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Risk communication and public engagement for Mpox preparedness in Cameroon: Building public trust and preventing panic

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Abstract

Objective: Mpox remains an important public health concern in Central Africa, where recurrent outbreaks are compounded by misinformation, stigma, linguistic diversity, and variable trust in health institutions. Effective risk communication and public engagement (RCPE) are critical for preparedness and response**.** To synthesize evidence on mpox preparedness and outbreak communication in Cameroon and identify strategies that can strengthen public trust, community participation, and prevention while reducing panic and misinformation**.**

Materials and methods: A PRISMA-informed narrative review and policy analysis covered literature and guidance published from January 2000 to March 2026. Thematic synthesis involving 72 sources was used to identify communication barriers, trust-building mechanisms and community engagement approaches.

Results: Cameroon-specific evidence indicates that community dialogue, trusted local leaders, multilingual communication, and participatory approaches are important for effective outbreak communication. A five-pillar National Mpox RCPE Framework is proposed for Cameroon.

Conclusion: Institutionalizing RCPE within health emergency preparedness systems can enhance trust, strengthen community resilience, and improve mpox prevention and response in Cameroon.

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Introduction

Emerging and re-emerging infectious diseases continue to pose major threats to global health security. The increasing frequency of zoonotic spillover events, rapid urbanization, environmental degradation, climate change, globalization, and

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unprecedented human mobility have created favorable conditions for the emergence and spread of infectious diseases worldwide (1,2). Recent public health emergencies, including Ebola virus disease, coronavirus disease 2019 (COVID-19), Marburg virus disease, and mpox, have demonstrated that outbreak control depends not only on biomedical interventions but also on effective communication and public trust (3,4). Mpox, formerly known as monkeypox, is a zoonotic disease caused by the monkeypox virus, an Orthopoxvirus closely related to variola virus, the causative agent of smallpox (5). First identified in laboratory monkeys in 1958 and subsequently detected in humans in the Democratic Republic of Congo in 1970, mpox remained largely confined to Central and West African countries for several decades (6). However, the unprecedented multinational outbreak reported in 2022 transformed mpox into a global public health concern, resulting in thousands of confirmed cases across regions with no previous history of sustained transmission (7).

The changing epidemiology of mpox has generated renewed interest in outbreak preparedness and communication strategies. Although the disease generally presents with fever, lymphadenopathy, and characteristic skin lesions, evolving transmission patterns and public perceptions have complicated response efforts (8). Misunderstanding of transmission routes, stigma directed toward affected populations, misinformation circulating through digital platforms, and distrust of health authorities have emerged as major barriers to effective disease control (9). Consequently, public health responses increasingly recognize that communication interventions are as important as clinical and epidemiological measures.

Risk communication refers to the real-time exchange of information, advice, and opinions between experts, authorities, and populations facing threats to health, economic, or social well-being (10). Public engagement involves the active participation of communities in decision-making processes, preparedness planning, implementation of interventions, and evaluation of response strategies (11). Together, risk communication and public engagement (RCPE) form one of the core capacities required under the International Health Regulations (IHR) for effective emergency preparedness and response (12).

The importance of RCPE became particularly evident during the COVID-19 pandemic. Countries that implemented transparent communication, timely information dissemination, and community-centered engagement approaches generally achieved higher public compliance with public health measures and greater trust in authorities (13). Conversely, inconsistent messaging, political interference, misinformation, and lack of community involvement contributed to confusion, vaccine hesitancy, and resistance to control measures (14). These lessons provide important insights for mpox preparedness in African settings.

Cameroon represents a particularly important context for examining RCPE in relation to mpox. Located within the Congo Basin ecological zone, Cameroon experiences substantial biodiversity, extensive wildlife-human interactions, and increasing environmental changes that may facilitate zoonotic disease emergence (15). The country shares borders with six neighboring nations and serves as a major transit corridor within Central Africa. Population displacement due to insecurity, migration, urban expansion, and cross-border trade further increase opportunities for

infectious disease spread (16). Historically, Cameroon has experienced outbreaks of cholera, measles, yellow fever, poliomyelitis, COVID-19, and other epidemic-prone diseases that have exposed gaps in communication systems and community engagement structures (17). Despite improvements in surveillance and response capacities, significant challenges remain regarding health literacy, misinformation management, trust in governmental institutions, and equitable access to public health information (18).

The sociocultural diversity of Cameroon presents both opportunities and challenges for outbreak communication. More than 250 ethnic groups, numerous indigenous languages, varying literacy levels, religious diversity, and differing cultural beliefs influence how communities perceive disease risks and respond to health messages (19). Communication strategies that fail to account for these contextual factors may inadvertently increase fear, resistance, and mistrust during outbreaks.

