

**How to Cite:**

Refaei, S. A., & El-Gilany, A.-H. (2022). Risk communication during infectious diseases pandemics: A narrative review. *International Journal of Health Sciences*, 6(S6), 4450–4470. <https://doi.org/10.53730/ijhs.v6nS6.11613>

# **Risk communication during infectious diseases pandemics: A narrative review**

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**Abstract**--Communication of risk is a central part of any policy for public health safety. Risk Communication notifies guides and trains the public, empowering them to make well-informed choices about the actions they will take based on the risks they possibly face. However, effectively communicating risk is a complex and challenging process. This review has been made to help public service organizations put themselves in the best situation to effectively communicate risk to the populations they serve. It has a special focus on media, through which many risk communication messages reach the public. Risk communication is an important issue in current COVID-19 pandemic.

**Keywords**--risk communication, infections, pandemics.

**Introduction**

During public health emergencies, people need to know what health risks they face, and what actions they can take to protect their health and lives. Accurate information provided early, and in languages and channels that people understand, trust and use, enables individuals to make decisions and take actions to protect themselves, their families and communities from threatening health risks<sup>1</sup>. Risk communication is an integral part of any emergency response. It is the real-time exchange of information, advice and opinions between experts, community leaders, or officials and the people who are at risk<sup>2</sup>. During epidemics and pandemics, and natural disasters, effective risk communication allows people at risk to understand and adopt protective behaviors<sup>2</sup>. It allows authorities and experts to address people's concerns and needs so that the advice they provide is relevant, trusted and acceptable.

WHO has manuals, training modules related to emergency and risk communication, which based on expert opinion or lessons drawn from major environmental disasters or disease outbreaks, such as the Severe Acute Respiratory Syndrome (SARS) outbreak of 2003, and the H1N1 influenza pandemic of 2009<sup>1</sup>. Public health emergencies, such as the Ebola virus disease outbreak in West Africa (2014–2015), the emergence of the Zika virus syndrome in 2015–2016, multi-country yellow fever outbreaks in Africa in 2016 and recently, the COVID-19 pandemic in 2019 and still ongoing have highlighted major challenges and gaps in how risk is communicated during epidemics and other health emergencies. The challenges include the rapid transformation in communications technology, including mobile telephones, the widespread use and increasingly powerful influence of digital media which has had an impact on ‘traditional’ media (newspapers, radio and television), and major changes in how people access and trust health information. Important gaps include the social, economic, political and cultural factors influencing people’s perception of risk and their risk-reduction behaviors. Risk communication for health protection needs to work within health and emergency preparedness and response systems.<sup>1</sup>

### **Search strategy**

This is a narrative review, which included the current research related to risk communication during infectious diseases pandemics. A literature search was conducted on Google (google.com) on September 28, 2021. Search terms included “risk,” “communication,” “infectious diseases,” “pandemic,” “perception”, and “COVID-19”. These terms were used in different combinations. All articles and books published in English language were included.

### **Definition of risk Communication (RC)**

Risk is the possibility of something bad happening.<sup>3</sup> Risk involves uncertainty about the effects/implications of an activity with respect to something that humans value (such as health, well-being, wealth, property or the environment), often focusing on negative, undesirable consequences.<sup>4</sup> Many different definitions have been suggested. The international standard definition of risk for common understanding in different applications is “effect of uncertainty on objectives”.<sup>5</sup> This term is usually related to another term, which is risk perception “Risk perceptions are beliefs about potential harm or the possibility of a loss. It is a subjective judgment that people make about the characteristics and severity of a risk”<sup>6</sup>.

