their information and support needs, developing a comprehensive plan and supporting communities to adopt public health advice, prevention behaviours and control measures[104].

Effective community engagement requires that two-way communication systems and processes are in place to enable ongoing feedback and dialogue between implementing organisations and community members. There is also a need to strengthen and support community leadership capacity and community governance structures, which requires governments and other organisations to provide resourcing, training and networking opportunities, and supportive policies and environments[14, 74, 94].

Methods and approaches

Studies and guiding documents on community engagement consistently reported the need to work with trusted community members and leaders in order to build trust, mobilise communities and disseminate information[13, 35, 104]. They also frequently reported the importance and effectiveness of working with faith leaders and religious institutions to engage with communities[17, 29, 35, 97, 98]. Two systematic reviews identified a range of other key leaders to involve in community engagement activities, including local Chiefs and Elders, women and women's groups, local authorities, health workers, youth groups and traditional healers[26], community-based organisations, community health committees and volunteers[14]. A number of studies reported on the mobilisation of community volunteers as an effective strategy for achieving wide reach with community engagement activities, particularly in low resource settings[20, 31, 40]. However, a number of papers also cautioned against the over-reliance on volunteers, recognising the risk of overburdening community members, as well as the potential for issues such as gatekeeping, filtered messaging and difficulties interpreting technical advice to negatively impact engagement[5, 7, 92].

This review identified a wide range of methods and approaches used to undertake community engagement, including door-to-door and street outreach, community meetings/forums, attendance at community-led events, community radio, social media and mobile apps (i.e. WhatsApp)[14, 35, 41]. A key strategy utilised in response to COVID-19 in Vietnam was 'supervision groups', in which groups of 2-3 volunteers were set up in villages to provide outreach support to 40-50 designated households, including to share information on prevention and control measures[44]. These 'supervision groups' were supported by the local committees, as well as overarching direction from a national committee.

Door-to-door and street corner outreach was also utilised as part of a response to the Zika virus outbreak in the United States, which allowed informants to communicate with the public directly and disseminate communication materials[34]. The authors of the study also reported that hosting community meetings and setting up stalls at community events were effective methods of engaging the community. A study reporting on key lessons from the Ebola outbreak in West Africa also reported that hosting community meetings was an effective method of community engagement and information dissemination[35].

Monitoring and responding to community perceptions and misinformation

Lack of trust in governments and other public authorities coupled with fear and uncertainty during health crises exacerbates the spread of misinformation, rumours and conspiracies[17, 35, 102]. When communities distrust authorities and public health advice, they are unlikely to adopt the prevention measures necessary to stop the spread of infection[81]. In order to build trust, organisations involved in pandemic responses need to understand community perceptions, concerns and motivations, as well as sources of misinformation. This requires the implementation of systems and processes for tracking and responding to misinformation, rumours and conspiracies as a core element of overarching communication systems[26, 47, 80]. These systems should include in-person and online methods for seeking feedback on and monitoring rumours, which can include social media, online/phone surveys, mobiles apps (i.e. WhatsApp), focus groups, community meetings and forums[76, 78, 80, 81].

An evaluation of risk communication and community engagement efforts in countries across South East Asia highlighted various strategies that were used to track rumours and public perceptions, including regular opinion polls, hotlines, social media monitoring, and feedback from volunteers[17]. A review of pandemic preparedness and responses in West Africa also reported on the effective use of a community-led data collection system to track rumours and community perceptions, which in turn informed communication approaches to address misconceptions[35].

One study reported on the implementation of a social listening strategy to address the COVID-19 infodemic in the East and South African region[47]. It detailed the development of a social listening framework, mapping of resources to support monitoring activities, and establishing standards for consistent listening, analysis and dissemination. It also described the specific listening channels and types of data tracked across five countries. A guide developed by UNICEF also provides in-depth guidance on developing and implementing social listening systems to monitor and analyse misinformation and rumours to disrupt infodemics[80].