In recent years, the rapid expansion of internet access and social media usage has transformed the communication landscape in Cameroon. Digital platforms facilitate rapid dissemination of public health information but simultaneously accelerate the spread of misinformation and rumors (20). During health emergencies, false information regarding disease origins, treatments, vaccines, and government intentions can undermine public confidence and compromise response efforts. Effective management of this "infodemic" has therefore become a critical component of modern outbreak preparedness (21-37).

Building public trust remains central to successful risk communication. Trust influences whether individuals seek information, adopt preventive behaviors, comply with public health recommendations, participate in surveillance activities, and support response interventions (22). Trust is particularly important in contexts where health systems face resource constraints and where historical experiences may have shaped public perceptions of governmental institutions (23).

Emerging evidence suggests that communication approaches emphasizing transparency, empathy, consistency, cultural sensitivity, and community participation are more likely to generate trust than traditional top-down information dissemination models (24). Cameroon-specific experience supports this direction. During COVID-19, WHO-supported RCPE training involved health workers, civil society and youth organizations, transport unions, media actors, communication focal points, and social mobilization personnel, illustrating the value of multisectoral communication capacity (37). A national Cameroon study conducted during the COVID-19-to-mpox transition also identified television, radio, and social media as major channels and reported that health and community leaders were among the most trusted information sources (35). These findings provide a locally grounded basis for a community-centred mpox communication strategy.

Despite increasing recognition of RCPE as a cornerstone of health emergency management, relatively limited literature has examined the specific communication challenges and opportunities associated with mpox preparedness in Cameroon. Existing studies often focus on epidemiological surveillance, clinical management, and laboratory diagnosis while paying comparatively less attention to social and behavioral dimensions of outbreak response (25).

Given the continuing threat of mpox emergence and the broader need for strengthened epidemic preparedness, a comprehensive examination of RCPE strategies within the Cameroonian context is both timely and necessary. Understanding how communication systems can promote trust, counter misinformation, reduce stigma, and encourage community participation is essential for enhancing national resilience against current and future outbreaks.
This review therefore examines the current landscape of risk communication and public engagement during emerging mpox situations in Cameroon, identifies key challenges and opportunities, and proposes a context-specific framework for strengthening public trust and preventing panic during public health emergencies.

Materials and methods

Study design

We conducted a PRISMA-informed narrative review and policy analysis of peer-reviewed literature and policy guidance published between January 2000 and March 2026 to evaluate risk communication and community engagement in Mpox preparedness and response in Cameroon. Narrative reviews are particularly suitable for examining complex public health topics involving multiple disciplines, contextual factors, and diverse evidence sources (26) (Figure 1).

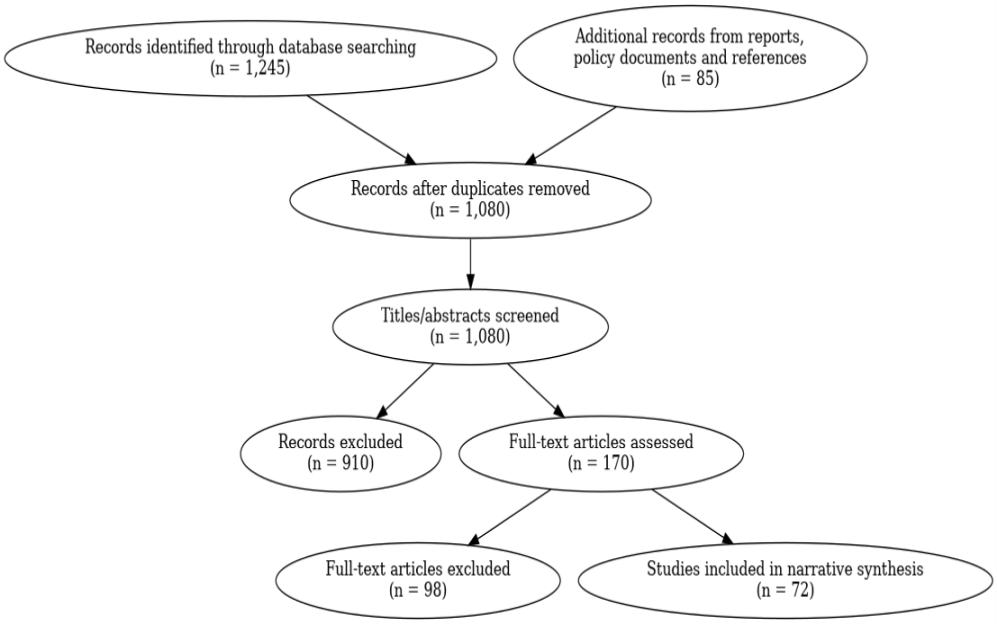

Figure 1: PRISMA-informed literature search and study selection process (*Flow diagram showing identification, screening, eligibility assessment, and inclusion of studies, policy documents, and technical reports reviewed for this narrative synthesis and policy analysis)*

Inclusion criteria

This involved;
1. Peer-reviewed articles published in English or French.
2. Reports from WHO, Africa CDC, UNICEF, CDC, and governmental agencies.
3. Studies addressing outbreak communication, community engagement, trust, misinformation, or public health emergencies.
4. Publications relating to mpox, Ebola, COVID-19, and other emerging infectious diseases with transferable lessons.
5. Documents published between 2000 and 2026.