### **Communication**

Is the activity of conveying information through the exchange of thoughts, messages, or information, as by speech, visuals, signals, writing, or behavior. It is the meaningful exchange of information between two or more living creatures. Communication requires a sender, a message, and a recipient, although the receiver does not have to be present or aware of the sender's intent to communicate at the time of communication; thus, communication can occur across vast distances in time and space. The communication process is complete once the receiver understands the sender's message.<sup>7</sup>

## **Risk communication**

Is the real-time exchange of information, advice and opinions between experts, community leaders, officials and the people who are at risk and is an integral part of any emergency response. In epidemics and pandemics, in humanitarian crises and natural disasters, effective risk communication allows people at risk to understand and adopt protective behaviors. It allows authorities and experts to listen to and address people's concerns and needs so that the advice they provide is relevant, trusted and acceptable<sup>2</sup>. Risk communication is a dynamic and interactive process involving exchanges between different groups of key players and audiences. Covello & Sandman stated that the principle of engaging the public in matters of risk, whether it is risk assessment, decision-making, management or communication, makes one of the critical differences of risk communication.<sup>8</sup>

## **Risk communication versus communication crisis**

Risk communication is based on ongoing projections and calculations of the potential for future harm; in contrast, crisis communication is a spontaneous and reactive process, often occurring in unexpected emergencies <sup>9, 10, 11</sup>. Crisis communication messages are based on what is known and not known about a current state or condition (for example, its magnitude, duration, control, cause, consequences); on the other hand, Risk communication messages, emerge long before a crisis event occurs, and aim to reduce the likelihood of a crisis event occurring in the long term <sup>12,13</sup>. Many of the sources cited refer to risk communication in the context of emergencies, thus adopting terminology such as 'crisis risk communication' or 'emergency risk communication' that blur the difference between the two fields.

## **Risk communication (RC) and risk perceptions (RP)**

Many studies have focused on the associations of RC and RP <sup>14, 15</sup>; however, there are reports on RC influence over RP in recent research <sup>16, 17, 18</sup>. It is recommended that RP is a prerequisite for protective behaviors <sup>14, 19, 20</sup>. A review of the literature reveals that there is a decrease in articles published on a one-way flow of RC as well as an increase in those concerned with two-way communications <sup>21</sup>. Risk information affects individuals in complex and unpredictable ways, and the theoretical RC models are creative across many disciplines <sup>22</sup>. For example, RP among the public highly depends on the way of framing the messages, the communicator of the messages, and the manner of their communication <sup>9</sup>. RP, not a real risk, which determines the manner according to which people react to hazardous situations <sup>9</sup>. Consequently, at the beginning stage of a disease outbreak, at an individual level, people tend to rely on news media as a source of RC in order to assess risk; thus, the media affect how they construct their initial perception of the disease <sup>23</sup>. In this regard, this occurs in the presence of trust, as trust in institutions such as the government or media organizations helps reducing the complexity of and uncertainty about a particular issue <sup>23, 24</sup>.

RP poses significant challenges to RC efforts <sup>22</sup>. Understanding how individuals perceive risks is an important factor contributing to successful RC <sup>18</sup>. Faulty RP

may hinder communications as individuals may experience misunderstandings or misinterpretations of information <sup>9</sup>. On the other hand, high RP and extreme anxiety in the community may have effects on RC <sup>22</sup>. Individuals need information to make decisions and behave in ways that will best help them avoid risks and uncertainty <sup>24, 25</sup>. Nowadays, many RC activities are to change behavior or attitudes <sup>26, 27, 28</sup>. At the same time, RC can take place in a disengaged one-way manner as well as in a more engaged two-way manner <sup>18</sup>. Based on Sandman (2003) category, the risk communication in a serious pandemic is crisis communication. It is possible to regard risk communication as a means of increasing awareness, improving the knowledge or changing the behaviors as well as attitudes of engaged stakeholders, including those who have exposure, specialists and managers, those making decisions, the public population, and media, even though it has different objectives. When a crisis is experienced, communication considerably contributes to minimization of the damages and saving lives since it affects the measures taken by all individuals involved<sup>34</sup>

### **Emergence and development of risk communication for communicable diseases**

Theories and practices of risk communication were extended to the issue of communicable diseases around the mid-1990s, with initial studies building on health risk research by Covello, Paustenbach, Detlof von Winterfeldt and Slovic, amongst others <sup>29, 30</sup>. Nicoll & Murray<sup>31</sup> and Reynolds & Seeger <sup>32</sup> suggest that risk communication was accepted in the field of public health as ‘threats to health from tuberculosis, HIV, influenza, anti-microbial resistance, chemical accidents and bio-terrorism’ were recognized as not only universal but likely to be increasingly common ‘with increased movements of people, animals and goods, climate change and industrialization’<sup>31</sup>.

