



TECHNICAL REPORT

A literature review on community and institutional preparedness synergies

Enablers and barriers in community and institutional
preparedness effectively working together globally and
specifically within the EU/EEA

ECDC TECHNICAL REPORT

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Enablers and barriers in community and institutional preparedness effectively working together globally and specifically within the EU/EEA



This report was commissioned by the European Centre for Disease Prevention and Control (ECDC), coordinated by Judit Takács, and produced by Bazian Ltd.

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Acknowledgements

ECDC would like to thank the Bazian team: Alan Lovell, Katie Geary and Rob Cook for literature searches, expert advice and reviewing document drafts. Lucrezio Ciotti contributed substantially to the project design and provided detailed comments on document drafts. At ECDC Andrea Würz provided detailed comments on document drafts.

Suggested citation: European Centre for Disease Prevention and Control. A literature review on community and institutional emergency preparedness synergies. Stockholm: ECDC; 2017.

Stockholm, February 2017

PDF

ISBN 978-92-9498-036-6

doi: 10.2900/2499

Catalogue number TQ-02-17-227-EN-N

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Glossary

Catastrophe	An event is a catastrophe when the impact is regional, with most daily routines of individuals, families, businesses and governments completely disrupted. Most or all of the community area is heavily impacted and there are often many deaths. A key difference to a disaster is that, in a catastrophe, multiple regions are affected; thereby preventing help from communities close by, so national and international aid is required. However, this aid is often slow to arrive.
Communities of practice	These are communities created by groups of people whose daily work includes dimensions of emergency management, in order to deepen knowledge and expertise on a topic. In order for these communities of practice to be effective, a leader who knows the right people and brings them together in a cohesive way is essential.
Disaster	A serious disruption in the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources. A disaster breaks a local community's ability to respond to an event.
Disaster management	These are activities designed to minimise loss of life and damage – for example by removing people and property from a threatened location and by facilitating timely and effective rescue, relief and rehabilitation. Preparedness is the main way of reducing the impact of disasters. Community-based preparedness and management should be a high priority in emergency preparedness.
Emergency	An event or situation which threatens serious damage to human welfare, the environment, or war or terrorism which threatens serious damage to the national security. The definition of "emergency" is concerned with consequences, rather than with cause or source. Therefore, an emergency inside or outside one area is covered by the definition, provided it has consequences inside the area in question. An emergency can be thought of as a part of everyday life.
Emergency preparedness	Actions taken in anticipation of an emergency to facilitate rapid, effective and appropriate response to the situation.
Emergency risk management for health	Emergency risk management for health is multisectoral and refers to the systematic analysis and management of health risks, posed by emergencies and disasters, through a combination of (i) hazard and vulnerability reduction to prevent and mitigate risks, (ii) anticipation, (ii) response and (iv) recovery measures.
Public health emergency preparedness (PHEP)	The capability of the public health and health care systems, communities, and individuals, to prevent, protect against, quickly respond to, and recover from health emergencies, particularly those whose scale, timing, or unpredictability threatens to overwhelm routine capabilities. Preparedness involves a co-ordinated and continuous process of planning and implementation that relies on measuring performance and taking corrective action.
Risk	An evaluation of the probability of occurrence and the magnitude of the consequences of any given hazard. The risk of a disaster is the probability of a disaster occurring.
Vulnerability	The degree to which a socio-economic system is either susceptible or resilient to the impact of natural hazards and related technological and environmental disasters. The degree of vulnerability is determined by a combination of several factors including hazard awareness, the condition of human settlements and infrastructure, public policy and administration, and organised abilities in all fields of disaster management.

Executive summary

Background

Public health emergency preparedness (PHEP) too often focuses on institutional capabilities alone, including the provision of material and financial resources, technical expertise and political influence [1], while overlooking community capabilities. Community capabilities may involve coordination with emergency management, public health institutions, community and faith-based partners and other groups to provide and sustain a flexible approach to emergency response and recovery, without jeopardising services to individuals in the community [2]. However, the success of institutional preparedness plans depends upon acceptance by the public to ensure that the execution of the plans is complete and successful in preparedness at community-level and promoting recovery. Broader community engagement is therefore recommended worldwide. Community engagement has the potential to be an enabler and/or a barrier to preparedness depending on how it is handled and constructed. The synergies between institutions and communities will influence the effectiveness of engagement programmes, which comprise a plan of activities and events involving the community [3]. This literature review aims to identify the enablers and barriers to communities and institutions working together in the context of emergency preparedness.

Methods

A literature review was carried out to identify enablers and barriers to community and institutional synergies in emergency preparedness. Searches were undertaken across bibliographic databases and grey literature sources.

There were no restrictions on country or study type, to incorporate a comprehensive range of contexts. The literature identified was qualitative in nature. A qualitative, 'best fit' framework approach using a pre-existing framework was used to analyse the literature, whereby themes were added and changed as analysis progressed.

Results

A working definition of community was identified, based on a 'whole community' approach, described as a process rather than a fixed definition, inclusive of the whole multitude of stakeholders including community residents, leaders, emergency management staff and government workers. Three main themes were identified relating to enablers and barriers of community and institutional synergies in emergency preparedness: context, infrastructure and process. These were extracted from the pre-existing framework. Important factors identified included the trust communities place in institutions and technical experts, as well as the existing relationships between community groups. Another finding was that emergency preparedness initiatives can be incorporated into already embedded networks and practices, which is shown to be more effective than trying to create new ones, using the lever of trust to enhance success. Moreover, it was found that community ownership should be the ultimate aim in engagement techniques, with all community members acknowledging they have a role to play in emergency preparedness. The literature indicates that groups who are vulnerable (for a variety of reasons) will need particular attention when engaging in emergency preparedness to ensure they gain information in the most impactful way, and their voices are heard and responded to.

Conclusion

In this project, a definition of community that encompassed the 'whole community' approach was used. This definition will be useful in the context of community and institutional synergies in emergency preparedness, as it is dynamic and inclusive. It includes the full spectrum of stakeholders including community residents, as well as a 'community of communities', allowing for a more detailed understanding of the whole community. The most effective way of engaging communities in emergency preparedness depends on the context. Given the diversity in community make-up, the types of emergencies that could be faced, the socio-economic, environmental and political range of communities, there are no set practices to follow that will be effective for all communities. However, to be successful, engagement should be meaningful and take into account the views of community members. Special attention is required to include hard-to-reach groups and those who may not already have a voice in the community.

1. Background

Context

Public health emergency preparedness (PHEP) can be defined as 'the capability of the public health and healthcare systems, communities, and individuals, to prevent, protect against, quickly respond to, and recover from health emergencies, particularly those whose scale, timing, or unpredictability threatens to overwhelm routine capabilities' [4]. It has often focused on the institutional capacities and capabilities required to enact a centralised response to an emergency. Capacities are the resources, including the infrastructure, personnel and policies that a public health system has to draw upon; whereas capabilities relate to the actions that a public health system is capable of taking to effectively identify, characterise and respond to emergencies and execute preparedness tasks [4]. The potential contribution of communities to emergency preparedness has often been overlooked by governments, who are regularly perceived to have the ability to prevent unwanted incidents happening and to effectively handle emergency situations if they do occur [5]. Given that emergencies are inevitable, countries globally are encouraged to have effective plans in place that consider and reduce the social and economic disruption of the whole community [6]. Recent public health emergencies, most notably Ebola, have shown the potential of community engagement as a resource that can either help or hinder institutional responses to emergencies. It demonstrated that public health emergencies cannot be handled effectively without taking into consideration the perspectives of the involved communities.

Community engagement is frequently included as an outcome of emergency preparedness initiatives and its potential is recognised by many in the emergency preparedness field, within both an EU and global context [1]. In the United States of America, a national dialogue has been initiated to foster collective learning from experiences of communities across the country [7]. Such community engagement is important in all phases of the community preparedness process. It includes identifying risks, prioritising top risks, understanding prioritised risks in detail, identifying preparedness options, designing preparedness strategies, implementing preparedness strategies, monitoring and evaluating past or current events and updating preparedness strategies [8]. However, it is unclear whether this knowledge, enthusiasm and global commitment to community and institutional preparedness through relationship building and engagement, necessarily translates into action [9]. Potential barriers to emergency preparedness planning are a misunderstanding of what a 'community' really entails and the scarcity of knowledge about the factors that affect whether community engagement is a useful resource or not- and in which situations.

Typically, plans involve little consultation with the public and are instead top-down, guided heavily by government and public health agencies, along with scientific experts [8]. However, plans need to be accepted by the public and have the ability to be executed at the community-level, for which ownership and engagement are key. Community engagement aids understanding of community perspectives and local values, increasing the likelihood that plans will be acceptable to communities [10]. Likewise, communities and the social ties among groups of individuals are in themselves useful resources to be utilised and built upon. A bottom-up dialogue of requirements and capabilities could be included in preparedness plans [10].

There has been a shift in global thinking in response to emergencies, such as Ebola [11], that have highlighted the contribution of community engagement to improved emergency preparedness planning and response, including avoiding noncompliance of communities to preventive measures such as disinfectant use, which played a crucial role in the spread of Ebola [11]. The Sendai Framework for Disaster Risk Reduction 2015–2030 was adopted in 2015 at the Third UN World Conference in Sendai, Japan. It recommends broader community engagement in the development of international, national and local policy on risk management and emergency response [9]. The Sendai Framework emphasises the need to engage communities in preparedness planning, in order to create the relationships and infrastructure that can be activated to aid an effective and swift emergency response [9]. Community engagement methods encompass all aspects of planning and preparedness from mass communication in multiple forms in response to an emergency, to representatives on forums informing policy development. Similarly, the European Security Research and Innovation Forum (ESRIF) states that European citizens should be included as decisive and integral parts in emergency management solutions [1].

Every individual has resilience abilities that need to be utilised in an emergency situation [12]. Resilient communities have a role to play in each stage of the emergency preparedness cycle [13]. The emergency preparedness cycle consists of three main stages: anticipation (or planning), response and recovery [8]. For example, in the anticipation phase, resilient communities can carry out an on-going assessment of capacities, assets and where vulnerabilities lie. In the response phase they can carry out local monitoring and a two way flow of information with emergency responders and the public. In the recovery phase they can carry out activities such as evaluating initiatives and considering lessons learned [13].

There is an important difference in 'community-level' interventions, which involve interventions aiming to change an entire community and 'community-based' interventions, focusing solely on individual behaviour [14]. While preparing people individually is important in emergency preparedness, it may not necessarily result in the whole community being prepared. This needs to happen through community-level interventions, targeting existing networks and groups, which is equally important [14].

At present there seems to be a gap between evidence and practice in terms of synergies between communities and institutions and how institutions can engage communities. This may adversely affect the ability of institutions and communities to be prepared and effectively respond to emergencies. Therefore the European Centre for Disease Prevention and Control (ECDC) commissioned this literature review to explore what factors are enablers and barriers to communities and institutions working together in the context of emergency preparedness.

Aims and objectives

In order to explore the factors enabling and preventing communities and institutions working together in emergency preparedness, three questions are proposed to guide the literature review in comprehensively investigating this topic.

- What enables communities and institutions to work together/co-operate in emergency preparedness globally and specifically within the EU/EEA?
- What barriers are there preventing or impeding communities and institutions working together in emergency preparedness?
- What is a suitable working definition of 'community' that can be used in the context of emergency preparedness to generate recommendations in multiple contexts?

Terminology

For the purposes of this review, 'emergency preparedness' was defined as the 'actions taken in anticipation of an emergency to facilitate rapid, effective and appropriate response to the situation' [15]. The definition was designed to include all incident types of relevance to emergency anticipation, response and recovery; it is not limited to infectious diseases. The extent to which a community is prepared depends on its capacities (the resources available) and its capabilities (actions taken to effectively identify, characterise and respond to emergencies) [4].