Exclusion criteria

This involved;
1. Articles lacking relevance to communication or public engagement.
2. Editorials without substantive evidence.
3. Conference abstracts with insufficient methodological information.
4. Duplicate publications.

Study selection

Titles and abstracts were screened for relevance, followed by full-text assessment of potentially eligible records against predefined criteria. Records were excluded when they addressed unrelated clinical or epidemiological questions without a communication or engagement component, were duplicate publications, were conference abstracts without sufficient methodological information, or were editorials/commentaries without substantive evidence. Policy documents and technical guidance were assessed for direct relevance to RCPE implementation, outbreak preparedness, community protection, infodemic management, or vaccine communication.

Data extraction and synthesis

Extracted information included study characteristics, country and setting, communication interventions, community engagement approaches, trust-building mechanisms, misinformation-management strategies, behavioral outcomes, vaccine communication considerations, and policy implications. Because this was a narrative review rather than a systematic effectiveness review, no formal risk-of-bias instrument was applied. Instead, source credibility was considered qualitatively according to peer-review status, authority of the issuing organization, methodological transparency, contextual relevance, and consistency with other evidence. A thematic synthesis approach was employed to identify recurring patterns and generate recommendations applicable to the Cameroonian context.
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Policy analysis framework

National and international policies were examined using a health systems governance perspective focusing on: communication preparedness, institutional coordination, community participation, equity considerations, trust-building mechanisms and monitoring and evaluation systems.

Conceptual framework development

The proposed National Mpox Risk Communication and Public Engagement Framework was developed through integration of evidence from the reviewed literature, WHO RCPE guidance, Africa CDC recommendations, behavioral science principles, and lessons learned from previous outbreaks in Africa. The framework emphasizes transparency, participation, trust, inclusivity, and adaptive communication as core pillars of outbreak preparedness and response.

Ethical considerations

The study utilized publicly available literature and policy documents and therefore did not require institutional ethical approval.

Results and discussion

Epidemiology of Mpox in Cameroon and Central Africa

Mpox remains one of the most important zoonotic viral diseases affecting Central and West Africa. Since its first recognition in humans in the Democratic Republic of Congo (DRC) in 1970, the disease has become increasingly important due to rising incidence, expanding geographic distribution, changing transmission dynamics, and the emergence of outbreaks outside historically endemic regions. The global outbreak that began in 2022 fundamentally altered perceptions of mpox from a localized zoonotic infection to an international public health threat requiring coordinated surveillance, communication, and response systems.

Central Africa remains the epicenter of mpox transmission. Countries including the DRC, Cameroon, the Central African Republic, the Republic of Congo, and Gabon continue to report sporadic human infections and localized outbreaks linked to zoonotic transmission (27). The region's dense tropical forests, extensive biodiversity, wildlife hunting practices, and close human-animal interactions provide favorable ecological conditions for viral maintenance and spillover events (27).

Cameroon occupies a strategically important position within the Congo Basin ecosystem. The country's geographical location, extensive forest cover, and shared borders with six neighboring countries increase vulnerability to cross-border transmission of emerging infectious diseases (Table 1).

Table 1: Key epidemiological and communication factors influencing Mpox preparedness in Cameroon

Domain	Current situation	Public Health implication	Communication priority
Zoonotic Exposure	Frequent human-wildlife interaction	Increased spillover risk	One health education
Cross-Border Mobility	High population movement	Regional transmission risk	Cross-border communication
Urbanization	Expanding urban populations	Rapid disease spread	Urban risk awareness
Health Literacy	Variable across regions	Poor understanding of prevention	Simplified messaging

Wildlife reservoirs suspected to harbor Orthopoxviruses are widespread within forested regions of southern and eastern Cameroon, where hunting, bushmeat consumption, and forest-dependent livelihoods remain common. Recent epidemiological assessments indicate that mpox transmission patterns have become increasingly complex. Historically, most infections were associated with zoonotic exposure; however, evidence from recent outbreaks demonstrates substantial human-to-human transmission through close physical contact, respiratory secretions, contaminated materials, and household exposure (27). These evolving transmission dynamics necessitate communication strategies that effectively address both traditional zoonotic risks and contemporary patterns of person-to-person spread.