Considerations for effective communication and community engagement

Collaborate with communities

- Ensure communities are engaged in ongoing discussions about pandemic responses in order to understand sociocultural contexts, concerns and beliefs
- Involve communities in the co-design of communication and engagement strategies/plans, messages and resources
- Establish mechanisms for seeking regular feedback from communities
- "Top-down" communication from public officials must be supported by "bottom-up" approaches to establish trust and respond to local needs
- Identify and involve trusted community leaders and influencers to mobilise communities and disseminate messages

Useful channels and approaches

- Incorporate social media and traditional media to provide information in a range of formats, including audio, video, and other visual formats
- Utilise social media to engage the public, facilitate peer-to-peer communication and disseminate messages
- Use a range of methods for communicating and engaging with communities, including online, phone-based (i.e. phone trees, text-messaging, mobile apps) and face-to-face methods (i.e. door-to-door, community forums, events)
- Involve a broad range of professionals as public spokespeople, as their trust and credibility will vary across communities
- Utilise community radio to deliver messages and two-way communication with communities

Effective messaging

- Messages need to be tailored to community context and values
- Messages should be transparent about uncertainties relating to risks, events and interventions
- Messages should contain specific actions people can take to protect their health
- Avoid the use of jargon and technical terms without simplifying messages too much
- Public health messaging needs to be consistent and should be repeated across various sources and platforms to build trust and mitigate rumours
- Messages need to be continuously adapted to respond to changing community needs over time (this should be informed by community feedback)

4.5 Communication and engagement with CALD communities

There were 21 articles or documents that reported specifically on, or had a substantial focus on communication and community engagement with CALD and migrant communities[5-9, 16, 21, 32, 33, 39-41, 44, 53, 56, 92, 94, 96, 99, 100, 102]. A number of critical factors for effective communication and engagement with CALD communities were identified in the review, including:

- the need for adequate and timely translation and use of interpreters
- establishment of a culturally and linguistically diverse workforce, including liaison officers, advisors and bicultural workers
- collaborating with multicultural and settlement services
- use of and engagement with ethnic media, involving community leaders and faith/religious leaders to disseminate information and mobilise communities
- co-designing messages and resources with communities
- utilising a range of communication channels, including online, face-to-face, telephone and community meetings.

Experiences of CALD communities in Australia during COVID-19

There were several research reports and policy documents that reported on communication and community engagement with CALD communities in Australia during the COVID-19 pandemic[5, 7-9, 96, 99]. A study conducted by the University of New South Wales investigated engagement with CALD communities during the COVID-19 pandemic and reported a broad range of issues and barriers. It reported that information was not available in all languages and that translation of materials had been slow, unreliable and at times inaccurate and inconsistent, that ethnic media had been underutilised, resources had not been tailored to literacy needs, that many people did not have access to social media or virtual networks and that newly arrived migrants were likely to experience the greatest challenge accessing information as they have not yet established networks or connections with service providers[96].

In terms of opportunities to improve communication with CALD communities, the study highlighted the role of settlement staff, case workers, bilingual workers and community leaders in synthesising and disseminating information, as well as the importance of involving community leaders in the co-design of messages and as conduits for feedback about community concerns[96]. They also noted the need to work with community organisations to identify the best strategies for disseminating information, which may include social media, WhatsApp groups, phone calls and community meetings. The authors made several recommendations to improve communication relating to the vaccination program, including identifying community ambassadors and training them on how to have vaccine conversations with hesitant people.

An evaluation study that explored the impact of a collaborative initiative to engage CALD communities in Queensland in COVID-19 health communication[6] reported on the channels and sources of information

utilised, as well as barriers and enablers to communication. It found that communities accessed information through a range of channels but that their preferred channels were community leaders, faith leaders and family, who they sought information from via social media and WhatsApp groups. It also found that the most trusted sources of information were those produced by the Queensland Government, followed by community and faith leaders. Community leaders were also seen as important conduits for sharing official information sources in ways communities could understand and relate to. Key barriers to communication included the lack of translated materials, the information overload, and the release of conflicting information/advice, while key enablers included existing networks and relationships, the involvement of community leaders to translate and simplify messages, information provided in audio and video formats, the dissemination of information through social media, and regular information sharing by the Queensland Government[6].