Determining whether an event is as an 'emergency' (part of everyday life), a 'disaster' (breaks a local community's ability to respond to an event), or a 'catastrophe' (regional impact and aid from outside is slow to arrive) is not simple [16]. These terms are not mutually exclusive and it is acknowledged that such events occur along a continuum, whereby you can distinguish between each depending on the severity for the community in question [1]. However, the terms are used interchangeably within the literature to refer to emergencies of all severity [1]. Therefore, the three terms will be used in this review, as given in the literature.

'Institution' is also not a standardised term. Therefore we did not determine a fixed definition. Institutions covered in this review include any agency external to the community involved in emergency planning and response, such as government bodies, NGOs and national or international emergency management organisations. This was to prevent the exclusion of potentially relevant documents where organisations did not describe themselves as 'institutions'.

The term 'emergency management' will refer to the management of all events mentioned in the literature review – encompassing all major events that threaten to harm a community [1]. Emergency management involves three stages in a cycle: anticipation, response and recovery [17]. The activities and engagement of the community at each of these stages will differ and while some practices and recommendations will be applicable to all three, some may be stage-specific. Therefore, this review will encompass all three stages, examining enablers and barriers to community preparedness throughout the preparedness cycle.

2. Review methods

This review set out to identify and analyse the literature describing the barriers and enablers to creating and leveraging institutional and community synergies to improve emergency preparedness globally and specifically within the EU/EEA.

We anticipated variability in the way that this body of literature is described and that relevant documents might not fall into established categories or methodological descriptions. Therefore we did not limit our searching or selection to specific study types. We systematically searched for various types of literature, including grey literature, peer-reviewed literature and qualitative literature.

This literature review used systematic methods to pragmatically identify the most relevant literature in this area. The search process is documented to ensure transparency. This review was not designed to be fully comprehensive; as such it is not described as a systematic review. However, the use of different methods of document identification and retrieval was designed to ensure that key references were included.

The literature review was structured around three key stages:

- Search and sift
- Development of a working definition of community
- Analysis and thematic synthesis

Step 1: search and sift

Searching

To identify relevant literature we used a three-pronged search approach designed to retrieve various study types:

- scoping search
- bibliographic database and grey literature searching
- supplemental search methods.

The search was conducted in three phases. The first phase involved a top-level search using Google Advanced search and Google Scholar in order to identify key academic articles and reports to identify keywords and concepts for a more in-depth second phase. This second phase involved searching the interdisciplinary database Scopus (which indexes the same journals as MEDLINE) and grey literature sources (Google Advanced, Google Scholar, preventionweb.net and cdacnetwork.org) for examples of enablers and barriers to the community and institution synergies [18, 19]. The third phase involved consulting with ECDC experts to identify additional references and searching the reference list of included documents.

The search strategies used in the various information sources combined the concepts within the scope of this project, in such a way to maximise the proportion of relevant results we retrieve (specificity) without excessively reducing the sensitivity of the search strategy (the ability to retrieve all relevant results). Including multiple methods of document identification enabled us to retrieve the most relevant results and maximise comprehensiveness.

The search strategy was developed based on the agreed scope, the key references included in the ECDC request for proposal and terms identified during the kick off meeting discussions and scoping search. It was designed to cover the concepts within the scope:

- emergency preparedness
- community partnership
- barriers and enablers.

Searches combined free text and thesaurus terms (where available). Synonyms such as 'public health emergency' and 'disaster preparedness' were included in the search strategies, along with community-related terms and synergy-related concepts such as 'working together'. Search terms were identified using the citation pearl growing method, using the articles included in the original request for proposal and the brief scoping search [20]. The search strategy used in Scopus is included in Appendix 1. An additional top-up search was performed in Scopus, adding in 'community preparedness', 'community engagement' and 'community participation', which added one additional article.

Searches were not restricted by language or study type in any sources, or by subject area within Scopus. Searches were restricted by date, from 2000 to present.

The searches were not fully exhaustive, though the search approach was designed to be both effective and efficient in capturing the most relevant literature.

Sifting

Inclusion criteria were:

- engagement of communities in emergency preparedness
- examining synergies between institutions and communities
- looking at any phase of emergency preparedness: anticipation, response and/or recovery
- published from 2000 to present.

The search and sift process for identifying articles is presented in a PRISMA diagram in Appendix 2.

Studies were excluded for the following reasons:

- did not look at the enablers and barriers of community and institutions working together
- was not specifically looking at emergency preparedness
- was providing non evidence-based advice, rather than looking at perspectives of the community on what enablers and barriers exist in their specific community context.

A global focus was taken, not excluding studies from any countries. Studies were not excluded based on study type.

Selecting relevant articles

From the database search, 581 articles were identified. Following sifting, 20 of these were appraised at full text, of which 17 were eligible for inclusion [6, 21-36].

A further 15 articles were identified through grey literature searching. After full text screening, 13 documents were eligible for inclusion, of which one was a duplicate from the database search, and therefore 12 documents were included in analysis [1, 3, 5, 7, 22, 37-43].

The call for evidence from ECDC generated a further 33 articles. After initial screening, 12 were excluded based on abstracts and two had already been included in the search. Finally six documents were eligible for inclusion [44-49].

This gave a total of 35 documents describing factors influencing community and institution synergies in emergency preparedness.

Step 2: development of a working definition of community

ECDC specified that the definition of 'community' should be recorded for included studies. For those without a clear definition, the implied community was recorded.

This led to a table of definitions which helped to conceptualise community in emergency preparedness (see Appendix 3). Following discussion with ECDC, the most relevant and comprehensive definition of community in the context of emergency preparedness was agreed upon as the working definition used throughout this project. This working definition is described in further detail in Section 3.1.

Step 3: analysis and thematic synthesis

The identified literature was qualitative in nature, because the concepts of enablers and barriers are best explored using qualitative methods such as interviews, surveys and focus groups. Therefore a qualitative framework analysis was used.

We identified a pre-existing framework, focused on barriers and facilitators of community engagement in the public health domain, as a tool for analysing the data gathered in this study [50]. The qualitative framework analysis used a 'best fit' approach, using the framework as a foundation [51]. As the analysis progressed, new themes were added and modifications made to existing themes. This enabled the inclusion of emerging themes relevant to this specific topic (see Figure 1, page 51).

3. Review results

Working definition of 'community'

In total, 35 articles were included in the literature review and all had either a definition of community, or an implied community (see Appendix 3). As the framework used in the analysis was adapted from the National Institute of Health and Care Excellence (NICE), their definition of community was also considered:

'A community is a group of people who have common characteristics or interests. Communities can be defined by: geographical location, race, ethnicity, age, occupation, a shared interest or affinity (such as religion and faith) or other common bonds, such as health need or disadvantage. People who are socially isolated are also considered to be a community group [52].'

This definition was considered slightly limited as it takes a fixed approach to the concept of 'community' rather than thinking of it as dynamic and in a constant state of change. Having discussed the definitions with ECDC, the agreed basis for the definition was the concept of 'whole community'. There were a number of articles that used this as a basis for the concept of community [7, 37 22, 23].

The Federal Emergency Management Agency (FEMA), part of the US Department of Homeland Security, developed the whole community approach in response to the increasing frequency and effects of both natural and manmade emergencies [7]. The concept does not define a community as a fixed entity, but rather a dynamic one that changes and adapts with variations in environmental, social and political factors.

The whole community approach was developed as a process by which the whole multitude of stakeholders, including community residents, community and business leaders, emergency management staff and government workers can understand the needs of their communities together and work out the best methods to make themselves optimally resilient to emergencies. The approach aims to engage the full spectrum of private and public sectors, including the general public, businesses, faith-based organisations and disability groups, with the participation of people from all levels of the engagement process: the general public, local, tribal, state and national governments.

The approach acknowledges that priorities differ within and between communities and therefore the level and content of preparedness will differ. For those already engaged in emergency management, challenges lie in understanding how to work with diverse groups to improve resilience in anticipating, responding and recovering from emergencies [7]. In order to reduce vulnerability to emergencies, communities need to become more resilient. A resilient community is one in which the community as a whole and community members have the resources, capacities and capabilities to recover and bounce back in a way that reduces disruption and encourages growth [43].

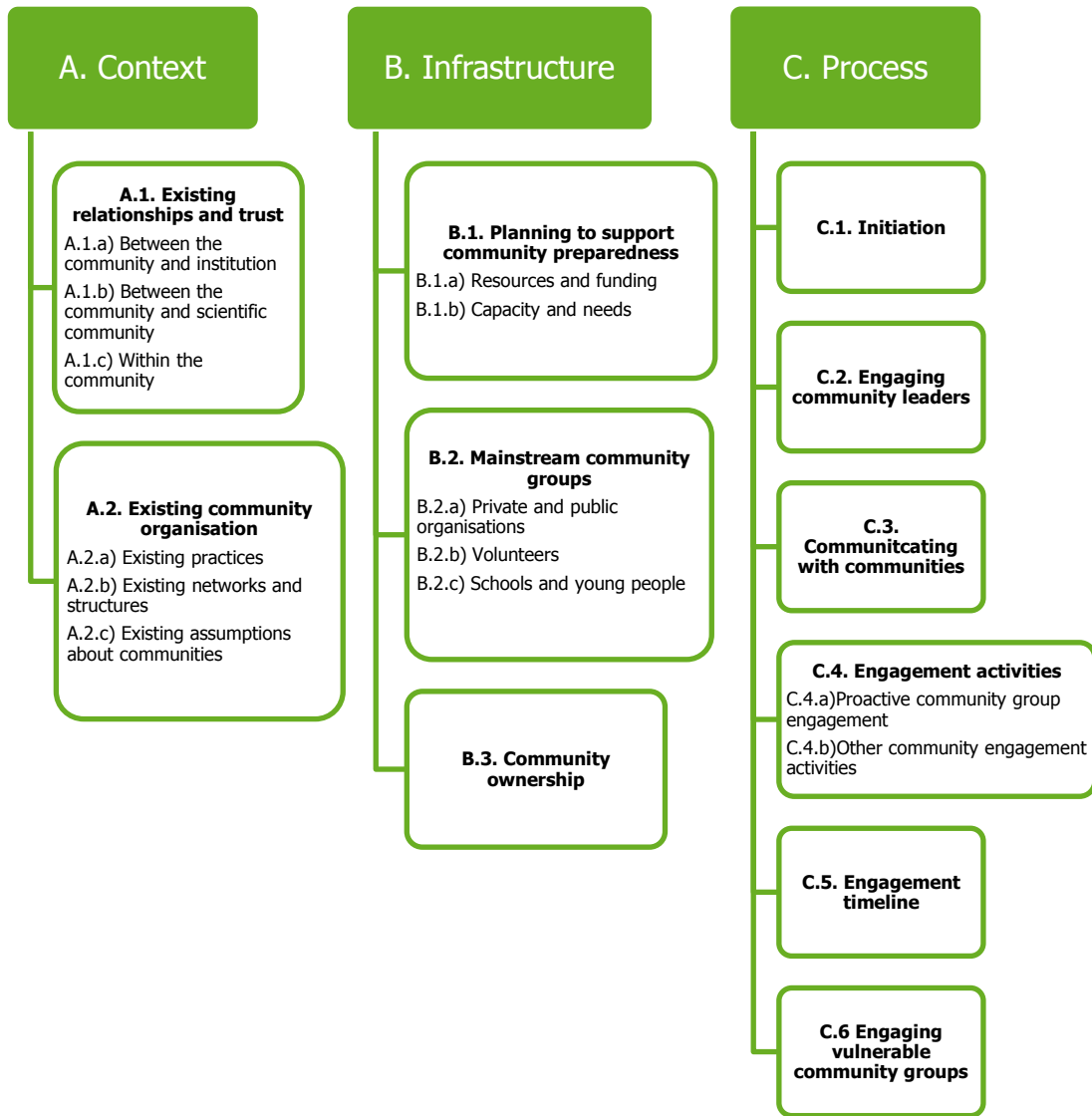
In a review of seven projects carried out using a whole community approach, it emerged that there was little consensus on the best way to go about it in practice, instead multiple best practice recommendations emerged [37]. There was an overall agreement that increasing resilience involves engaging the community, but strategies to do this were found to be broad and provide few points for action. Tools are in the process of being developed to aid this, from a basic checklist to more comprehensive online interactive websites that provide resilience resources [37].