The cessation of routine smallpox vaccination following global eradication has also contributed to increased population susceptibility. Several studies estimate that declining Orthopoxvirus immunity among younger populations may partially explain rising mpox incidence across endemic regions (28). Consequently, risk communication strategies must address evolving perceptions of vulnerability among populations with limited awareness of Orthopoxvirus diseases.

Urbanization further complicates outbreak preparedness. Historically considered a rural disease, mpox is increasingly reported in peri-urban and urban settings, where population density, mobility, and social connectivity facilitate transmission. Urban outbreaks may spread rapidly through social networks and digital communication channels, increasing the importance of timely risk communication and misinformation management.

Cameroon has strengthened surveillance systems in recent years through integration of One Health approaches, improved laboratory capacity, and collaboration with international partners. Nevertheless, surveillance gaps remain, particularly in remote rural areas where health services are limited and community awareness of emerging infectious diseases is often low. Effective RCPE can play a critical role in improving community-based surveillance by encouraging early reporting of suspected cases and reducing barriers to healthcare seeking.

The epidemiological experience of Ebola virus disease, COVID-19, cholera, and yellow fever in Cameroon has demonstrated that disease transmission is often amplified by social and behavioral factors including fear, stigma, misinformation,

and distrust. These lessons underscore the need for communication systems that operate alongside epidemiological surveillance and clinical response mechanisms.

Current risk communication and public engagement landscape in Cameroon

Cameroon has progressively strengthened its health emergency communication capacities over the past decade, largely in response to recurrent outbreaks of epidemic-prone diseases. The Ministry of Public Health, in collaboration with international partners, has established communication mechanisms designed to support outbreak preparedness and response (29).

Current RCPE activities are coordinated through national public health emergency structures and involve multiple stakeholders, including governmental agencies, international organizations, civil society groups, community-based organizations, religious institutions, traditional authorities, media organizations, and academic institutions. These partnerships have facilitated dissemination of health information during previous public health emergencies.

Despite these advances, risk communication activities remain predominantly event-driven and reactive. Communication interventions are frequently intensified only after outbreak detection rather than being integrated into routine preparedness activities. This reactive approach limits opportunities to establish trust, strengthen community resilience, and address misinformation before emergencies occur.

Community radio remains one of the most influential communication channels in Cameroon, particularly in rural areas where internet access is limited. Radio broadcasts provide opportunities for dissemination of health messages in local languages and can facilitate two-way communication through call-in programs and community discussions. However, limited coordination between health authorities and local media sometimes contributes to inconsistent messaging.

Digital communication platforms have become increasingly important. Social media applications such as Facebook, WhatsApp, TikTok, and X (formerly Twitter) are widely used for information sharing, particularly among younger populations (Table 2).

Table 2: Trusted communication channels for Mpox risk communication in Cameroon

Communication channel	Reach	Trust level	Recommended use
Community Radio	High	High	Rural communication
Religious Institutions	High	High	Trust-building
Traditional Leaders	Moderate-High	High	Community mobilization
Community Health Workers	Moderate	High	Household engagement
Television	Moderate	Moderate	National awareness
Social media	Very High	Variable	Rapid information dissemination
SMS Platforms	High	Moderate	Emergency alerts

These platforms offer opportunities for rapid dissemination of public health messages but simultaneously enable rapid spread of misinformation and rumors.

Community engagement mechanisms vary substantially across regions. In some settings, health authorities collaborate effectively with traditional leaders, religious institutions, women's associations, youth groups, and community health workers. In other areas, engagement remains limited to information dissemination with minimal community participation in decision-making processes.

Lessons from COVID-19 revealed both strengths and weaknesses within Cameroon's RCPE infrastructure. WHO-supported national and regional training strengthened the capacity of health workers, civil society, youth organizations, media, transport unions, bloggers, and communication focal points to disseminate information and collect community feedback (37-47). In addition, community dialogue and influencer-led COVID-19 vaccination activities were implemented in several regions, with more than 1,000 community mediators engaged in dialogue activities (38). These experiences demonstrate that Cameroon already has relevant communication assets that can be adapted for mpox preparedness rather than creating a parallel system.

The current mpox communication landscape therefore presents an opportunity to transition from predominantly top-down communication models toward more inclusive, community-centered engagement strategies.

Communication challenges and barriers

Several structural, social, cultural, and institutional factors limit the effectiveness of risk communication during emerging mpox situations in Cameroon (Table 3).

Limited public awareness

Knowledge of mpox remains relatively low among the general population. Many individuals are unfamiliar with disease symptoms, transmission pathways, prevention measures, and available healthcare services. Limited awareness may delay healthcare seeking, increase transmission risks, and facilitate rumor generation during outbreaks.