In an era characterized by uncertainty, rapid change and globalization, where national borders provide no barriers to the transmission of communicable diseases, and with new diseases emerging and the re-emergence of other diseases, the importance of models and guidelines for effective risk communication is clear <sup>31, 33</sup>. In addition, Reynolds & Seeger note that the perceived threat and intentional nature of an anthrax attack in the United States in 2001, followed soon after by the emergence and global spread of SARS, ‘placed significant pressure on the public health community to communicate effectively within context of immediacy, threat and high uncertainty’ <sup>32</sup>. This environment highlighted the weaknesses of the risk communication guidelines and models of the time for responding effectively to the threats to health that communicable diseases present.

### **Four Kinds of Risk Communication**

#### **Public Relations (also health education) – high-hazard, low-outrage**

- **Audience:** Apathetic and inattentive; but undefended, uninterested in talking back. Huge – most people, most of the time, on most issues.
- **Task:** To produce brief messages that reinforce whatever appeals are most likely to predispose the audience toward your goals. For serious hazards, this usually means provoking more outrage.

- **Medium:** Monologue via the mass media.
- **Barriers:** Audience inattention; audience size; media resistance; need to package everything into short sound bites; policy implications of trying to provoke outrage.
- **"Silver lining":** There is little need to listen, or to address audience concerns, reservations, or objections; this audience has few if any. <sup>34</sup>

### **Stakeholder Relations – medium-hazard, medium-outrage**

- **Audience:** Interested and attentive, but not too upset to listen: The ideal audience. but an unusual one.
- **Task:** To discuss the issues openly and rationally, explaining your views and responding to audience questions and concerns.
- **Medium:** Dialogue in person, supplemented by specialized media (web site, newsletter, etc.).
- **Barriers:** None, except perhaps the inefficiency of one-on-one dialogue. Moreover, you have to be prepared to explain the technical details; this is the only audience that really wants to hear them.
- **"Silver lining":** This is the easiest communication environment. Duplicating it is the goal of the other three kinds of risk communication. <sup>34</sup>

### **Outrage Management – low-hazard, high-outrage**

- **Audience:** Outraged, largely at you. A small group of "fanatics" is usually accompanied by a larger, less outraged watching to see how the controversy evolves.
- **Task:** To reduce audience outrage by listening, acknowledging, apologizing, sharing control and credit, etc. The controversy ends when the "fanatics" declare victory or their constituency thinks they have won enough.
- **Medium:** In-person dialogue ... in which the "audience" does most of the talking. However, journalists may also be watching.
- **Barriers:** The audience's outrage at you; your own outrage at the audience; coming to grips with the need to focus on outrage when you would really rather talk about substance.
- **"Silver lining":** At least you have their attention, though it is hostile (or at least highly skeptical) attention. <sup>34</sup>

### **Crisis Communication – high-hazard, high-outrage**

- **Audience:** Huge and very upset. In a crisis, the outrage is mostly fear and misery rather than anger; if either is unbearable, it may flip into denial or escalate into terror or depression.
- **Task:** To help the audience bear its fear and misery. Key strategies include avoiding over-reassurance, sharing dilemmas, being human and empathic, providing things to do, and acknowledging uncertainty.
- **Medium:** Monologue via the mass media, and dialogue in person to the extent possible. There is no "public" in a crisis; everyone is a stakeholder.
- **Barriers:** The stress of the crisis itself; missing the difference between crisis communication and routine public relations.