Similar findings relating to challenges and enablers were reported in a national study on communicating with CALD communities in Australia[9]. The key challenges identified included translated information not being available in community languages, the lack of testing of translated materials by CALD communities to ensure they were accurate and easy to understand, underutilisation of trusted messengers (i.e. community leaders), underutilising appropriate methods and channels (i.e. ethnic media, videos), and the lack of CALD advisory groups to inform communication activities. The key enablers reported included connecting community leaders with health authorities for support, resourcing community leaders to lead translation and communication in their communities, and collaborating with ethnic media[9].

The Ethnic Communities' Council of Victoria (ECCV) highlighted various communication gaps and issues with the Victorian response to COVID-19, including a lack of coordination overall, and a failure to involve multicultural organisations in pandemic planning and implementation[8, 99]. They also noted that CALD communities were often unable to obtain translated information and that service providers had difficulty accessing interpreters in a timely manner, which prevented access to services and information. ECCV advocated the need to strengthen communication by developing an integrated communication strategy with multicultural organisations, identifying priority communities and tailoring approaches to their needs, allocating funding to develop and deliver messages in languages, and engaging community connectors and bicultural workers to mobilise communities[8].

The Migration Council of Australia released a policy brief that highlighted the impact of racism and discrimination on migrant communities, and that the mistrust it causes influences their willingness and ability to engage with health services for information[7]. As a way of addressing this, they emphasised the need to engage health workers from diverse backgrounds to deliver public health messages through community outreach activities. They also emphasised the need to tailor communication approaches to the needs of specific communities, taking age, gender, preferred language, and

migration status into account and to balance official public health advice with other trusted sources. They also reported the role of community leaders in disseminating information, but cautioned about some limitations of this approach, including the potential for 'gatekeeping' and filtering, as well as gaps in knowledge and ability to interpret technical information[7].

Similar issues and experiences were outlined in a report by the Settlement Council of Australia, which focused on newly arrived migrant and refugee communities[5]. They noted that official government resources were not sufficient to reach newly arrived communities, that translations were often inaccurate, and that frequently changing prevention measures and restrictions created confusion and anxiety for communities. The primary sources of non-government COVID-19 resources for migrant and refugee communities were mass media communications (particularly the SBS), settlement services and community leaders. The distribution methods used by settlement services and community leaders included social media and mobile apps such as WeChat and WhatsApp, phone calls to clients, online teleconferencing platforms such as Zoom and Skype, and in-person communication by trusted individuals. The report acknowledged that community and religious leaders are a trusted source of information and key influencers of behaviour and decision-making in newly arrived communities, but also raised concerns about over-relying on community leaders and the risk of entrenching power in a few individuals[5].

As translated materials were not readily available in the early stages of the pandemic, settlement services were required to play a key role in translating information, which was facilitated by bicultural and bilingual workers and community leaders. However, settlement services were not adequately resourced to do this work, and indicated that additional funding is needed to manage the communication workload and ensure that community leaders and volunteers are remunerated for their involvement.

Communication campaigns and interventions

There were five peer reviewed articles that described communication interventions or strategies targeting culturally and linguistically diverse communities. A study conducted in Qatar examined the strategies employed by government to communicate with migrant workers, and described the use of a multi-strategy campaign to disseminate COVID-19 information in various languages[40]. It found the use of radio and volunteers, developing and distributing videos via Facebook, and partnering with trusted community and religious leaders were effective methods for communicating information with CALD communities.