Table 3: Major Communication Barriers and Recommended Interventions

Barrier	Potential consequences	Recommended RCPE response
Low awareness	Delayed healthcare seeking	Public education campaigns
Misinformation	Panic and non-compliance	Infodemic management systems
Stigma	Underreporting	Anti-stigma communication
Language barriers	Exclusion of vulnerable groups	Local-language messaging
Institutional distrust	Resistance to interventions	Transparency and engagement
Limited resources	Reduced communication reach	Sustainable RCPE investments

RCPE: risk communication and public engagement.

Linguistic diversity

Cameroon is characterized by exceptional linguistic diversity, with more than 250 indigenous languages spoken across the country (19). Communication campaigns delivered exclusively in French or English may fail to reach substantial segments of the population. Effective RCPE requires multilingual communication strategies adapted to local contexts.

Health literacy constraints

Low health literacy represents another major barrier. Complex scientific terminology and technical public health messages may be difficult for many communities to understand, particularly in rural and underserved settings. Simplified, culturally appropriate messaging is therefore essential.

Stigma and social exclusion

Mpox-related stigma can discourage case reporting, healthcare utilization, and participation in surveillance activities. Experiences from HIV/AIDS, Ebola, and COVID-19 demonstrate that stigmatization can significantly undermine outbreak control efforts (30). Communication interventions must actively counter discriminatory narratives and promote empathy.

Institutional trust deficits

Trust in governmental institutions varies across communities and regions. Historical experiences, political dynamics, socioeconomic inequalities, and perceptions of transparency influence public confidence in official communications. Where trust is weak, even scientifically accurate information may be disregarded.

Resource constraints

Limited funding, inadequate communication infrastructure, shortages of trained communication specialists, and insufficient monitoring systems constrain RCPE implementation. Sustainable investments in communication preparedness remain necessary.

Misinformation and infodemic management

The rapid spread of misinformation has emerged as one of the most significant challenges during contemporary public health emergencies. The World Health Organization describes this phenomenon as an "infodemic," characterized by an overabundance of information both accurate and inaccurate that complicates public understanding and decision-making (21).

During recent infectious disease outbreaks, misinformation has frequently circulated through social media platforms, messaging applications, informal community networks, and traditional media outlets (31). Common themes include conspiracy

theories regarding disease origins, false prevention methods, fabricated treatments, vaccine-related misinformation, and allegations of governmental misconduct.

In Cameroon, WhatsApp and other social media platforms are important channels for health information. A survey of 1,000 Cameroonians found that social media use and medical mistrust were positively associated with belief in COVID-19 vaccine misinformation, while information seeking was associated with lower vaccine hesitancy (36). This evidence helps explain why misinformation persists: it is not driven only by lack of knowledge, but also by information insufficiency, mistrust, emotionally salient narratives, rapid peer-to-peer sharing, and the credibility of the person or network transmitting a message. In addition, language diversity and uneven digital and health literacy can make centrally produced messages less accessible or less persuasive.

Misinformation may also persist when official communication is delayed, inconsistent, overly technical, or insufficiently responsive to community concerns. During outbreaks, uncertainty creates information gaps that can be filled by rumors, speculation, and competing explanations. Messages about vaccination may be particularly vulnerable when communities have unanswered questions about eligibility, safety, effectiveness, availability, side effects, or duration of protection. WHO guidance therefore emphasizes social listening, community feedback, transparent communication of uncertainty, stigma reduction, and context-specific engagement as integral components of mpox preparedness and response (40-42).

Effective infodemic management requires proactive monitoring systems capable of identifying emerging rumors before they become widespread. Social listening tools, media monitoring platforms, and community feedback mechanisms can provide valuable insights into public concerns and information needs.

Successful misinformation management strategies generally include: early identification of rumors, rapid dissemination of corrective information, use of trusted messengers, community dialogue and feedback, digital literacy promotion, collaboration with media organizations and continuous monitoring and evaluation.

Importantly, evidence indicates that directly confronting misinformation without providing alternative explanations may sometimes reinforce false beliefs (32). Communication strategies should therefore emphasize evidence-based narratives, empathy, trusted messengers, rapid response to information gaps, and opportunities for dialogue rather than relying solely on myth correction. In Cameroon, this means linking digital monitoring with community radio, health workers, traditional and religious leaders, youth networks, and local-language communication.

Vaccine communication should be integrated into the same trust-building architecture. WHO's 2024–2027 mpox strategic framework places RCPE alongside surveillance, immunization, primary healthcare, and clinical services, while the 2025 global preparedness and response plan emphasizes community protection, tailored interventions, feedback, stigma reduction, and decentralized communication (40,41). Africa CDC's mpox vaccination toolkit similarly provides planning and communication resources for African countries (43). For Cameroon, vaccine messages should therefore explain who is prioritized, why vaccination is recommended, what is known and uncertain about protection, how adverse events are addressed, and where eligible people can obtain reliable information.