- **"Silver lining":** Though outrage is very high, it is not directed at you. Any anger at you is put aside until the crisis is past.<sup>34</sup>

### **Seven Cardinal rules of risk communication**

The seven cardinal rules of risk communication, developed by Covello and Allen (1988) <sup>35</sup>

- Accept and involve the public as a partner. The ultimate goal of the communication strategy is to produce an informed public, not to defuse public concerns or replace actions.
- Plan carefully and evaluate the outcome of the communication efforts. Different goals, audiences and media require different actions.
- Listen to the public's concerns. People often care more about trust, credibility, competence, fairness and empathy than about statistics and details.
- Be honest, frank and open. Trust and credibility are difficult to obtain; once lost, they are almost impossible to regain.
- Work with other credible sources. Conflicts and disagreements among organizations make communication with the public much more difficult.
- Meet the needs of the media. The media are usually more interested in politics than in risk, in simplicity than in complexity, and in danger than in safety.
- Speak clearly and with compassion. Never let efforts prevent acknowledgement of the tragedy of an illness, injury or death. People can understand risk information, but they may still not agree. Some people will not be satisfied.

### **Steps of Risk Communication (Moving from Concept to Application) <sup>36</sup>**

#### **Step 1: Assessment**

**Review** any existing outbreak or emergency plans within the organization. Identify existing communication capacity among organizations inside and outside government (e.g. other government departments, non-governmental and private sectors). With particular focus on:

- Language and translation capacity
- Existing information sharing networks
- Ability to communicate with hard to reach populations

**Assess capacity** of existing listening and public opinion gathering mechanisms such as media monitoring systems, public inquiry phone-in lines, or web based systems within the organization and among partner organizations, (compiling any existing community profiles of cultural, language or socio-economic data can inform communication during the first stages of an emergency, before full assessments can take place)

**Review** any international agreements, national laws or organizational policies on the public release of information.

## **Step 2: Coordination**

Together with the broader assessment activities, planning the coordination of communication among partners are among the first steps taken to build outbreak communication capacity.

### **Partner Identification**

Partners involved in an outbreak will vary based on the country, region and the nature of the problem. Each national authority has to develop its own outbreak communication partner list, which may include:

#### **Public Health Organizations**

- Regional or local health authorities including hospitals and clinics
- Medical professional associations and health sector unions
- Health sector non-governmental organizations
- Health sector international organizations including the WHO, UNICEF, International Federation of Red Cross and Red Crescent Societies

#### **Non Public Health Organizations**

- Other government ministries or agencies as those responsible for agriculture, trade, tourism, and foreign affairs
- Religious groups
- Business and industry associations
- Local political parties
- Academic and other external experts

#### **Communication Coordination Mechanisms**

To coordinate between the various partners can range from simple email updates and exchange of communication materials to joint decision-making system

## **Step 3: Transparency**

There are two aspects of transparency during an outbreak. One refers to the quality of communication; communication should be accurate, timely and easily understood. The second aspect relates to building trust by sharing information with interested members of the public and partners so they can better understand decision-making processes involved in outbreak management. Transparency in outbreak communication means that:

- **At-risk publics** are informed in an accurate, accessible and timely manner about an actual or potential health risk, including behaviors they should

adopt to avoid disease and to control infection spread, and control measures undertaken by public health authorities;

- **Public health stakeholders** not directly involved in public health emergency management decisions are given timely access to the information used to inform outbreak and emergency management planning, policy and control decisions, as well as information about relevant decision-making processes and outcomes.

### **Implementing a Transparency Strategy**

Once a transparency policy has been approved at senior levels, responsible staff then need to apply it and types of information that may be used to inform the public of what they need to do in an outbreak, as well as information used in monitoring and controlling.

#### **Responsible staff should focus on ensuring transparency for information about:**

- The incidence, spread and containment of an outbreak;
- Specific actions that need to be taken by health workers, communities, families and individuals to protect their health and control the outbreak;
- Risk assessments used by decision makers
- What is not known about an outbreak and about control measures
- Ethical considerations that may reinforce outbreak control decisions

### **Developing an Emergency Public Communication Clearance Process**

The characteristics of an outbreak – including high information demand, low information quality, potentially high political sensitivity and economic impact – mean that apparently straightforward communication tasks can overwhelm existing systems. Planning should attempt to eliminate practical barriers to the efficient and effective release of information. An accelerated information approval or clearance process can help achieve this goal.