A final aspect of importance in this project was the concept of a 'community of communities' [3]. This considers the community as divided into smaller components, allowing a much more detailed understanding of the community to be developed, by identifying communities of interest such as people in clubs, those with a shared religion, or those with shared hobbies amongst others. This approach may also allow the identification of vulnerable groups in the community, the nature of their vulnerability and therefore some idea of how to engage them [3]. Vulnerability is key risk factor to focus on, defined as 'the characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard' [19]. Susceptibility to the damaging effects of a hazard may be due to pre-existing vulnerabilities, for example for people with disabilities or the elderly, or vulnerabilities may become apparent due to the nature of the hazard, for example asthma suffers to influenza. Institutional emergency preparedness with community engagement is a key way to increase resilience, including for both apparent and non-apparent vulnerable groups, and the whole community's ability to respond.

Adapted framework

In order to discuss barriers and enablers of community and institution synergies in emergency preparedness and the engagement of communities, a framework for engaging communities in emergency preparedness was adapted from a public health community engagement framework of barriers and facilitators (see Appendix 4 for original framework). While the three main themes (context, infrastructure and process) from the original framework remained, the subthemes were adapted or added to be representative of the identified literature.

Figure 1. Adapted framework showing themes and subthemes



Enablers and barriers of communities and institutions working together in emergency preparedness

A. Context

For successful emergency preparedness, there needs to be a supportive culture, either from the start or triggered during the engagement process. The quality of existing relationships and the trust that already exists are important factors in determining success and rapidity of mobilisation. The existing practices, networks and structures - formal and informal - within the whole community will determine how best to engage with all groups from both insiders' and outsiders' perspectives. A supportive, collaborative relationship from the outset that is culturally sensitive and brings a wide range of organisations and people together will generate a more efficient response to emergencies [42].

A.1a. Existing relationships and trust between the community and institutions

Barriers

There may be a perceived lack of community trust in government bodies that is rooted in past injustices or continuing inequalities within the community [28]. Lack of community trust in external agents can prevent productive co-operation in developing emergency preparedness initiatives. Moreover, the presence of external aid agencies within a community may be felt to be a temporary presence that only offers short-term support, therefore relationships tend to be weak between them and the community in question [42]. At times, communities may distrust external institutions, perceiving them to misunderstand them, their 'community makeup', and their needs- which can lead to unsuccessful programmes and further distrust [41].

EXAMPLE: In Nepal after the 2015 earthquakes, a mismatch arose. Humanitarian responders relied on radio broadcasting in their communication efforts. However, when communities were later interviewed, they reported that the outreach and impact of radio in meeting needs was overestimated, particularly in meeting the need for information directly related to personal recovery [41].

Enablers

Contacts through organisations such as existing district councils, the fire service and police force can be a useful way of gaining introductions to community leaders, as relationships may already exist between groups [3]. It is recommended by the New Zealand Ministry of Civil Defence that these relationships are built before engagement initiatives are implemented [3]. Trust is a necessary prerequisite of community engagement and if community leaders lack trust in emergency management staff not to dictate decision-making processes, they may decide to disengage with these representatives [4]. Therefore, although it is a time-consuming process, building trust is crucial.

Strengthening relationships and trust in general between grassroots communities and institutions can be assisted by creating a method for institutions to communicate their resilience priorities, for example addressing the needs of the poor, with the community [40]. Often institutions are unclear as to how to accomplish their aims at the grassroots level, and therefore trust between the community and institutions, and a joint end goal means institutions can then decentralise resources so that communities can tailor resource requirements to their own needs [40].

A.1b. Existing relationships and trust between the community and the scientific community

Barriers

The relationship between the scientific or academic community and the whole community is an important synergy. Where technical experts might focus on the hazard itself, this may be to the detriment of social elements of vulnerability. It is important to also have cultural awareness and know of other insecurities, such as crime, poor health and job insecurity [25]. It is often assumed that scientific knowledge is a signal of competence and that therefore the whole community should have trust in the scientific community. However, communities may perceive scientists and technical experts to view others as ignorant. Therefore scientists may be seen by the community as arrogant and out of touch [25]. When communities reject scientific advice, this reinforces scientists' views of people being irrational without necessarily understanding the reasons behind the decision [25]. This further motivates the scientific community to exclude other community members from decision-making processes. Continuing a cycle of disengagement in this way breeds general community distrust of members of institutions such as scientists and government officials, particularly as insecurities persist [25].

Enablers

Rather than solely focusing on trust relating to natural emergencies, it is useful to focus on how the whole community perceives the trustworthiness of officials with regards to security generally [25]. Therefore, like security measures, emergency preparedness strategies must be in line with community anxieties and perceived risks. Otherwise these strategies will not be perceived as relevant to the target population and undermine the confidence people have in the scientific community and technical staff who work for national institutions [25].

A.1c. Existing relationships and trust within the community

Barriers

One area in which relationships may or may not already exist within the community is between public and private organisations. The two might have similar goals, but be slowed by working individually. This could be remedied by them working together. However, when co-operation and trust between these two types of groups is developed, it is often focused on a single emergency event, is short-lived, ad-hoc in nature and therefore not necessarily easy to replicate in the future [1].

Enablers

One way of understanding a community is for those working in emergency management roles to develop a community profile as part of preparedness plans. The more detailed the profile is, the more useful it will be when engaging with the community. Research by the local emergency management office through networks in the community can help to establish what knowledge gaps about the community exist and to investigate those further [3].

No single person will have knowledge about the entire community, so a number of people should be sought to provide information, including fire and police services and other community representatives and leaders who are willing to share their knowledge [3].

EXAMPLE: In one Californian city, the police noticed a high level of violent crime. They first engaged with the community to obtain information on the frequency and nature of local crime and at the next community meeting, the police brought together a number of government departments including fire, housing authorities and public works. Community and city officials together responded to the community needs and the level of crime decreased [7].

Co-operation between private and public organisations within the community can be made longer-term and sustainable. Where successful co-operation is forged, this provides a resource to tap into when future emergencies occur [1]. One way to create more sustainable relationships might be to unite private and public organisations in decision-making processes prior to the event so that the process and structure is familiar to them, reducing stress when collaboration is required in an emergency and providing points of contacts [1].

A.2a. Practices in existing community organisations

Barriers

Existing practices might pose a threat to community emergency preparedness as certain groups may be left out of emergency plans. Groups of individuals may be left out of community meetings, for example, due to having a long distance to travel for community meetings or being unable to attend due to lack of childcare [7]. Another example of when existing practices leave out certain community members is if existing health and safety preparedness procedures only relate specifically to those directly in the vicinity, such as workers, and not the wider public, such as community members living near a potentially dangerous hazard- such as a power plant. This may put the safety of many in jeopardy [49].

EXAMPLE: In Horlivka, Ukraine, during the overhaul of a plant, there was damage to a liquid ammonia pipe and ammonia gas escaped, hospitalising 22 and killing five. Had the existing health and safety practices been shared among a greater number of people, particularly within the public domain, lives may have been saved and injuries prevented [49].

Enablers

Local collective practices that are already in existence, such as where people seek information from and how decisions are made, need to be supported, and stakeholders empowered by having open discussions of key roles and responsibilities [7].

One way to do this is to incorporate emergency planning discussions into community meetings that are already in place. Such multipurpose meetings help increase participation, particularly when residents are already making travel and other arrangements to attend meetings. Barriers to attending these meetings, such as lack of childcare or travel provision, must be addressed where possible to make sure those who want to play a role are able to [7].

Emergency management staff can integrate themselves into community institutions by participating in non-emergency management community meetings. They can also be available for media outlets to answer questions about emergency management and gain insight from audiences – such as radio listeners during a phone-in - on their priorities for emergency management and gather information about potential local threats [7].

The development of partnerships between emergency management staff, the local community and media organisations will help advance communication. Promoting the regular use of local radio stations, for example, can be an effective way of communicating messages in some contexts [42].

However, emergency management staff should acknowledge that not all community conversations and decisions take place in these community-level forums. Therefore it is important to delve deeper and find out where these discussions occur, such as places of worship or community centres [8]. This can also provide an insight into the sources of information that tend to be trusted and how information is actually exchanged within the community [7].

A.2b. Networks and structures in existing community organisations

Barriers

Existing networks and structures may present a barrier to community and institutions working together in emergency preparedness. There may be inequalities that exist in the community that mean certain people are either left out of networks or do not feel comfortable engaging with them, and have less access to knowledge and resources. For example, the patriarchal social structure in Nepal means that men have access to a wider range of information from various sources compared to women [41].

Moreover, certain existing networks and individuals may have less access to resources and have limited skills for gaining access. For example, gaining and sharing information via the internet may not be suitable for these groups in the community [42]. This limited access to information will then heighten inequalities that already exist.

Another barrier of existing networks and structures is that disaster risk will disproportionately affect vulnerable populations due to their livelihood, physical, economic, and social conditions [1]. This is a barrier that could be tackled by emergency preparedness staff working together to engage these populations to understand their needs and vulnerabilities.

Enablers

Finding out about community organisations and structures will result in a sense of knowing who is important to bring together into networks who share a similar interest in a particular aspect of emergency management [5]. There may be organisations already in existence providing community support; these must be identified and strategies formulated to supplement their work during times of emergency when there may be greater need [7]. Knowledge of community networks can also enable resources to be shared in an emergency situation. For example, if a store has all the supplies a community needs to survive but no power to stay open, resources should be focused on providing a power generator for this store [7].

Efforts to mobilise individual and community groups are more successful when done within an existing network rather than by individuals or outside organisations [1]. This is because people prefer to participate in collective ways through the groups they are already a part of, rather than through groups or networks specifically set up for emergency management [1]. Existing groups can also better anticipate training needs, or anticipate where aid is required and have networks of pre-vetted volunteers [7].

For existing groups working on emergency management to be effective, information must be provided to them ahead of time so that they can protect against, respond to and recover from threats and emergencies. In return, they can provide information about on-the-ground community needs, specific vulnerabilities and status updates to institutions [7].

A.2c. Assumptions about communities in existing community organisations

Barriers

It must be acknowledged that there may be higher priority issues within the community, including immediate issues such as social or healthcare, that may need addressing before community members will consider engaging in emergency preparedness [3].

Enablers

Initiatives for community engagement should acknowledge the embedded culture and value systems within a community and understand that people within a community sometimes have unreasonable expectations of government. This may be particularly prominent in societies where the government has a lot of influence over how communities operate, for example amongst Chinese communities. By empowering communities to be less reliant on the government, for example by effectively using community leaders to reach the community, they will become more self-sufficient and take ownership of the preparedness initiatives [37].

The motivation behind engaging in emergency preparedness is important for both the institution and community members. For example, organisations at the local, national and sub-national government level may need incentivising. This may be through providing evidence that effective preparedness can reduce negative outcomes to an emergency and therefore fewer resources will be taken up in recovery, to increase the resiliency of communities and engage communities [40].

But equally as important, people within the whole community must be motivated to prepare themselves for an emergency by believing that they have an important role to play and creating a collective sense of need. They must believe their role is achievable and valuable, that it will not take up too much time or let anyone down [3].

B. Infrastructure

The infrastructure of a community is important in identifying what the community is able to achieve independently and areas that could be supported by external agencies, including synergistic opportunities for success. The resources and funding within a community, and their capabilities, will determine the extent to which they can own community emergency preparedness initiatives or would benefit from some assistance.