Trust building during Mpox emergencies

Trust is widely recognized as one of the strongest determinants of public compliance during health emergencies (22). Trust influences risk perception, information-seeking behavior, healthcare utilization, vaccine acceptance, and adherence to public health recommendations.

Theoretical frameworks suggest that trust is built through perceptions of competence, honesty, transparency, fairness, empathy, and consistency (33). During outbreaks, populations evaluate not only the content of messages but also the credibility of those delivering them. Transparent communication is particularly important. Public health authorities should communicate what is known, what remains uncertain, and what actions are being taken to address emerging risks. Attempts to minimize uncertainty or withhold information may undermine credibility when circumstances evolve. Consistency across institutions is equally important. Contradictory statements from governmental agencies, political leaders, healthcare providers, or international organizations can generate confusion and erode trust. Coordinated communication strategies are therefore essential.

Empathy represents another critical component of trust-building. Communities experiencing fear, economic hardship, stigma, or uncertainty require acknowledgment of their concerns. Messages perceived as compassionate and respectful are generally more effective than those relying exclusively on technical information (34). Evidence from Ebola outbreaks in West Africa demonstrated that trusted local actors; including traditional leaders, religious leaders, community health workers, and respected civil society representatives often exert greater influence than distant governmental institutions. Similar approaches are likely to enhance mpox communication efforts in Cameroon. Trust-building should therefore be viewed not as a crisis response activity but as a continuous process requiring long-term investment in relationships between communities and public institutions.

Community engagement strategies for Mpox preparedness and response

Community engagement constitutes a fundamental component of effective RCPE. Unlike traditional communication approaches that focus primarily on information dissemination, community engagement emphasizes participation, dialogue, shared decision-making, and local ownership (11).

Engagement of traditional leaders

Traditional authorities remain highly influential across many regions of Cameroon. Their involvement can enhance message credibility, facilitate community mobilization, and support culturally appropriate adaptation of public health interventions.

Religious institutions

Religious leaders often serve as trusted sources of information and moral guidance. Partnerships with churches, mosques, and faith-based organizations can expand

communication reach and strengthen community acceptance of public health measures.

Community health workers

Community health workers act as critical bridges between health systems and communities. Their familiarity with local contexts enables delivery of tailored messages and identification of emerging concerns.

Youth engagement

Young people represent major users of digital communication platforms and can serve as effective advocates for accurate health information. Youth-centered engagement initiatives may improve outreach and counter misinformation among younger populations.

Participatory communication

Participatory approaches encourage communities to identify concerns, propose solutions, and contribute to decision-making processes. Such approaches have been associated with higher levels of trust, ownership, and compliance during outbreaks.

Community-based surveillance

Engaged communities are more likely to participate in surveillance systems, report suspected cases, and support contact tracing activities. Community engagement therefore contributes directly to epidemiological effectiveness.
Collectively, these strategies support a transition from passive communication models toward collaborative public health governance, strengthening resilience against mpox and future emerging infectious diseases.

Regional comparison with existing African RCPE approaches

The proposed Cameroonian framework is consistent with, but deliberately adapts, lessons from other African settings. In Nigeria, mpox preparedness was supported by an established national response plan with an RCPE component, coordinated through an Incident Management System involving health and other sectors, with implementation structures extending to states (44). The Nigerian experience highlights the importance of institutional coordination and decentralized emergency structures. In the DRC, mpox response work has emphasized context-specific community engagement in fragile and conflict-affected settings, where mistrust, insecurity, and local social dynamics require dialogue and locally trusted actors rather than one-way messaging (45). Uganda provides a particularly relevant operational example: mpox RCPE has combined community health workers, anthropological and social listening approaches, local-language materials, radio and television, engagement of mobile and high-risk populations, and community dialogues (46,47). These approaches complement Cameroon's existing strengths in community radio, traditional and religious leadership, and multisectoral emergency

communication. The proposed framework therefore adds value by explicitly linking risk assessment, transparent communication, community participation, infodemic management, and monitoring and learning under public trust as the integrating outcome.

Proposed national Mpox risk communication and public engagement framework for Cameroon

Implementation priorities in low-resource settings. Implementation should begin with a small set of high-impact functions that can be sustained with existing structures: designate RCPE focal points within emergency operations, map trusted messengers and priority communities, maintain pre-tested multilingual messages, establish low-cost social listening and rumor-reporting channels, and use community radio and frontline health workers for two-way communication. More resource-intensive digital monitoring, mass-media campaigns, and specialized training can be phased in as resources permit. Integration with existing One Health, surveillance, immunization, primary healthcare, and emergency-management systems should be prioritized to avoid parallel structures. This phased approach is consistent with recent WHO guidance emphasizing community protection, local leadership, infodemic management, and integration of RCPE into broader mpox preparedness and response (40-42).