#### **Step 4: Listening during an Outbreak**

Listening to those affected and involved is an integral part of effective outbreak communications. Through listening, communications staff and outbreak managers can learn how affected and involved citizens and organizations understand and are reacting to a disease outbreak, their perceptions of the management of the problem, levels of trust and confidence in authorities and potential behavioral, cultural or socio-economic barriers that might prevent the adoption of infection control measures. Outbreaks are accompanied by rumors and misinformation and the process of listening helps monitor rumors and to better understand how they can be countered. The information gathered through listening activities should be used to:

- **Develop communication strategies** that are consistent with social and cultural values of at-risk populations and other stakeholders
- **Involve influential people** in affected communities and stakeholder groups to identify the most effective health protection advice and solutions
- **Identify barriers to proposed outbreak** interventions and adjust interventions as needed.
- **Ensure that recommended risk reduction** behaviors are realistic, effective and culturally appropriate.
- **Evaluate the effectiveness** of outbreak communication activities.
- Given the importance of listening to effective outbreak communication, it is crucial that it be done efficiently and effectively. Active and successful listening during outbreaks must be planned for.

### Media Monitoring System

The news media remain the single most important channel for the mass dissemination of information and opinions to the public during a health emergency. Media provide crucial information for effective outbreak communications management, including:

- **Providing early warning of outbreaks:** news organizations can be an important source of information on potential outbreaks or public health emergencies.
- **Reflecting rumor and misinformation:** outbreaks are characterized by misinformation and rumors that media often pick up and circulate.
- **Monitoring public opinion and trust in the authorities:** Through their editorial and opinion columns, newspapers offer views that both form and reflect public, partners' and decision makers' opinions.
- **Based on the scale and nature of the outbreak, media** monitoring will need to adapt. Characteristics of different news sources should be factored into the media monitoring plan:
- **Regional and local news outlets:** The close ties of local reporters with their communities mean coverage in the affected communities is a crucial source of communication intelligence.
- **International media:** Even though an outbreak might be purely local, it could still make international news (as in the case of Ebola outbreaks in parts of Africa). Misinformation in the international news media can shape risk perception, especially among decision makers and partners in the economic sector.
- **New media and blogs:** The internet is a major channel of information distribution through the speed at which it can disseminate information globally, and through its diverse, alternative and often influential voices. While there are countless sites on the internet, it is recommended that tools such as search engines and other forms of internet alerts be used to "listen to" both Internet news sites, as well as influential blogs.<sup>36</sup>

## **Step 5: Communication Evaluation**

### **Communication Evaluation during an Outbreak**

Evaluation of communication strategies and efforts during an ongoing outbreak is a key next step. The basic questions that need to be answered through communication evaluation are:

- What impact are the communication interventions and activities having? For example behavior change, risk perception, societal disruption?
- Have there been changes in what people are saying and doing because of the communication interventions and activities?
- Are messages reaching the target groups and being understood?

In the midst of a crisis, evaluation can be very difficult to do as new developments can overtake and overwhelm such efforts. It is important, to establish a simple evaluation template. The communication evaluation checklist provides a list of possible evaluation questions and information sources that could potentially answer them.

### **Post Outbreak Communication Evaluation**

- Did the outbreak communication response work from existing systems and strengths and take advantage of the communications capacity and expertise of partner organizations?
- Was public communication effectively coordinated among the implicated organizations through the outbreak?
- Was information about the outbreak proactively released by the responsible authorities?
- Was ongoing public communication conducted in a transparent manner?
- Was communication tracked and evaluated during the outbreak? Were the results of such an evaluation integrated back into decision-making?
- Was a written emergency communication plan in place and was it useful in guiding the communication response?
- Is there a training and simulation program in place and will it be adapted to focus on the identified weaknesses and lessons learned of the recent outbreak?

## **Step 6: Constructing an Emergency Communication Plan**

While a plan in and of itself does not equate with preparedness, the development of a written plan helps focus the planning process and capture key elements of the previous five planning steps. A communication plan should set out the basic requirements, or infrastructure, needed to help achieve outbreak goals.