B.1a. Planning to support community preparedness – resources and funding

The resilience of communities to public health emergencies and the resources they have is dependent on their existing social, physical and behavioural wellbeing. Moreover, resilience depends on a community's ability to use these internal resources, and to respond to an emergency. A resilient community will be able to drive and participate in activities in preparing for, responding to and recovering from an emergency [7]. Therefore it is important for people to engage in the process and input their views and experiences into preparedness decision-making [47].

Barriers

A barrier to productive collaboration between an institution and a community is a shortage of funding from local government. There is often a list of priorities for local communities and funding is limited. It is possible that the emergency preparedness agenda becomes another burden for a community when not paired with an increase in funding and resources [45]. International institutions may also prove a barrier or enabler to emergency preparedness within a community [29].

EXAMPLE: The World Health Organisation declared the first influenza pandemic of the 21st century in 2009 with the outbreak of H1N1 [29]. An example of when a grassroots community response was aided by institutional support was when the National Health Service (NHS) in the UK supplied an over-arching, coordinated response. The NHS did this by providing communities with necessary resources to relieve community pressures, such as services to enable the public to self-medicate [53].

Enablers

One of the key aspects of emergency preparedness is the resources required for an effective response. There needs to be funding made available for the population targeted for emergency preparedness improvement [28]. Flexibility in fund allocation can also allow innovative partnerships and programmes to be supported, where the community feel it most worthwhile [6].

EXAMPLE: Local planners for the area of surrounding Mount Etna volcano in Sicily, decided that the most cost-effective measure to protect tourist facilities from lava flow would be to put up barriers, as the tourism industry would contribute to recovery [43]. This demonstrates funding being spent where the community feel it most worthwhile.

Increasing funding for diversity and cultural competency is an important enabler, not only in emergency preparedness, but across all community sectors [6]. This may involve the provision of services such as translated materials, recruiting a diverse range of staff and supporting the use of interpreter services. Other preparedness enablers include training and education through table-top exercises and drills on emergency scenarios, training on cultural and language awareness, and the provision of translated information to certain groups [6].

A top priority for facilitating preparedness is having dedicated people whose role it is to reach out and collaborate with groups within the community, particularly vulnerable groups such as poor minorities who are disproportionately impacted in emergencies [23]. One way to support this is to provide grants to community-based organisations who focus on vulnerable populations, to ensure that emergency planning reflects the interests of those most at risk [23].

Resilient communities should be able to tap into internal resources to manage demands in an emergency. The local authorities should be able to use the civil infrastructure of the local community in order to locate where relief is needed and what resources are required for that specific emergency [1]. These resources can be enacted for emergency preparedness by building trust and utilising existing institutions, as discussed above.

One resource is the provision of space where people can meet, connect and share resources to support preparedness activities as well as creating new partnerships and networks, which enables community preparedness. By working to better the everyday activities within a community, such as creating safer more convenient spaces for people to meet and socialise, local people will be empowered to discuss their needs and engage in decision-making [7].

Constrained resources may present a barrier; however, they may not be as important as initially perceived. The quality of relationships between communities and institutions is often more about trust, access to staff, skills and respect rather than resources [24].

B.1b. Planning to support community preparedness – capacity and needs

Barriers

Emergency response and management workers and local leaders might favour community meetings as an arena to share and gain information and knowledge. However, sectors of the community, including vulnerable groups such as internationally displaced people, might not be represented at these meetings. Awareness of these excluded groups and methods to reach out to these communities are important to engage people in a whole community approach [42].

EXAMPLE: In Nepal the social structure is largely shaped by caste and ethnicity. This is important to factor in when engaging the community, as some groups are marginalised, excluded from community activities and some may not have access to information. In addition, the patriarchal social structure may limit women's ability to contribute and there is a culture of trying to 'fit in', which makes people wary of speaking up. This means that people who have useful perspectives may not feel comfortable in sharing those and therefore the views of several sections of the community are missing [42].

Communities are best viewed as fluid spheres of social interaction, rather than fixed units, particularly in an increasingly globalised world where national and international migration are common [45]. It cannot be guaranteed that engagement with emergency preparedness will be sustained, particularly among groups who are highly mobile, such as students or migrants.

Unfortunately, institutions do not always recognise the capacities of communities from the outset. In the Philippines, for example, the resilience and resources within families outweigh those provided by the government. Were these people to be engaged appropriately, these resources could be used for emergency preparedness [45]. However, if not engaged, individuals may be reluctant to invest their resources in government facilitated community projects, preferring to invest their resources in projects closer to home [45].

EXAMPLE: In New Zealand, to date, Māori resources and cultural strengths have not been integrated into emergency preparedness at the national level. Following the quick response of the Māori community to the series of Christchurch earthquakes from 2010, due to their own successful internal practices, there has been increased engagement between tribes and local and national government. Since the earthquakes, the emergency management infrastructure has been improved by promoting Māori participation in emergency preparedness and planning [21].

Enablers

Recognising community capacity and needs should come from the community itself. The community therefore needs to be engaged in all aspects of the emergency management process, such as identifying and sharing resources, identifying local leaders who can influence community members and developing or adapting existing programmes to prevent, respond to and recover from threats and hazards [7].

In order to better identify where capacities are already available within communities, 'mapping' is an effective tool [22]. Mapping can be carried out to identify which hazards may affect the whole community, to support planning and prioritisation, but also those which may only affect certain groups of people vulnerable to the hazard [28]. Examining the relationship between the whole population and the identified hazards, also incorporating the responsibilities of various sectors such as faith-based, community-based and government who own the local resources, contributes to resilience planning [22]. This mapping enables a richer understanding of community capacity by institutions, increases awareness of community capacity amongst community members and demonstrates engagement, all of which contribute to improved preparedness and emergency response resilience.

One way to go about mapping is to find out as much as possible about the situation of a community by generating a community knowledge inventory, and getting members of the community to record all the knowledge of current resources and capabilities. The initial use is for engaging the community and raising awareness; during the emergency, it is used for directing full use of all resources [3]. As the engagement process moves forward, surveys to find out attitudes and beliefs of the community as a marker of engagement can be used, but these must be representative of all groups. Scenario testing is a way to really involve the community in coming up with their own solutions to proposed problems facing their community.

B.2a. Mainstream groups – private and public organisations

Barriers

In many countries healthcare workers will work in the public and private sector. This can cause issues if information or resources are only provided to the public sector [11]. The Ebola crisis highlighted how useful such collaboration could have been, as the response involved healthcare workers from private companies, including pharmacies, traditional healers and international organisations working together to tackle the outbreak [11]. Inadequate communication between public and private organisations created problems in responding to the outbreak, for example non-public sector healthcare workers not informing government officials of the extent and nature of the outbreak. The effective communication of information might have prevented the initial cross-border transmission [11].

Enablers

While much previous work on emergency preparedness is based on households and public organisations, the private sector can positively contribute to community engagement in preparedness. There is a growing realisation that the public sector cannot handle the burden and cost of emergencies alone [1]. The public sector includes the fire service, police department, council workers and some healthcare workers, all vital stakeholders in emergency preparedness. However, the private sector and businesses often own or operate critical infrastructures such as telecommunications and transportation. They also have a responsibility to their employees to protect them, follow safety laws and return to business as quickly as possible following an emergency. Therefore co-operation between private and public organisations is necessary to co-ordinate response [1].

Community recovery benefits the private sector by enabling them to return to business much more quickly and contributing to community recovery is part of their duty to protect employees. The private sector must therefore also be engaged in the preparedness process [1].

B.2b. Mainstream groups – volunteers

Barriers

Poorly-trained or culturally-insensitive volunteers can lead to mistrust towards public health institutions. If regular contact is not maintained by public health institutions to local volunteer groups, they will lose touch with actions that are taking place and initiatives that are starting. This may lead to replication in actions or a certain area of priority, such as reaching out to vulnerable groups, being missed [7].

Enablers

A specific group that may provide additional support in the emergency anticipation, response and recovery phases is volunteers. Volunteer programmes allow people to participate in ways to make their families, homes and communities safer. Emergency management agencies should look to channel volunteer potential as a capacity of community preparedness. Additionally, volunteers may join up racial and class divides in their joint ultimate goal of community resilience [1]. Innovative voluntary programmes should be acknowledged and rewarded, as these provide a unique set of skills and resources that can be used to both gain and provide information and distribute resources to the groups most in need [1]. Organised volunteers who are vetted and organised by non-governmental organisations (NGOs) also ensure that the volunteers engaged in this process are less likely to become a burden to the emergency response.

B.2c. Mainstream groups – schools and young people

Co-operation between schools (as institutions) and families (as the community) has the potential to be a useful arena to engage students, their families and the wider community [1].

Barriers

School staff may believe that families themselves could be a barrier to an effective response during an emergency. For example, there is a concern that a family will be directly contacted by their child or relative to come and collect them from school. This could undermine response by potentially leaving students unaccounted for in official records and leading to resources being diverted towards locating students who are not in danger. Families are generally keen to better prepare themselves, however, a major barrier is that there are few training opportunities for them to do this [36]. Families may feel that their children are better prepared than them, having done drills at school, highlighting the value of such training for the whole community [36].

Enablers

For family members, such as parents who work during the day, schools could improve engagement and attendance by providing meetings at varying times of the day. Some parents reported that sending flyers home with children may not be an effective way of communicating, however putting notices up around the school and in the entrance hall may be [36]. Rather than all members individually contacting the school out of concern for their child's safety and blocking telephone lines, family members could be trained as leaders who cascade information about an on-going emergency down to other parents, who in turn cascade it to others, creating a communication 'tree' that is not centred on the school as sole provider of information [36].

Schools are a useful place to engage community members, however they may also be the site of a disaster, for example in 2004 when terrorists took over an elementary school in Russia killing over 300 staff and students [36]. Although rare, it is important that the school manages to handle the immediate disaster as well as reuniting parents and children in a safe manner [36].

B.3. Community ownership

The primary function of community-based emergency preparedness is to mobilise and motivate community members to engage in emergency preparedness, including public health emergency preparedness in the long-term [45]. A sense of ownership is a key component of ensuring effective community engagement in preparedness planning. When thinking about preparedness programmes, communities should be leading – rather than following – in identifying priorities, organising support, initiating programmes and evaluating these initiatives. Communities who lead will have an incentive to make sure action and involvement is sustained [7].

Barriers

A problem with an institution-based initiative is that it may not include the perspectives of the local community, they may not be able to stray too far from a centralised approach and community issues may be thought too political to consider in preparedness strategies [45].

However, while decentralising resources can give communities independence [1], political support and experience is additionally needed to make decisions with the best outcomes [40]. This is a potential barrier to community independence and ownership from the outset.

Joint decision-making is necessary in order to allow the communities to take ownership of preparedness activities; however there is a need for transparency in preparedness decision-making. National organisational representatives, such as from national emergency management organisations or the central government, may assume they know what community partners, such as the fire service or police, are capable of and may overestimate these capabilities on a specific task, resulting in dissatisfaction when they fall short [24]. On the other hand, certain groups might not be engaged as fully as they could be or their full capabilities tapped into, for example they may be able to provide greater support than the current set-up, but feel unable to if they see institutions taking the lead [24].

EXAMPLE: In the USA, one organisation served a linguistically and culturally isolated minority group within its local area. They had primarily been engaged to disseminate information to this group. However, they were willing and capable of doing far more. They felt they were not equal partners with the health departments and believed they could provide more, such as volunteer support, and make initiatives culturally relevant and tailored to the group rather than simply directly translating messages [24]. If they were included in health department meetings and decision-making, they would be able to take ownership of such initiatives.

Enablers

The decentralised nature of local social networks means response can be quicker. Therefore emergency management should be filtered into the activities of existing familiar networks [1].

To sustain community engagement, there needs to be a shared motivation within the community for reaching goals and a sense of ownership, as well as well-delivered educational and training inputs in accordance with the objectives of the project and the needs of the community [1].