Interaction among the five pillars. The pillars are designed as a continuous feedback loop rather than independent activities. Risk assessment and surveillance identify epidemiological and social risks; transparent communication translates these findings into timely, understandable messages; community engagement tests whether messages and interventions are acceptable and identifies emerging concerns; infodemic management uses community and media feedback to detect and address information gaps and harmful narratives; and monitoring, evaluation and learning measures reach, trust, participation, and behavioral outcomes and feeds lessons back into risk assessment and preparedness. Public trust is the integrating outcome: transparent communication supports trust, trusted relationships improve engagement and reporting, engagement generates better information for surveillance and social listening, and learning improves subsequent communication.

Framework rationale

The recurring emergence of zoonotic diseases in Central Africa, combined with lessons learned from Ebola virus disease, COVID-19, cholera, and yellow fever outbreaks, underscores the need for a comprehensive, institutionalized, and context-specific Risk Communication and Public Engagement (RCPE) framework for Cameroon. Existing communication approaches often remain reactive, fragmented, and insufficiently integrated into broader preparedness systems. A sustainable framework should therefore strengthen communication readiness before outbreaks occur while ensuring rapid adaptation during emergencies.

The proposed National Mpox RCPE Framework is grounded in the principles of transparency, inclusivity, community participation, accountability, cultural sensitivity, equity, and evidence-based decision-making. The framework (Figure 2)

aligns with the International Health Regulations, the WHO Strategic Framework for Risk Communication and Community Engagement, Africa CDC preparedness guidance, and the One Health approach to emerging infectious diseases (10,12). The framework consists of five interconnected pillars: (1) Risk Assessment and Surveillance, (2) Transparent Communication, (3) Community Engagement, (4) Infodemic Management, and (5) Monitoring, Evaluation and Learning. Public trust functions as the central integrating element linking all pillars and contributing to improved preparedness, reduced panic, and enhanced outbreak control.

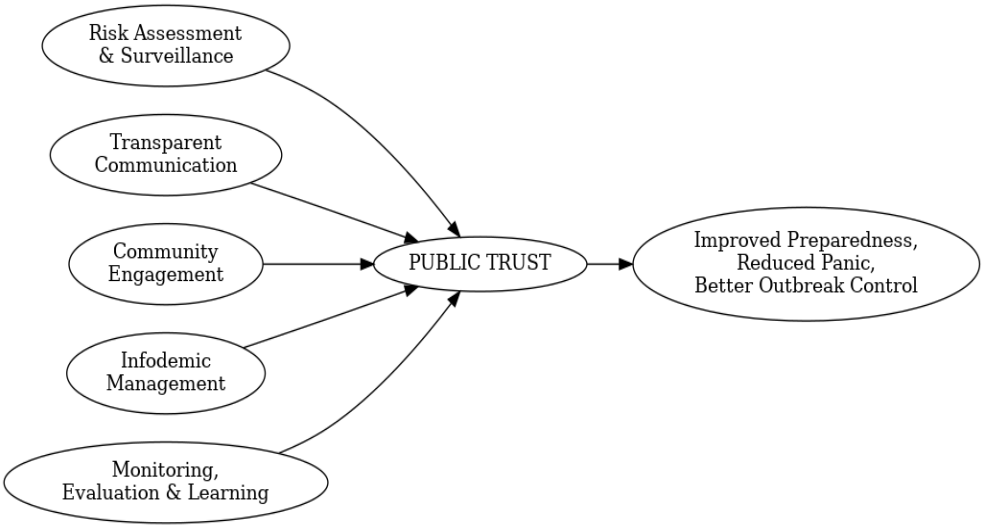

Figure 2: Proposed national Mpox risk communication and public engagement framework for Cameroon

Pillar 1: Risk assessment and communication preparedness

Preparedness activities should begin before outbreak occurrence. Communication preparedness requires systematic assessment of public perceptions, community vulnerabilities, communication infrastructure, information ecosystems, and trust dynamics. Key actions include: development of pre-approved communication materials, mapping of trusted community influencers, establishment of emergency communication protocols, training of spokespersons and communication officers, creation of multilingual communication resources, integration of RCPE into national preparedness plans and preparedness investments enable rapid deployment of communication interventions when outbreaks emerge.

Pillar 2: Transparent and timely communication

Transparent communication forms the foundation of public trust. Authorities should provide timely, accurate, and evidence-based information regarding disease risks, transmission patterns, response activities, and ongoing uncertainties. Core communication principles include: accuracy, timeliness, consistency, openness regarding uncertainties, empathy and accessibility. Communication should occur

regularly, even when information remains incomplete, to prevent information vacuums that facilitate rumor generation.