In the United States, a national organisation developed culturally relevant digital content targeting the Latinx community to raise awareness about the COVID-19 pandemic[33]. The intervention used a combination of website blogs, peer-modelled stories, podcast episodes and Tweetchats to engage people in conversations and action on the pandemic. They evaluated the digital content using Google Analytics and social media measurement

tools and found it generated a significant amount of website traffic and engagement. A study conducted in Indonesia also reported on a social media campaign in which materials were developed in nine local languages, approved by traditional elders and disseminated via Facebook[53]. An evaluation of the materials indicated they were more accessible, easier to understand, supported people to comply with health protocols and reduced beliefs in conspiracy theories.

A study conducted in Taiwan examined top-down and bottom-up multilingual COVID-19 public health messages targeting Aboriginal communities[32]. It found that very few public health messages were delivered in Aboriginal languages, and those that were did not adequately address the values or concerns of Aboriginal people. In contrast, communication resources developed in Aboriginal language by Aboriginal communities, such as cartoon videos and outdoor signs, as well as direct communication by Aboriginal teachers were more effective in conveying messages to communities.

Finally, a study conducted in Norway reported on a communication campaign targeting Somali migrants, which utilised Somali-speaking ambassadors, video resources and a network strategy to disseminate information about COVID-19[41]. The study showed that ambassadors were critical for establishing credibility with the community, and that to gain the trust of communities they needed to be perceived as competent and in a position of authority (for example doctors and teachers). The local Mosque was an important place for engaging communities and seeking feedback on campaign videos, and there was an agreement within the community that videos could only be distributed through private networks, and only among the Somali community. In parallel to the videos, ambassadors promoted key messages via community radio and through face-to-face conversations. While the study did not report outcomes of the campaign, it did indicate that the videos reached a large audience, with over 20,000 views in total.

Additional considerations for effective communication and community engagement with culturally and linguistically diverse (CALD) communities

- Involve migrant, refugee and multicultural organisations as key members of governance/coordination groups and partnerships
- Recruit a diverse workforce to lead communication and engagement activities with CALD communities, including bicultural workers, CALD advisors and liaison officers
- Information should be translated into as many community languages as possible, and interpreters should be made available to facilitate communication with people engaging with services
- Partner with culturally and linguistically diverse communities to develop, test and disseminate information, tools and resources in community languages
- Identify and involve trusted community leaders and influencers to mobilise communities and disseminate messages, including faith/religious leaders and bicultural workers
- Provide regular opportunities for community members to meet with community leaders and ask questions or raise concerns relevant to their communities
- Work with ethnic media to disseminate information and enable two-way communication with communities
- Implement public campaigns that challenge racism and discrimination and promote community cohesion
- Avoid blaming and stigmatising specific communities when developing and implementing targeted communication and community engagement activities

5. Recommendations

Evidence from this review demonstrates the need for strong communication systems, as well as strategic and coordinated communication as part of an overall response to pandemics and other public health emergencies. This includes the need to establish the necessary infrastructure, resources and workforce capability before the onset of an outbreak or emergency, and sustaining effective action throughout the response and recovery phases.

Experiences from past pandemics and outbreaks provide opportunities to examine and apply the lessons learned in order to improve communication systems and practices in Australia. There is also a significant amount of scientific, policy and practice guidance provided by the World Health Organization as the global body responsible for leading and coordinating global action, as well as by other health, development and humanitarian organisations involved in implementing communication and community engagement responses at the community level.

While federal and state governments have overall legislative and leadership responsibility for public health communication during pandemics and health emergencies, regional and local level partnerships have a critical role to play in the coordination and implementation of communication responses, and can significantly bolster national and state communication systems, and ensure alignment of messages and responses. Communication systems at national, state and regional levels are required, which should incorporate clear governance and coordination mechanisms, a communication strategy, resourcing for communication and engagement activities, training and other capacity building opportunities for local implementers, and monitoring and evaluating of communication systems and responses.