In order for communities to be empowered to take the lead, they need to be able to independently sustain their initiatives. In practice, this self-reliance often requires enhancing capacity through institutional support to enable access to and taking control of funds held by government systems [45]. Institutions can ensure that by working with communities and engaging in joint decision-making, they can pass funds over and allow communities to manage them.

Initially community members may be involved in, but not leading, the design and development of programmes. The ultimate goal should be for communities to take control of the communication of preparedness plans. To do so effectively, communities require training to develop and use local initiatives and opportunities [42]. This gives a sense of community ownership, by making plans that are tailored for them and by them.

EXAMPLE: In Washington State, USA, responsibility for building relationships and taking the lead in emergency preparedness has been taken on by the Medical Reserve Corps. They use times of peace to go into the community and develop the cultural competence of volunteers. They let the community they work with suggest the methods used so that volunteers are more engaged with the process and likely to interact. Through this, stronger partnerships are developing, trust is being built and networks established so that in times of emergency, people are alerted more quickly and communication is improved [44].

Local volunteer groups quickly form and there is a notion of a post-emergency 'utopia', in which people start to develop wishful thinking and act in line with norms of the community [35]. This mood facilitates the development of relationships between people and encourages formation of local volunteer rescue groups [35]. Professional responders who come from external agencies should recruit from within the communities they are serving to exploit communities' capacities, rather than viewing communities as helpless [35]. Appropriate leadership from within the community that meets community needs will be more effective than outsider command.

C. Process

A flexible approach to community preparedness must be taken as communities are dynamic, complex entities and therefore no uniform approach will fit every context. Approaches should be adaptable to a diversity of communities and environments [1].

C.1. Initiation

The motivation for engagement often comes from the realisation of the need for preparedness that arises in the wake of an emergency. Through experience of an emergency, decision-makers become more willing to engage in activities. They become motivated by seeing the impact of emergencies on a community and wish to prevent a similar situation in the future [23].

Barriers

A barrier to communities negotiating on their terms is a lack of, or too complex, formal processes for reaching out to government organisations, which can limit the ability of communities to initiate relationships with government organisations [40].

Enablers

Despite the barriers, communities often do initiate partnerships with institutions such as national government or NGOs and in these cases often seek the support of institutional partners to help strengthen and increase the accessibility of their initiatives. These proactive communities are more effective than passive communities when it comes to emergency preparedness [40].

Government ministries and departments, NGOs and other national and international institutions may also initiate the emergency management process. Where the initiative comes from is not the important factor, what matters is that the community participates in studying their emergency risks, action planning and making decisions on implementing emergency preparedness initiatives [1].

C.2. Engaging community leaders

Barriers

There may be a culture clash between member of institutions, who may be more comfortable with formalised relationships and contracts to formalise co-operation, and leaders of community organisations, who may want to engage through interpersonal relationships initially [24]. Community organisations may want to remain independent from government organisations or believe that a formal tie is not necessary to achieve these goals [24].

Enablers

Institutions should nurture relationships with community-based organisations, faith-based organisations, community leaders and diverse subpopulations. This needs to be seen by the community as a long term endeavour by institutions in order to gain community trust. Efforts by institutions to sustain these relationships need to be seen as constant, consistent and regular [23].

Relationships can be maintained with community leaders through regular activities and engaging them in non-emergency situations to solve problems, helping to build trust. As trust is built, community leaders can provide emergency managers with an insight into the needs and capacities of the community and be fully involved in the development of programmes to develop resiliency [8]. As described previously, a resilient community is one which is fully involved in preparedness activities in the anticipation, response and recovery to an emergency.

Leaders may not be obvious from the outset but should be representative of their group within the community. One approach to joining up leaders within a community is to have a coordinating group [7]. This group promotes joint planning for emergency preparedness, mutual aid and resource sharing, information sharing and joint education and training [7]. The group must be big enough so that all stakeholder interests are represented. Members should have the authority and resources to participate, have a wide range of expertise about the community, be willing to set aside biases during decision making and work cooperatively. This process can help to decrease obstructions to preparedness activities by certain groups of society as they now feel their views are being incorporated into plans [7].

EXAMPLE: The 2009 H1N1 influenza pandemic caused far reaching processes of self-reflection and changes in local health departments' practices in the USA. To get out vital information and improve the access of vaccines to a range of community groups, health agencies worked with local authorities to plan culturally appropriate information and secure familiar places for vaccination clinics to take place [23]. Following the pandemic, health agencies reflected that community engagement is central to effective preparedness actions [23].

C.3. Communicating with the community

Barriers

Where communication with local communities by institutions such as national authorities or NGOs is not systematic (for example not consistent in terms of timings and type of media or lacking planning), there is a risk that not all voices are heard and that communications may not reach everyone they should. Moreover, information that is collected from surveys, focus groups and interviews is sometimes stored, but not analysed or shared, due to time or capacity limitations. A feedback loop is important to ensure that the community feels they have been listened to and can see a link between what they suggested and the plan that emerges. This can lead to important perspectives being ignored and a break-down in community trust if their input is not seen as meaningful [42].

Communication needs to be tailored to the demographics and cultural characteristics of groups within the community to ensure it reaches the whole community. For example, the internet provides a powerful platform for NGOs and other institutions to gather and share information. However, this might not be an effective mode of communication for everyone, as some or all community members may not have the technical skills to access the information, and either have no or limited internet access [42].

During an emergency, there might be an issue with the accuracy of the information being disseminated. Emergency response workers may not have time to verify and/or respond to information that might be rumour-based. Therefore inaccurate news might spread, leading to inappropriate responses or unnecessary panic [42].

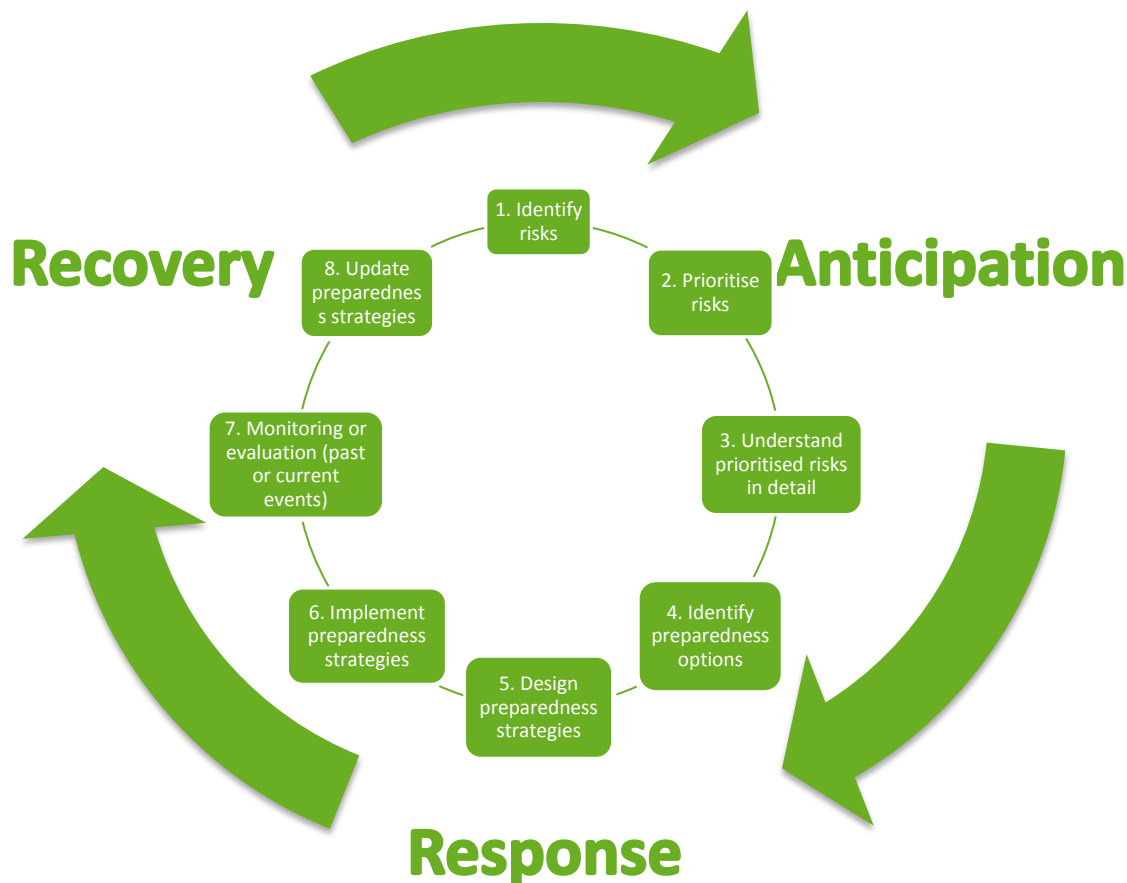
Moreover, during emergencies such as earthquakes, the technical infrastructure for communication – such as telephone lines and electricity - may not work.

EXAMPLE: In the 2015 Nepal earthquakes mobile phone coverage was lost for a few hours, which affected communication. However, there were more severe communication losses to rural areas, resulting in them receiving very limited information and updates. People required this information to confirm or dispel rumours from less formal sources such as family and neighbours [41].

Enablers

The communication of information, knowledge, advice and preparedness techniques will vary depending on the community context and infrastructure, as well as the stage in the preparedness cycle. The preparedness cycle involves three main stages: anticipation, response and recovery (Figure 2).¹

Figure 2. The emergency preparedness process [8]



To ensure communication happens effectively and reaches all community groups, partnerships must be made in a timely manner and represent the full spectrum within the community. Members of each partnership should be informed of various measures being taken, such as risk communication to the public, in order to reduce public panic or mistrust, and to ensure a culturally appropriate format [29].

The information must be coherent and consistent so that information is perceived as reliable and communities trust this information provision [42].

This information should be disseminated through mass media where available and then be targeted at other more specific modes to reach the groups who may not have access to mass media and modern social digital platform means. The level of trust local people place in particular sources of information is also important to consider as this may affect their trust in the information communicated – either positively or negatively [42]. The communication process should be two-way and methods of communication should enable feedback from all groups within the community so that all local knowledge comes together and is shared [42].

EXAMPLE: In South Sudan radio programmes are very popular. BBC Media Action took advantage of this and created a radio drama called 'Life in Lulu' about a fictional village in South Sudan which explored the outcomes of good or bad decisions made by villagers in the context of health, particularly relating to women and children [42].

Although radio is often the most common medium for communicating information during emergencies, the increased use of social media might mean this changes in the future, particularly in more urban or developed areas [33]. Social media has become a very powerful tool, which can be used in emergency anticipation, response and recovery and offers a two way method of exchanging of information. This is already being used in many communities and can be a good way of reaching out to people in anticipation exercises, during the response phase, or when recovering from an emergency [7]. Younger people may be more likely to use the internet or social media and therefore might be useful in playing a more active role in relaying information to their communities [41]. However, the internet may not be available during an emergency, therefore multiple methods of communication will still need to be used.

A multi-method approach to sending emergency messages - for example, television, radio and warning sirens- is required, as not all households will have access to all forms of media. This should account for community and individual preferences, whilst pre-empting technical challenges or outages [33].

C.4. Engagement activities

Whether initiatives are focused on a specific type of emergency or general preparedness is another consideration. Thinking about initiatives in general, programmes need to be linguistically and culturally appropriate. Initiatives will of course need to be tailored for the specific emergency, for example in an influenza outbreak, people will need to be informed on how to prepare for influenza-specific responses, such as school closures, public gatherings and good hygiene [46]. However in all types of threats there are synergies in planning and preparedness.

C.4a. Proactive community group engagement

Barriers

Bringing together people whose roles involve aspects of emergency preparedness may be a good way to improve the knowledge base. However, as information and knowledge may be held by certain individuals and not shared, this method may not be a sustainable way of disseminating all relevant information to the whole community [5].