### Step 7: Training

- **Training programs** on risk communication should be conducted to build familiarity with relevant theory and practice.
- **Training exercises** such as tabletop simulations and guided discussions involving both communication staff and outbreak or emergency response management staff will help build familiarity with the requirements of effective outbreak communication
- **Those responsible for media relations** and with spokesperson responsibilities should be given opportunities to gain experience of dealing with the press by holding regular press conferences and interviews on non-emergency issues.
- **Plans should be reviewed periodically** to ensure consistency with day-to-day procedures, personnel, organizational structure and broader public health emergency planning
- **Senior management** should endorse the emergency communication plan and other outbreak communication planning activities.

### Crisis and Emergency Risk Communication (CERC) Lifecycle <sup>37</sup>

Understanding the pattern of a crisis can help communicators anticipate problems and appropriately respond. By dividing the crisis into the following phases, the communicator can anticipate the information needs of the media, agencies, organizations, and the public.

- **Pre-crisis:** Be prepared, Foster alliances, Develop consensus recommendations, Test messages.
- **Initial:** Acknowledge the event with empathy, Explain and inform the public in simplest forms, about the risk, Establish agency and spokesperson credibility, Provide emergency courses of action, including how and where to get more information, Commit to stakeholders and the public to continue communication.
- **Maintenance:** Help the public more accurately understand its own risks. Provide background and encompassing information to those who need it. Gain understanding and support for response and recovery plans. Listen to stakeholder and audience feedback, and correct misinformation. Explain emergency recommendations. Empower risk/benefit decision-making.
- **Resolution:** Improve appropriate public response in future similar emergencies through education. honestly examine problems and mishaps, and then reinforce what worked in the recovery and response efforts. Persuade the public to support public policy and resource allocation to the problem. Promote the activities and capabilities of the agency, including reinforcing its corporate identity, both internally and externally.
- **Evaluation:** Evaluate communication plan performance. Document lessons learned. Determine specific actions to improve crisis systems or the crisis plan.

## **The six Principles of Crisis and Emergency Risk Communications (CERC)**

The Centers for Disease Control's (CDC) Crisis and Emergency Risk Communication (CERC) provides an evidence-based framework and best practices for anyone who communicates on behalf of an organization responding to a public health emergency.<sup>38</sup> CERC is built around psychological and communication sciences, studies in the field of issues management, and lessons learned from emergency responses. Emergencies can assault communities in an instant. Hurricanes, chemical releases, bombs, pandemic illness, and earthquakes are just some of the emergencies that we know could threaten any community at any time. Often, communicating information is the first and only resource available for responders to give affected communities at the onset of an emergency. Through effective communication, we can know how our community responds to and recovers from these potentially devastating emergencies. When a crisis occurs, even if anticipated, initiating a full response can take time. The situation must be assessed and monitored for emerging, resources must be allocated, and personnel and materials must overcome any logistical or safety barriers to getting into the affected area. The CERC framework and its principles can help you provide the public with information to make the best decisions and to accept the imperfect nature of choice, under incredibly challenging time constraints.

### **The Six Principles of CERC <sup>39</sup>**

- **Be First:** Crises are time-sensitive. Communicating information quickly is crucial. For members of the public, the first source of information often becomes the preferred source.
- **Be Right:** Accuracy establishes credibility. Information can include what is known, what is not known, and what is being done to fill in the gaps.
- **Be Credible:** Honesty and truthfulness should not be compromised during crises.
- **Express Empathy:** Crises create harm, and the suffering should be acknowledged in words. Addressing what people are feeling, and the challenges they face, builds trust and rapport.
- **Promote Action:** Giving people meaningful things to do calms anxiety, helps restore order, and promotes some sense of control.<sup>40</sup>
- **Show Respect:** Respectful communication is particularly important when people feel vulnerable. Respectful communication promotes cooperation and rapport.

Fully integrating CERC helps ensure that limited resources are managed well and can do the most good at every phase of an emergency response.