Recommendations for governments

- Invest in and establish critical health communication systems infrastructure, including communication teams/units, a skilled workforce with defined roles and responsibilities, a dedicated budget/resources, governance and coordination structures, policies and protocols, and monitoring and evaluation systems.
- Systems infrastructure needs to be sustained over the long term to ensure adequate pre-emergency planning and capacity to respond when emergencies arise. Permanent public health communication teams made up of technical experts can also play an ongoing role in building communication capacity of partners and key stakeholders, and lead communication activities on public health issues more broadly.
- Embed communication functions within pandemic and health emergency legislation and plans, as well as other relevant public health plans and policies.

- Whole of government, multisectoral coordination structures (i.e. taskforces, committees), should incorporate communication specific functions and should have a clear chain of command from the highest level of government down to regional and local level coordination groups and partnerships.
- Develop a comprehensive communication and community engagement strategy in collaboration with key stakeholders, outlining key goals, objectives and multi-method approaches, as well as clear roles and responsibilities for all stakeholders involved in implementation. This should be supported by guidelines, resources and tools to support effective communication, including how to identify and respond to misinformation.
- Ensure all official advice is translated into community languages and disseminated widely through various channels, including official websites, social media, ethnic media, and hotlines. Translations should be performed by professional translators to ensure they are accurate, and produced in a timely manner to minimise confusion and the spread of misinformation. Funding should also be provided to multicultural and migrant organisations/services to facilitate translation of information and resources at the community level.
- Avoid using public communication to politicise emergency situations - all communication/messaging should be focused on instilling trust in the public and providing communities with the information they need to respond to the emergency. This can be supported by using a range of trusted spokespeople to communicate health advice, including health professionals and community leaders.
- Utilise social media, traditional media and a wide range of other communication approaches and formats to communicate and engage with communities, including audio, video, phone-based and face-to-face methods.
- Allocate funding to a wide range of community and non-government organisations specifically to support communication and community engagement activities at local community level.
- Identify the training and development needs of key stakeholders involved in communication and engagement activities, and provide training activities accordingly.
- Undertake regular monitoring and evaluation of communication systems and responses. This should include a focus on:
  - Community needs, public perceptions, rumours and media activity
  - Reach and effectiveness of communication messages, including impact on community perceptions, attitudes and behaviours
  - Appropriateness and effectiveness of communication and engagement methods and approaches
  - Post-pandemic evaluations of systems capacity and performance to inform improved responses to future emergencies

Recommendations for regional authorities and partnerships

- Establish regional health communication systems, including communication teams with defined roles and responsibilities, a dedicated budget, coordination groups, policies and protocols, and monitoring and evaluation systems.
- Advocate for the integration of regional level partnerships and coordination mechanisms into overarching government coordination structures.
- Partnerships and coordination groups should involve a broad range of organisations and sectors, including local community leaders and members.
- Develop and implement a regional communication and community engagement strategy, outlining key goals, objectives and multi-method approaches, as well as clear roles and responsibilities for all stakeholders involved in implementation. These should be consistent with overarching government strategies, whilst also responding to local contexts and needs.
- Support regional partners to undertake effective communication by developing communication tools and resources, and establish criteria for screening and sharing communication materials to ensure they contain credible and accurate information.
- Utilise social media, traditional media and a wide range of other communication approaches and formats to communicate and engage with communities, including audio, video, phone-based and face-to-face methods.
- Identify the training and development needs of regional partners involved in communication and engagement activities, and provide training activities accordingly.
- Undertake regional level monitoring and evaluation of communication and engagement activities. This should include processes for:
  - Seeking feedback on community concerns and perceptions
  - Monitoring rumours and misinformation
  - Assessing the reach and effectiveness of communication messages, including impact on community perceptions, attitudes and behaviours
  - Assessing the appropriateness and effectiveness of communication and engagement methods and approaches