Enablers

Identifying community groups to reach out to is an important first step to engaging the whole community. These may include sports clubs, faith organisations, disability communities and scout troops among others. Information about the community capabilities, capacities and needs can be shared in these arenas [7].

While the community is viewed as a whole, there are also communities within the whole community and synergy between these groups is a vital part of being effective in meeting an end goal. Community groups may use different methods and language, making it difficult to see that they are aiming towards the same goal. To form a more holistic, whole community approach, one method could be to run workshops and facilitated exercises to bring groups together. This way they can work towards a solution and examine ways of intervening, from the individual level up to the policy level and where it would be useful to develop partnerships [44].

Another group to engage in the process are people with roles related to, but not specifically limited to, emergency preparedness. Despite having a broader agenda, public health departments are required to play a role in responding to emergencies, alongside police, fire and emergency medical services. Through increasing interdisciplinary collaboration and co-operation in emergency preparedness, public health organisations can help in preparedness by strengthening community resilience to a wide range of hazards, including extreme weather events like droughts, floods and landslides [1]. One way that this can be achieved is through 'Communities of Practice'. These are communities created by groups of people whose daily work includes dimensions of emergency management, in order to deepen knowledge and expertise on a topic [5]. In order for these communities of practice to be effective, a leader who knows the right people and brings them together in a cohesive way is essential [5]. These formal forums should also include lay members of the community in order to gain the full range of perspectives.

C.4b. Other community engagement activities

Barriers

A barrier, particularly at the household level, to preparedness is denial. People often believe that an emergency will not happen to their family or prefer not to think about it happening to their family [33]. Preparedness plans need to address and pre-empt this in an appropriate way that will not lead to unnecessary panic.

Enablers

One way to effectively engage communities is by institutions recognising the value of communities as active participants in their own engagement. This can be achieved by assigning formal roles to members of the community at a grassroots level [40].

In order to facilitate participation, their engagement should be made logical, simple and convenient. Methods of engagement could be through websites, in-person training or presentations, written materials and by holding meetings with community groups such as at churches and community centres [37].

Ways in which communities can get engaged in the emergency preparedness process include resilience-building activities, such as business continuity-related exercises to make sure they can be activated and sustained through emergencies. Moreover, activities not focused on emergency preparedness but aiming to improve social capital, such as community fairs and community sports events, will bring together community members, increasing resilience.

Programmes and policies within the local community can be served by an on-going collaboration and two-way discussion with the government.

EXAMPLE: In Uganda, the Slum Women's Initiative for Development collaborated with the National Agricultural Advisory Services (NAADS) for livelihood support. The two organisations came together at the farmers' meeting where people from the government suggested new farming techniques to enhance local productivity. However, the advice was aimed more at commercial farms than small scale producers and did not match the resilience priorities of the farmers. To make sure the needs of the community were being met, regular planning meetings were held in the village with both groups to target the government resources in a more appropriate way for the community in question [40].

Inviting the community to an 'open house' at emergency operations centres means that they can see what goes on there, enhancing relationships and building trust. Finding 'local heroes' and opinion leaders, listening to what they are interested or involved in can be used to tailor emergency management activities to meet the interests of the community and increase engagement. The open house can help in finding out about the challenges that the community is currently facing. Exploring how emergency management operations centres might help them address these challenges can reassure community members, increasing trust that institutions have communities' needs at heart [7].

Simple and inexpensive preparedness techniques work best as the accessibility to these tends to be greater and there is an increased chance of success. Partnering with the local health worker community is a simple strategy that works well and there is often a willingness of these workers to engage in community preparedness and facilitate capacity for preparedness [28].

Moreover, it is important to evaluate resilience building initiatives in order to see how, for example, traditional household preparedness activities vary from whole community engagement and broader partnerships. The views of both the community and the institutions need to be acknowledged in this evaluation in order to progress successfully with future initiatives [22].

C.5. Engagement timeline

Barriers

One barrier that may emerge throughout the engagement timeline is that communication methods that are effective during the anticipation phase are not effective in the response phase. During the anticipation phase, a lack of communication may result in poor preparedness and chaos when an emergency does occur, as community members are most likely first responders to an emergency [1]. During the response phase, effective communication during the emergency should be the government's responsibility and their failure to do so may lead to community members being uninformed and potentially result in a state of panic [1].

Enablers

The preparedness effort is a continuous process as more and more people become aware, engaged or are invited to participate by people already involved [3]. Emergency preparedness should therefore be revised and evaluated to keep up momentum. Ultimate success depends on citizen engagement as well as local and national government engagement from the initiation process [1].

Being clear on what is expected of people and their role is essential. At the start of the engagement process, as many people as possible need to be recruited and low-level initiatives should take place such as mass media campaigns and information meetings. These should aim to inform the public of the issues and suggest solutions to the problem. Momentum for the project must be gained at the start. As the process progresses, needs change and therefore the method of engagement should also change. Increasing levels of engagement will result in more consultation and two-way communication, with community members providing feedback - for example through surveys, focus groups or meetings. Fewer people are likely to be involved at this stage and ideally these will be representative of the whole community and be able to report back to their networks [3].

In order to broadcast messages to a large number of people, newspaper articles and online news media can be suitable. Emergency management offices could set up open-days to allow community members to learn about the work they do and the importance of preparedness, promoting the message. Public meetings can either be for information dissemination only or may have a consultative approach, gaining feedback from the public. The format of these engagements would depend on the stage of engagement [3].

Effective communication during the anticipation phase differs to effective communication in the response phase. During anticipation, education and training should target the public and the engagement of community members is vital because, as previously mentioned, they will be the potential first responders to an emergency. Local businesses should be also educated in their role in accident prevention and emergency response. Effective communication during the emergency should fall on the government authorities, who should provide accurate information to whole community [1].

C.6. Engaging vulnerable community groups

Disaster risk is not shared equally among a population and there are people who will be more vulnerable and more at risk of not coping with a hazard. When considering people with a disability, a European action plan suggests that their diverse needs and experiences must be at the heart of decision-making and that they must be included in the specific area of emergency management [1]. Many of the areas that can be addressed to reduce risk are outside the expertise of emergency preparedness staff. These factors include livelihood, health, physical, cultural, economic and social conditions. Preventing adverse outcomes therefore needs a whole community effort, to incorporate multiple sectors [44]. The nature of the group's vulnerability will play a role in how and in what way they should be engaged in emergency preparedness and in finding solutions to their vulnerability [3]

EXAMPLE: In the Philippines, despite high levels of functional cohesion, local communities are heterogeneous and include migrants, landless labourers, women and indigenous people. Initiatives tend to be 'consensus based' and reinforce already powerful local interests. This may be to the disadvantage of vulnerable community members whose interests and needs may differ and be less likely to be voiced in participatory processes [45].

C.6a. Linguistically isolated populations and cultural difference

Barriers

A group who may be left out of emergency preparedness planning is linguistically isolated populations. The differences in cultures of these populations may result in poor preparedness as well as being left out of communication. During the response to a disaster, language barriers are magnified as linguistically isolated populations cannot reach out to neighbours to gain help [32]. For some communities, emergencies and disasters are a taboo subject and it is the cultural belief that disasters cannot be predicted and are in the hands of God [30]. Therefore it may be hard to engage these communities in preparedness.

An example where it becomes clear that disaster preparedness is lacking is when considering cultures within communities. For example, some groups are more tightly controlled by the government and have a greater reliance on the government to tell them exactly what to do and be responsible for their safety. This is in contrast to communities who might have little government trust and be more likely to believe they are being singled out to receive less resources and assistance [32].

EXAMPLE: In Nepal, Nepali is the official language and therefore most written information is available only in Nepali. Some ethnic groups in Nepal are not able to understand Nepali and therefore language becomes a barrier to gaining information and knowledge-sharing for emergency preparedness [41].

Linguistically isolated populations may not be aware of the need to be prepared and not have adequate plans in place for emergencies. Even if they are aware of the need, they may also be socioeconomically disadvantaged or otherwise marginalised, and therefore not have the resources or financial ability to be prepared nor the coordinated knowledge of how to engage [32].

Enablers

In order to rectify language barrier issues, mainstream television could broadcast alerts that contain visual images to increase awareness of any changes to the environment. However, word of mouth tends to be a more useful way of reaching these communities, as reported by them, with visual information as a reinforce [32]. In these cases, friends are a very important source of information and knowledge - if they think it important to take action, others are likely to follow suit. Communication approaches are therefore recommended to include a peer-led component to reach out to all groups [32].

Another way of doing this could be to involve medical interpreters who can target small organisations and can talk with community leaders. A greater understanding of their contribution can mobilise a linguistic force to support first responders during emergencies. Disaster preparedness training for interpreters and bilingual staff could help this process [30].

In order to engage effectively with communities, emergency preparedness staff should be educated on the diversity of the community and cultural competency exercises should be undertaken, such as building a relationship with a multi-lingual community member to make outreach more effective [7]. In order to overcome cultural barriers, a whole community approach can be effective in learning- from the communities themselves- about the cultural practices from a closer position, rather than a distant institutional perspective [8].

C.6b. Patients receiving home-based care and their health care staff

Barriers

Another vulnerable group is patients who are receiving home-based care. Implementing emergency preparedness recommendations by healthcare providers to their patients is difficult when they have cognitive and/or physical impairments. Patients may not feel a need to put a disaster kit together and may have limited financial resources to do so. Healthcare providers are not given training on how to prepare their patients; such training could help them improve preparedness amongst their patients.

Enablers

A formal initial assessment to evaluate how prepared patients are, such as whether they have access to non-perishable food and clean water and a radio for information, could be the first step in improving their preparedness to emergencies [26].

Tourists

Another example of a group that needs considering is temporary visitors to an area, who will not have relationships that enable them to connect with preparedness plans and activities.

EXAMPLE: In Iceland, where a volcanic eruption occurs every three to four years [34], a study found that tourists feel they need an awareness of the warning systems and emergency responses to volcanic risk. Findings also showed that tourists may be keen to receive information; however, they may not have this knowledge provided for them when visiting the area. Professionals working in tourism roles suggest hazard information and emergency response information should be provided for tourists visiting areas of high risk. Tourism professionals should receive special training in the early warning systems and how to disseminate information on emergency response procedures to tourists [34].

C.6c. Communities with sensory impairment

Barriers

When attempting to engage people with sensory impairments, the use of technology such as the 'virtual' presence of an interpreter takes away human interaction and therefore may be less engaging [48].

Enablers

First responders in emergencies need to know about people with sensory impairments, for example deaf or blind people, to remove misconception. This might include basic information, such as the benefits of using signed language, the obstacles that deaf or blind people face, such as the communication barriers and the lack of guidelines accessible to deaf or blind people. One way to make sure human interaction is still part of the engagement process may be to include deaf or blind people in roles within emergency preparedness training. Safe and inclusive future practices will use the whole community approach to ensure all groups are taken into consideration [48].

4. Discussion

Our review first articulated a working definition of 'community' to be used throughout the analysis. We found that the 'whole community' approach was the most inclusive definition of community as it included the full spectrum of individual community members as well as community organisations. It was also defined as more of a process than a fixed entity; a dynamic concept that changes with shifting environmental, socio-economic and political factors.

This definition was thought most appropriate as it also allowed for the fact that emergency preparedness will be context-dependent. The structures, networks, resources and current practices of a community at a specific time will result in specific needs for emergency anticipation, response and recovery. Defining 'community' in such a way emphasises an inclusive bottom-up passing of information, where no individuals or community members are left out. It allows for a dialogue and understanding of needs and capabilities that emerge from the 'whole community' rather than just key or powerful members. This definition is sensitive to the shifting intersections of inequalities and vulnerabilities, by defining community in a fluid manner.