### **Benefits of Risk Communication**

The right message from the right person at the right time can save lives. RC aims to provide people with the information they need to make lifesaving decisions in critical situations. RC principles are vital to helping people cope and begin to rebuild. The right communication helps to bring a sense of order and understanding to otherwise chaotic situations. Good communication enables organizations to fulfill their mission, maintain public trust, manage limited

resources, and most of all, prevent and reduce illnesses and injuries. Throughout every step of an effective response, be first, be right, be credible, express empathy, promote action, and show respect<sup>39</sup>.

### **Barriers to risk communication**

Effectively communicating about risks to public health often involves overcoming a series of barriers, but there are few articles in peer-reviewed scientific journals on this topic.

### **Three overlapping categories of barriers to effective communication: <sup>41</sup>**

**Access to information; Risk communication process; and general contextual issues.** The first two include institutional and procedural barriers that can limit communication within the risk analysis process. Communication barriers in the third category apply to all contexts, and especially to efforts by the expert community to communicate with the general public and other interested parties about health risks. A paper from the European Policy Centre on improving the quality of risk communication in the European Union<sup>42</sup> lists a number of key factors acting as barriers to effective risk communication:

- **Internal culture:** In many governments, risk assessment and risk management are strongly science-based. As a result, information about hazards and risks tends to be framed in a scientific context. Moreover, risk managers and stakeholders are not involved in the risk assessment process. There is a tendency to develop policy decisions using partial information from a limited group of scientists or “interest groups”. Transparency and accountability are limited.
- **Internal competencies:** Few experts, public officials and politicians have the necessary competence in risk communication techniques.
- **Limited understanding of risk based issues by decision makers:** Many decision-makers are unfamiliar with the risk assessment process, including differences between “hazard” (the potentially dangerous property of a substance) and “risk” (the probable impact of the hazard, taking account of the properties of the hazard, exposure, and usage). Many are also unfamiliar with the regulatory and non-regulatory tools used for managing risks. Moreover, many decision-makers and even some policy-makers have limited knowledge of science and technology, and of “good practice” in the management of hazardous situations.
- **The unintended consequences of risk management decisions:** The “risk-risk paradigm” is little understood despite its considerable importance for the effective management and communication of risk.
- **Different types of risk debate:** There are different types of risk. The public is familiar with some types of risk, while it is unfamiliar with other types. Some risks have a high degree of uncertainty, while others have a high degree of certainty. The public may generally accept some risks and may be hostile to others.
- **Changing nature of information:** Policy-makers and decision-makers now receive information about risks from a wide range of sources, including government, interest groups, and business. The range of sources of

information available to citizens has also expanded dramatically in the last 30 years.

- **Lack of control over risks:** The development of more sensitive technologies and more sophisticated scientific methods have reduced the likelihood that citizens can, evaluate or experience the impact of hazards and thus manage risks themselves.
- **Differentiation of response to hazards and risks:** Individual decision-makers (and different social and cultural groups within society) may respond in different ways to the same risks and risk communication information.
- **Social amplification of risk:** Involvement of the media and civil society in risk communication can affect the perceptions of decision-makers (and the public) and their response to risk-related events.

### **Risk communication in COVID-19 pandemic as an example**

COVID-19 is more than a health crisis; it is also an information and socio-economic crisis. The pandemic and the associated response are prompting the deepest global recession in nearly a century and pushing an estimated 70-100 million more people into extreme poverty<sup>43</sup>. The United Nations Emergency Relief Coordinator has warned that without action, 270 million people will face starvation by the end of the year<sup>44</sup>. Until biomedical tools such as vaccines or treatments are widely available, people's behaviors and their willingness to follow public health and social measures remain the most powerful weapons to stop the spread of the virus. Consequently, there is an unprecedented need to elevate the role risk communication and community engagement (RCCE) plays in breaking the chains of transmission and mitigating the impact of the pandemic. Analysis of socio-behavioral data shows some broad trends. In general, people know about COVID-19 and the preventive measures necessary. However, people are becoming complacent and risk perceptions are lowering. In general, people are feeling less confident in what they can do to control the virus. As the pandemic becomes more protracted, pandemic fatigue is increasing. The growing fatigue, the stress caused by uncertainty, lowering risk perceptions and reducing trust in government responses, is taking its toll on the fabric of our communities<sup>45</sup>. Risk communication and community engagement are integral to the success of responses to health emergencies. In the case of COVID-19 effective and coordinated RCCE can help break the chains of transmission and mitigate the impacts of the pandemic. Uptake of protective behaviors and adherence to social measures will continue to be critical even with safe and effective vaccines and treatments<sup>45</sup>.