Continuous monitoring and evaluation are essential for assessing communication effectiveness and improving future responses. Suggested indicators include: (i) public awareness and knowledge scores; (ii) trust in health authorities and spokespersons; (iii) proportion of communities reached with appropriate-language messages; (iv) message reach, penetration, and engagement; (v) number and proportion of priority rumors detected and addressed within a defined time; (vi) community participation in dialogues and feedback mechanisms; (vii) healthcare-seeking, reporting, and referral behaviors; (viii) vaccine information-seeking and uptake among eligible groups where vaccination is available; (ix) community satisfaction with communication; and (x) completeness and timeliness of after-action learning. Indicators should be disaggregated by region, sex, age, language/community, and vulnerability where feasible to identify inequities.

Pillar 3: Community engagement and participation

Communities should be recognized as active partners rather than passive recipients of information. Participatory engagement mechanisms increase trust, ownership, and behavioral compliance. Priority stakeholders include: traditional leaders, religious leaders, community health workers, women's associations, youth organizations, civil society organizations and local government representatives. Community engagement should extend beyond message dissemination to include consultation, co-design of interventions, and participatory monitoring.

Pillar 4: Infodemic surveillance and response

Digital misinformation has become a major threat to outbreak response effectiveness. Cameroon requires dedicated systems for monitoring, analyzing, and responding to misinformation. Key components include: Social listening systems, media monitoring platforms, community feedback mechanisms, rumor tracking databases, fact-checking partnerships, rapid response communication teams. Infodemic management should focus on understanding public concerns and information needs rather than solely correcting misinformation.

Pillar 5: Monitoring, evaluation, and learning

Continuous monitoring and evaluation are essential for assessing communication effectiveness and improving future responses. Indicators should measure: Public awareness, trust in health authorities, community engagement levels, message reach and penetration, misinformation prevalence, behavioral outcomes and community satisfaction. Lessons learned should be systematically documented and incorporated into preparedness planning.

Limitations

Several limitations should be acknowledged. First, the review employed a narrative rather than systematic review methodology, which may introduce selection bias. Second, empirical studies specifically addressing mpox communication in Cameroon remain limited, necessitating incorporation of evidence from other infectious disease outbreaks and comparable settings.

Third, communication landscapes evolve rapidly, particularly regarding digital media and misinformation dynamics. Consequently, some observations may require periodic updating as technologies and information ecosystems change.

The proposed National Mpox Risk Communication and Public Engagement Framework offerss a practical roadmap for strengthening preparedness and response capacities in Cameroon. By institutionalizing RCPE within national health security systems, investing in communication preparedness, empowering communities, and establishing mechanisms for continuous learning and adaptation, Cameroon can enhance resilience against mpox and future public health emergencies. The framework should be treated as an adaptive model rather than a fixed blueprint and should be refined as epidemiological patterns, communication technologies, community concerns, and vaccine availability change.

Ultimately, trust represents a critical resource during health crises. Building and sustaining that trust requires long-term commitment, transparent governance, meaningful community engagement, and recognition that effective communication is not merely the transmission of information but the foundation of collaborative public health action. Future implementation research should empirically test the proposed five-pillar framework across Cameroon's diverse urban, rural, border, and conflict-affected settings, assess its measurable effects on trust and preventive behaviors, and identify the most feasible indicators and communication channels for routine national scale-up.

Conclusions

The re-emergence and geographic expansion of mpox highlight the growing importance of preparedness strategies that extend beyond biomedical interventions. Effective outbreak response depends not only on surveillance systems, laboratory capacity, case management, and vaccination programs but also on the ability of authorities to communicate risks effectively, build public trust, and engage communities as active partners in disease prevention and control.

Cameroon occupies a strategically important epidemiological position within Central Africa, where ecological, social, demographic, and economic factors create favorable conditions for emerging infectious diseases. While the country has made important progress in strengthening public health preparedness, significant communication challenges persist. These include limited public awareness, misinformation, language diversity, health literacy constraints, stigma, institutional trust deficits, and inadequate community participation.

Evidence synthesized in this review demonstrates that transparent communication, participatory engagement approaches, trusted local messengers, behavioral science-

informed interventions, and proactive infodemic management can substantially improve outbreak response outcomes. Communication strategies that prioritize empathy, inclusivity, cultural sensitivity, and accountability are more likely to foster trust and encourage public cooperation.

The proposed National Mpox Risk Communication and Public Engagement Framework offers a practical roadmap for strengthening preparedness and response capacities in Cameroon. By institutionalizing RCPE within national health security systems, investing in communication preparedness, empowering communities, and establishing mechanisms for continuous learning and adaptation, Cameroon can enhance resilience against mpox and future public health emergencies.

Ultimately, trust represents the most valuable resource during health crises. Building and sustaining that trust requires long-term commitment, transparent governance, meaningful community engagement, and recognition that effective communication is not merely the transmission of information but the foundation of collaborative public health action.

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