Recommendations for local implementers

- Participate in regional partnership and coordination groups, and support the implementation of regional communication and community engagement strategies.
- Establish health communication specific roles within your organisation.
- Develop health communication policies and procedures, including clear roles and responsibilities for relevant staff.
- Recruit a team of bicultural workers to lead communication and engagement activities with CALD communities.
- Identify and involve trusted local community leaders and influencers to mobilise communities and disseminate messages.
- Utilise social media, traditional media and a wide range of other communication approaches and formats to communicate and engage with communities, including audio, video, phone-based and face-to-face methods.
- Translate your organisation's communication resources into community languages, and ensure interpreters are available to support communication with service users.
- Participate in and support evaluation of regional and local level communication and community engagement activities.

6. Appendices

Appendix 1: Search Strategy

Peer reviewed literature search	
Inclusion criteria	• Published between 1 January 2011 and 30 September 2021 • Published in English • Must contain the terms COVID-19 (or equivalent terms) or pandemic or epidemic or health emergency or disaster and communication • Full-text articles only • Studies on effective communication systems, technologies, methodologies, strategies and campaigns • Studies on effective community engagement approaches
Exclusion criteria	• Published prior to 2011 • Languages other than English • Publication types: editorials, conference abstracts, letters, blogs and news articles • Does not contain the terms COVID-19 (or equivalent terms) or pandemic or epidemic or health emergency or disaster and communication • Studies on imaging systems • Studies on clinical/diagnostic systems • Studies on bioinformatics or Geographic Information Systems (GIS) • Studies on corporate communications during pandemics • Studies testing specific messages and message framing
Grey literature search	
Search phrases	• Effective communication systems in pandemics • Communication systems in health emergencies • Coordinated communication in health emergencies • Health communication in pandemics • Community engagement in pandemics • Communication with CALD communities COVID • Communication with migrant communities COVID • COVID communication strategies with CALD and migrant communities
Inclusion criteria	• Published between 1 January 2011 and 30 September 2021 • Published in English • Must contain the terms COVID-19 (or equivalent terms) or pandemic or epidemic or health emergency or disaster and communication • Will select relevant articles from first 50 results per search phrase

Exclusion criteria	• Published prior to 2011 • Languages other than English • Publication types: editorials, conference abstracts, letters, blogs and news articles • Does not contain the terms COVID-19 (or equivalent terms) or pandemic or epidemic or health emergency or disaster and communication • Studies on imaging systems • Studies on clinical/diagnostic systems • Studies on bioinformatics or Geographic Information Systems • Studies on corporate communications during pandemics • Studies testing specific messages and message framing

Search terms and logic

	Terms	Field
	COVID-19 OR COV-19 OR coronavirus OR pandemic OR epidemic OR "health emergency" or disaster	
AND	"Communication* system" OR "mass communication" OR "campaign" OR "health communication" OR "health literacy" OR "communication method*" OR "Communication Information Technology" OR "crisis communication" OR "alert system" OR "early warning system"	Title/Abstract
AND	English	Language
NOT	Editorial OR letter OR comment OR news article	Publication type
NOT	Bioinformatics OR "Geographic Information System"	Title/Abstract

Appendix 2:
Global communication guidelines, strategies and frameworks

The global guidelines, strategies and frameworks identified through this review have been summarised here as they provide comprehensive guidance on establishing health communication systems, as well as evidence-based communication and community engagement practices in public health emergencies.

WHO guidelines and guides

The WHO Guidelines for emergency risk communication (ERC) policy and practice[73] were released in 2017 to provide WHO Member States and other government, public health and community organisations with evidence-based, systems-focused guidance on effective communication and community engagement in public health emergencies. The guidelines were informed by a literature review and expert panel and make recommendations across three strategic areas: i) building trust and engaging with affected populations; ii) integrating ERC into health emergency response systems, and iii) ERC practice. The first strategic area focuses on building trust, communicating uncertainty and community engagement. The second strategic area on emergency response systems focuses on governance and leadership, information systems and coordination, capacity building, and financing. The third area covers strategic communication planning, monitoring and evaluation tools, social media and messaging.