The original framework used in the analysis was based on public health community engagement. When considering how this related to emergency preparedness, the three main themes remained; context, infrastructure and process. Subthemes were added and changed to best represent the identified literature, so the final framework (Figure 1) was an adapted version of the original.

Context

When considering the community context, existing relationships are important, including within the community itself, between the community and institutions and between the community and scientific experts. Mistrust of institutions is a deep-seated barrier that can have historic roots and be difficult to change. By creating ways for institutions to communicate their emergency preparedness objectives and to reach out to community leaders, trust can be built and relationships formed, which can be used as levers for action.

Including emergency planning discussions in existing community meetings can help increase participation and feedback and provide an opportunity for institution members to answer questions from the community. However, the real community conversations may take place away from obvious locations therefore emergency management staff may need to delve deeper to find out where these conversations and decisions take place, such as places of worship.

Moreover, knowing who is important to engage in emergency preparedness from existing community networks and structures will aid preparedness. Existing groups who already work together are likely to be more successful than groups created for the sole purpose of emergency preparedness, due to layers of trust and belief.

Infrastructure

Where possible, communities should tap into their internal resources when preparing for, responding to and recovering from emergencies. However, communities may need assistance in locating resources, which institutions can support them with. Additional funding from institutions may be required, particularly in order to increase diversity and cultural competency to reach out to groups who may be more vulnerable in an emergency.

Institutions may not always recognise the existing capabilities of communities and that it might be more efficient to decentralise resources to capable communities who understand where the current capabilities and needs are. Alternatively, institutions should not assume that communities will not benefit from some degree of support.

Mainstream groups, including private and public organisations, volunteers and schools might be able to initiate, promote and share emergency preparedness activities. All members within the community have a role to play in both their own personal emergency preparedness as well as that of the groups they associate with.

Process

In order to create sustainable community emergency preparedness, the community should take ownership of initiatives. Institution-run actions may not incorporate the perspective of the community, so any decisions to start with should be, at the very least, made jointly. A decentralised approach - where communities take responsibility for activities that feed into local plans - will mean local initiatives and opportunities can be taken advantage of, resulting in quicker and more efficient action.

It was found that what matters most is not who initiates engagement in emergency preparedness - communities or institutions - but that the community is involved in all stages. Emergency management staff should look to foster relationships with formal and informal leaders and together decide on initiatives that are in line with the priorities

of all groups. These relationships can be maintained by regular activities and engaging them in decision-making processes prior to emergency planning. Coordination of the formal and informal leaders will help streamline institution and community synergies.

There must be multiple communication methods depending on the groups within the community in order to both disseminate information and gain feedback from the whole community. Coherence and consistency of information affects the reliability of messages and the trust that community members place in information from these sources in the future. Where available, mass media should be utilised with supplementary methods to target specific groups.

Finally, engaging vulnerable groups within the community was a theme that repeatedly emerged in the literature. There are many groups within a community that may be more vulnerable to emergencies for a variety of reasons. Identified groups in the synthesis were: linguistically or culturally isolated populations, patients receiving home-based care, tourists and the deaf community. Finding appropriate ways to reach out and engage each of these communities must be considered when preparedness initiatives are being developed.

Strengths

The strengths of this review include our inclusive definition of community, our inclusion of all steps of the emergency preparedness cycle, our inclusion of studies from around the globe and the inclusion of all types of institution. The review included information from a wide variety of sources. Moreover, the adaptation of the public health barriers and enablers framework ensured the themes were relevant to the literature identified and demonstrated enablers and barriers specific to the community engagement in emergency preparedness.

The qualitative nature of the literature located and included in the review meant that an in-depth view into the perspectives and experiences of people within different contexts was gained from a variety of literature sources, including both community and institution perspectives.

Limitations

The literature search was not designed to be fully comprehensive, but was designed to ensure that the most relevant literature was retrieved and used supplementary methods to identify additional references. This could mean that certain enablers and barriers of effective community and institutional emergency preparedness cooperation were missed. On the other hand, these enablers and barriers may exist in the real world, but have not been studied or written about in the literature.

For example, although some vulnerable groups were identified, there are many more that may not have been researched. The groups described in this report are indicative of those included in the literature, rather than exhaustive. Future preparedness initiatives should take this into consideration.

Moreover, while some of the enablers and barriers identified may be relevant to multiple contexts, some may be context-dependent. This is particularly of note in this research with regards to the United States of America, where there is a plethora of research and the majority of identified studies came from. The USA has a specific political, socio-economic and environmental landscape and therefore findings may not be generalised to other countries. There were fewer examples from a European context.

The majority of the literature focused on the 'anticipation' phase of the preparedness cycle and there was less literature demonstrating community and institution synergies in emergency preparedness in 'response' and 'recovery' phases, although some literature did look at all three phases.

5. Conclusions

This review has identified a definition of community that encompasses the whole spectrum of people and groups within a community and the dynamic nature of a community, particularly relevant in the context of community engagement in emergency preparedness.

This review acknowledges that the importance of factors differs depending on the context and therefore does not recommend a single best practice to facilitate engagement, but offers some key messages.

Key messages:

- In emergency preparedness, there is often a one way communication system, from institutions to communities. Communication should be two-way, with institutions listening to and acknowledging the needs and capacities of communities.
- Institutions should engage communities before the emergency, in the anticipation phase of the preparedness cycle. They should aim to maintain this relationship throughout the emergency preparedness cycle.
- Enablers and barriers to community preparedness can be identified by undertaking community mapping, whereby all elements of a community are taken into consideration from the perspective of community members. This is an on-going exercise and therefore should be context-specific, depending on the type of threat a community needs to prepare for.
- Members of institutions who initiate community engagement should be culturally competent. They should be aware of how information they are relaying will be received by groups and whether language translations are required.
- Community and institution synergies should be meaningful. This can be achieved by institutions listening to what is important to a community and ensuring that they feel they are being heard.
- Identifying community champions (individuals or organisations) can help centralised activities cascade down to the community-level, improving community preparedness.
- Community engagement should take into account communities within the community. This involves being aware of which groups community members identify themselves as being part of.
- Information regarding emergency preparedness, during the anticipation, response or recovery phase, should be communicated by institutions to community members as accurately, consistently and coherently as possible, dispelling rumours and misinformation.
- Institutions and communities will need to agree upon how to keep preparedness messages fresh and consistent to reduce information fatigue.

The identification of potential enablers and barriers in institutional and community preparedness in the context of them working together is intended to add to the evidence base in this area and help decision-makers identify what might hinder engagement of communities and how to work around this. The adapted framework could be a useful starting point for institutions wishing to engage their communities of interest in emergency preparedness. The end goal is to minimise adverse outcomes in the situation of an emergency through building a more cohesive community and stronger relationships with institutions.

6. Research recommendations

Future publications relating to community and institution synergies in emergency preparedness should have greater focus on 'response' and 'recovery' phases in order to encompass the whole emergency preparedness cycle. Future publications should also examine community and institution synergies in global areas other than the USA, such as Europe, in order for recommendations to be more generalisable.

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Appendix 1. Scopus search strategy