At the start of the COVID-19 outbreak, the World Health Organization released interim guidance to countries on communication and community engagement readiness and initial responses to the COVID-19 outbreak[10]. It outlined action steps across six core areas. At the systems level, the checklist emphasises the need for government leadership, establishment of a communication team with clear roles and responsibilities, the development of a communication strategy and procedures, preparation of a communication budget. It also encourages the establishment of multisectoral partnerships and coordination mechanisms, including at the local level. WHO also developed a step-by-step action guide and resource that supports the development of COVID-19 communication and community engagement action plans at national and local levels[82].

The WHO Western Pacific Region released guidelines on the role of community engagement in situations of extensive community transmission[74], which provide advice on community engagement principles, actions and approaches, with an emphasis on partnerships, community networks and community governance structures. The WHO Regional Office for the Americas released guidelines for leaders on how to communicate about COVID-19, which outlined key principles, goals, messages and considerations[106], as well as a guide for preparing a communication strategy specifically on COVID-19 vaccines[83]. This guide includes an overview of the components of a communication strategy, preparing and disseminating messages, advice on effective communication and key considerations.

WHO strategies and frameworks

There were two COVID-19 strategies and two communication related frameworks identified in this review. The COVID-19 Global Risk Communication and Community Engagement Strategy[85] sets out

four key objectives for global action, with corresponding actions. The objectives are: i) community-led; ii) data driven; iii) reinforce capacity and local solutions; and iv) be collaborative. The strategy also provides a global COVID-19 behaviour change framework with a set of key indicators for monitoring the impact of communication and community engagement activities.

The COVID-19 Global Response Risk Communication and Community Engagement Strategy[87] is intended to guide national level responses to the pandemic, including advice to governments on working with local level stakeholders. It provides a detailed outline of actions and approaches to be implemented under four transmission scenarios: i) with no cases, ii) with sporadic cases; iii) with clusters of cases; and iv) with large outbreaks and community transmission.

The management of infodemics has been identified as a key priority for the World Health Organization due to the escalation of mis/disinformation during COVID-19. As part of their response to this issue, WHO released a workforce competency framework that aims to build global capacity to manage infodemics[86]. The framework establishes key competencies for the workforce and provides guidance on how to strengthen infodemic management capacity through hiring practices, staff development and human resource planning.

The WHO Strategic Communications Framework for Effective Communications[84] is targeted at policy makers, health organisations, communities and individuals and has a broad focus on health communication. It specifies six key principles and associated actions and approaches for effective communication, as well as a framework for evaluating communication activities and campaigns.

UNICEF and UN Women guides

UNICEF released three guides to support communication and community engagement during the COVID-19 pandemic. The first of these was developed for use by provincial, district and facility level health teams to support community health organisations and health promotion officers to implement community engagement activities for COVID-19 prevention, detection and response[78]. This guide details community level roles and responsibilities and community engagement actions, as well as specific community awareness and education activities, community feedback mechanisms, and approaches to monitoring and evaluation.

The second provides practical guidance for communication and community engagement with refugees, internally displaced peoples, migrants and communities vulnerable to the COVID-19 pandemic[79]. It includes key considerations and recommendations on partnerships and coordination, communication approaches and channels, and strengthening community capacity.

The third guide focuses specifically on managing vaccine misinformation in communities and provide a step-by-step action guide across four phases: i) preparation; ii) listening; iii) understanding; and iv) engage. It also contains a section on how to set up social listening systems in order to monitor and manage rumours and misinformation[107].

The UN Women guide[77] provides guidance on how to include marginalised and vulnerable people in communication and community engagement activities, informed by a gender and inclusion lens and recognising the structural facts that make some communities more vulnerable to COVID-19. The guide includes actions for working with specific communities, including migrants and refugees, people with disability, children, pregnant women and the elderly.

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