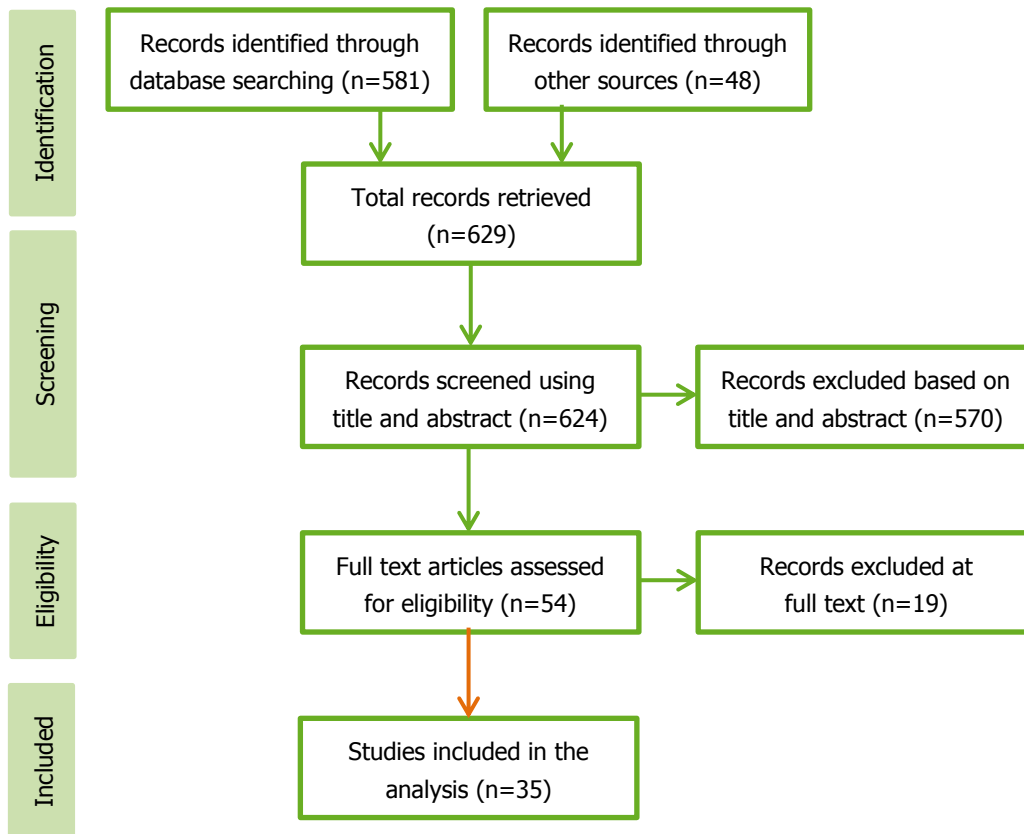
Scopus search strategy run on 25/10/16

```
( TITLE-ABS ( "public health emergency" OR "public health emergencies" OR "emergency response" OR "disaster response" OR "emergency preparedness" OR "disaster preparedness" OR "preparedness planning" ) ) AND ( TITLE-ABS ( collaboration OR partnership OR cooperat* OR "working together" OR "work together" OR combin* OR "joint effort" OR "community" ) ) AND ( TITLE-ABS ( barriers OR enablers OR facilitators OR alliance OR challenges ) ) AND ( LIMIT-TO ( EXACTKEYWORD , "Disaster Planning" ) OR LIMIT-TO ( EXACTKEYWORD , "Emergency Response" ) OR LIMIT-TO ( EXACTKEYWORD , "Organization And Management" ) OR LIMIT-TO ( EXACTKEYWORD , "Disaster Response" ) OR LIMIT-TO ( EXACTKEYWORD , "Disaster Prevention" ) OR LIMIT-TO ( EXACTKEYWORD , "Risk Management" ) OR LIMIT-TO ( EXACTKEYWORD , "Disaster Management" ) OR LIMIT-TO ( EXACTKEYWORD , "Emergency Preparedness" ) OR LIMIT-TO ( EXACTKEYWORD , "Disaster Preparedness" ) ) )
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Focused top-up search run on 24/11/16

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( TITLE-ABS ( "public health emergency" OR "public health emergencies" OR "emergency response" OR "disaster response" OR "emergency preparedness" OR "disaster preparedness" OR "preparedness planning" ) ) AND ( TITLE-ABS ( "community prepare*" ) OR TITLE-ABS ( "community engage*" ) OR TITLE-ABS ( "community participat*" ) )
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Appendix 2. PRISMA diagram



Appendix 3. Definition of community

Source: author (date)	Stage of preparedness cycle	Definition of community
Gamboa-Maldonado et al (2012)	Preparedness and response	Environmental health and emergency preparedness response administrators and their view on how their workforce engages with the local community. (USA)
FEMA (2011)	Preparedness, response, recovery	Whole community: A concept- a means by which residents, emergency management practitioners, organisational and community leaders, and government officials can collectively understand and assess the needs of their respective communities and determine the best ways to organise and strengthen their assets, capacities and interests. It attempts to engage the full capacity of private and non-profit sectors, including businesses, faith-based and disability organisations, and the general public, in conjunction with the participation of local, tribal, state territorial and Federal government partners. This engagement means different things to different groups. (USA)
Linnell (2013)	Preparedness, response, recovery	In conventional emergency management, communities are often viewed in spatial terms, as groups of people living in the same area of close to the same risks. Another dimension of community is the common interest, values, activities and structures. Communities are dynamic and there are communities of place, interest, belief and circumstance which can exist both geographically and virtually. For the purpose of studying approaches to enhance public participation in emergency preparedness and response, a broad conceptualisation of community will be used, which take into account various conceptualisations. It will therefore be defined as a collective of people living in a particular area, or being socially connected through common interests, beliefs and circumstances. Building on this conceptualisation, community approaches refers to ways in which citizens and groups might be included in the management of emergencies and therefore facilitate more effective emergency management. Therefore community approaches attempts to engage the full capacity of the private and non-profit sectors including businesses, faith-based and disability organisations, and there general public. (International)
Dean (2014)	Recovery	Case study- Tablelands Regional Council, North Queensland, Australia. Looking a recovery from a cyclone that hit the region. Residents experience of a project implemented at the community-level, and the experiences of those who are in charge of funding programmes. (Australia)
Forcier Consulting (2015)	Recovery	Crisis-affected communities. Communicating with Disaster Affected Communities (CDAC) network. Focuses on the emergency response workers in South Sudan to the affected populations they serve. (South Sudan)
Sobleson (2015)	Preparedness, response, recovery	Whole community (e.g. residents, emergency management, community leaders and government officials). Seven programmes based on the whole community approach across America- engaging community stakeholders to learn about their programmes. (USA)
Ndlela (2012)	Preparedness	Community of Practice: groups of people who share a concern, a set of problems or a passion about a topic, and who deepen their knowledge and expertise in the area by interacting on an on-going basis. Practice entails a set of frameworks ideas, tools, information, styles, language, stories and documents shared by the community. Group of professionals and other stakeholders in pursuit of a shared learning enterprise, commonly focused on a particular topic. Municipalities in Norway sharing strategic resources. (Norway)
CDAC	Response and recovery	Affected communities: people caught up in conflicts, natural disasters and other crises. Communities affected by the Nepal earthquakes in April and May 2015. The views and experiences. Prior to the study, there was a high level of dissatisfaction amongst people affected by the earthquakes in Nepal- their information needs had largely not been met. (Nepal)

Source: author (date)	Stage of preparedness cycle	Definition of community
GFDRR	Preparedness response and recovery	<p>The term “community” is used as shorthand for community-based organisations (CBOs). CBOs are organised by people who live and work in impoverished rural and urban communities, usually with low, unstable incomes and who suffer food insecurity, inadequate housing infrastructure and basic services and environmental degradation where they live. As a voice for these populations, CBOs tend to represent the most vulnerable to the adverse impacts of climate change and natural hazards.</p> <p>CBOs highlight the role of resident communities in advancing their own sustainable and resilient development. Case studies where community-based organisations are working in partnership with their local or national governments to effectively manager disaster and climate risk in poor communities. (International)</p>
Ministry of Civil Defence and Emergency Management(CDEM)	Preparedness, response, recovery	<p>A definition of community is ‘a social, religious, occupational, or other group sharing common characteristics or interests and perceived or perceiving itself as distinct in some respect from the larger society within which it exists.’</p> <p>When thinking about engagement, it is useful to look at communities as two distinct types:</p> <p>Communities of place: communities, especially in the CDEM context are taken to mean communities of place. That is, a group of people whose commonality is defined by the location they live in. A person’s place of residence is not only where they spend most of their time, but people have strong emotional and financial attachments associated with “home”. As location determines the types of hazards people and their property are exposed to, communities of place play an important part in developing people’s resilience.</p> <p>Communities of interest: a great number of communities are defined not by physical location, but by interest or belief. Communities of interest form around religious and ethnic groupings, sports clubs, hobbies and increasingly, online networks. The workplace can also form a community of interest. Each community of interest has characteristics that makes it distinct from the wider community and therefore distinguishes it as a separate group. There may also be vulnerabilities or resilience associated with a community of interest. These characteristics will influence the way a community can be engaged.</p> <p>A community of communities: using concepts of communities of place and communities of interest it is possible to divide a larger community up into its smaller components. Identifying the communities of interest that exist around hobbies, sports clubs, ethnicity or religion allows for a much more detailed understanding of the community to be developed. This includes the identification of vulnerable groups in the community, and the nature of their vulnerability. (New Zealand)</p>
Andrulis et al (2011)	Preparedness and response	Community: racially/ethnically diverse communities. Initiatives run by state, local and community-based organisations are only at best partly meeting the needs of the state’s growing racially/ethnically diverse population in California. (USA)
Barnard (2011)	Preparedness	Tribal lands. The troubled history of tribal-state relationship threatens to impede response to infectious disease outbreaks or other public health emergencies on tribal lands. Focused on jurisdictional issues. (USA)
Christie (2015)	Preparedness	Communities at risk: no real definition but discusses the concept of vulnerability as a condition of a society that makes it possible for a hazard to become a disaster. The discourse of vulnerability is at the core of the Sendai Framework for Disaster Risk Reduction, 2015-2030. The global south- case study on Cotopaxi in Sangolqui, Ecuador. (Ecuador)
Gupta (2011)	Preparedness and response	Groups at highest risk for infection or influenza-related complications. More of a report on the setting up of clinics and the public education campaign. Not on the engagement of community. (USA)
Nepal (2011)	Preparedness and response	A group of individuals sharing the same resources, culture, language, and country of origin. Linguistically isolated immigrant communities, primarily Spanish, Chinese, Vietnamese, and Somali languages. (USA)
Nirupama & Maula (2011)		Vulnerable people, such as lack of education and adequate income, age, poor health, physical disability, and living in hazardous locations. Working with neighbourhood communities to explore their vulnerabilities and their level of resilience. (Canada)

Source: author (date)	Stage of preparedness cycle	Definition of community
Shiu-Thornton (2007)	Preparedness response and recovery	Limited English proficient (LEP) communities and the medical interpreters who engage with these communities- from the perspective of medical interpreters. (USA)
Takazawa & Williams (2011)	Response and recovery	Response of affected communities- affected by disasters. Very theoretical paper looking at the idea of the utopian period where communities rise to the occasion and help each other. The idea of "insiders" and "outsiders" to define who belongs to the community. (USA)
Wyte-Lake (2014)	Preparedness	Veterans receiving home-based care in a community served by the Veterans Health Administration (VHA). From the perspective of the practitioners and leadership. (USA)
Bird et al (2010)	Preparedness	Tourists to a local area with volcanic eruption risk and tourist employee community. The tourism sector's capacity to respond positively during a future eruption. (Iceland)
Levac (2012)	Preparedness and response	Household emergency preparedness- could significantly reduce the negative consequences from disasters and ensure that people can care for themselves and their families in the first 72 hours after a disaster. Looking at the socioal determinants that affect vulnerability. (Canada and US)
Kubicek (2008)	Preparedness	School communities. Parent perspectives on what the school does in terms of preparedness and how they could engage the parents more. Schools view on the negative consequences of reactions of parents to a disaster. (USA)
Kun (2014)	Preparedness	Used community sectors as proxies for communities because they are more definable and amenable to measurement within the context of public health emergency preparedness. Community sectors are also appropriate proxies because state, territorial and local health departments typically engage organisations (rather than specific communities or community members) in their public health preparedness activities. Includes: business, community leaders, cultural and faith-based groups, education and childcare, emergency management, health care, housing and sheltering, media, mental/behavioural health, social services, senior services. (USA)
Snair (2016)	Preparedness	US communities who have applied elements of disaster risk reduction through novel and traditional practices. Looking at the local level and the cross-sector collaboration within communities. (USA)
UNEP (2015)	Preparedness	People involved in emergency preparedness management. Includes government authorities, business owners and population and industry groups. Anyone who is motivated and capable of organising and influencing other community members. (International)
Allen (2006)	Preparedness	"Community" is used to describe a range of overlapping social units that serve as a "focus of social activity" and/or of shared identity. In emergency preparedness "community" has tended to delineate the population living within the territorial bounds of a town or village administrative unit, which is considered to be exposed to a relatively high degree of environmental risk. IN the Philippines the barangay communities, which form the lowest formal tier of the decentralised local government system and approximate to villages in rural areas or districts of towns in an urban setting. (Philippines)
Bouye (2009)	Preparedness	Focusing on US populations. There is a tendency to focus on the target group such as "women" "ethnic minorities" or "the poor"- with that entails for the creation of vulnerable groups and the increased stigmatisation of certain groups, rather than focusing on the whole community. Communities as a heterogeneous entity. (USA)
Kiltz (2013)	Preparedness and response	Public housing residents, single-parent families, low-income populations- in the US. (USA)
Kenney (2015)	Preparedness, response, recovery	Looking at Māori resilience through traditional approaches to disaster risk reduction- disproportionately affected in terms of reduced financial resources, access to basic necessities, power and transport. (New Zealand)
Burkle (2011)	Preparedness, response, recovery	Communities affected by emergencies including disease, weather-related and terrorism-related and the resiliency and vulnerabilities of such communities. (International)

Source: author (date)	Stage of preparedness cycle	Definition of community
Schoch-Spana (2013)	Preparedness, response	Whole community approach US- Local health department practitioners- their views of what enhances/inhibits community engagement in public health emergency preparedness. (USA)
Stajura (2012)	Preparedness	Community-based organisations and faith-based organisations relationship with the local government agencies. (USA)
Cripps (2015)	Preparedness	Whole community: involves everyone in the community when preparing for emergencies- including members of often-overlooked groups. Deaf people who sign are an example of one such type of group. (USA)
Eisenman (2014)	Preparedness	Sixteen communities within Los Angeles county trained by a public health nurse in disaster preparedness using a toolkit. (USA)
Paton (2006)	Preparedness, response, recovery	Communities across the world, particularly those susceptible to disasters and those who have already been affected by disaster. (International)

Appendix 4. Original framework

NICE framework of barriers and facilitators

- Context
 - Quality of existing relationships
 - Barriers
 - History of poor relations
 - Community engagement as a threat
 - Enablers
 - Organisational culture, attitudes and practice
 - Barriers
 - Lack of organisational commitment
 - Resistance to sharing power and control
 - Limited vision of community engagement in terms of: who can be involved, what they can do, value of their expertise
 - Enablers
 - Supportive culture, attitudes and practice embedded within the organisation from the start
 - Supportive culture, attitudes and practice triggered or reinforced during engagement
- Infrastructure
 - Investment in infrastructure and planning to support community engagement
 - Barriers
 - Lack of clarity, lack of transparency and confused expectations
 - Competing agendas across stakeholders within partnerships
 - Lack of dedicated staff and resources
 - Limited timelines for building trust and achieving scope and depth
 - Enablers
 - Planned rather than ad-hoc community engagement strategy and methods
 - Clarity of goals and transparency of process
 - Joint decision making
 - Community engagement as a transactional and reciprocal process
 - Establishing or using existing partnerships and networks
 - Investing time, effort and resources to build relationships and trust
 - Dedicated staff
 - Support, training and capacity building
 - Barriers
 - Lack of appropriate training for professionals
 - Lack of appropriate training for communities
 - Enablers
 - Mentoring and other forms of support for community members
 - Community capacity building as an important end goal
- Process
 - Capabilities and the engagement process
 - Barriers
 - Lack of capacity within communities
 - Lack of capacity within community organisations
 - Difficulties engaging specific groups
 - Enablers
 - Gaining direct access to communities
 - Matching engagement method to community
 - Outreach and advocacy
 - Inclusive and accessible practice