### **Risk communication and community engagement should be <sup>46</sup>**

- **NATIONALLY-LED** by governments, supported by civil society and communities
- **COMMUNITY-CENTRED** working with their knowledge, capacities, and vulnerabilities
- **PARTICIPATORY** enabling community-led responses
- **NURTURING TRUST** as the critical component of the COVID-19 response

- **OPEN AND TRANSPARENT** about knowns/unknowns, uncertainty, and mistakes
- **INFORMED BY DATA** about the community needs, issues and perceptions
- **INTEGRATED** as a foundational approach for the entire response
- **COORDINATED** to avoid duplication and gaps, and increase impact
- **INCLUSIVE** of all vulnerable and marginalized groups
- **ACCOUNTABLE** to the affected communities

### **Challenges, opportunities and lessons learned from infectious disease outbreaks, as well as COVID-19 pandemic**

- **Uncertainty:** this can lead to fear, panic and a loss of trust.<sup>47</sup> Clear, consistent and coordinated communications, which acknowledge this uncertainty and outline what is known and unknown can help mitigate the impact of uncertainty.
- **Pandemic fatigue:** Pandemic fatigue<sup>48</sup> will likely increase as the crisis becomes increasingly protracted. More data and better understanding of people's behaviors in this phase of the pandemic are needed to quantify the impacts of pandemic fatigue. For example, pandemic fatigue may decrease the number of people following recommendations and restrictions. It may also decrease their effort to stay informed about the pandemic and it may decrease their risk perceptions related to COVID-19. Identifying creative and engaging ways to motivate people by collaborating with civil society, community groups, community leaders and influencers is one of the strategies that could increase motivation and likely adherence.
- **Trust:** Community trust will be vital in ending disease outbreaks.<sup>49</sup> Understanding the root causes of mistrust, and how the pandemic has affected the local dynamics of trust, is key to creating strategies to build and maintain trust. Building trust requires deliberate and sustained community engagement. This engagement must be grounded in evidence based, open communications from trusted sources and be able to react effectively to community feedback.<sup>50</sup>
- **Community Engagement:** Engaging communities, both physically and virtually, will help mitigate the increasing politicization of the pandemic response. WHO's Director General warned "the politicization of the pandemic has exacerbated it".<sup>51</sup> using the pandemic and the associated response as a political opportunity could be expected to increase as the economic impacts of the pandemic increase. Conflicting messages and recommendations from leaders create confusion, which can reduce the uptake of public health recommendations. Engaging communities to answer their questions and concerns with scientifically grounded, politically neutral information can minimize that impact. Information should be presented in accessible formats, in languages the community understands, via channels they prefer, and using sources, they trust.
- **Coordination:** Investments in coordinated community engagement approaches will be crucial to increase demand for testing, treatments and vaccines. As new, biomedical tools will progressively hit the market, it will be critical to support their uptake but also fight satisfaction and continue to promote the full set of solutions available, including behavioral ones

(masks, distancing, hand washing, etc.) in order to end the pandemic. The future COVID-19 vaccines will be the center of attention. Strong RCCE will be needed to accompany their rollout, anticipating rumors and misinformation, but also adjusting to the many factors still unknown when it comes to vaccination priorities, strategies and effects, in different contexts. There is also the potential for anti-vaccination movements to tie any COVID-19 vaccine development to other vaccinations, potentially increasing hesitancy around existing routine immunization.

- **Stigma and Discrimination:** Reducing COVID-19 stigma and discrimination is crucial to protecting the most vulnerable, including health workers. Stigma leads to people hiding symptoms, refusing to be tested or delaying seeking medical care. This inaction potentially contributes to rising infections and deaths. Engaging communities is an important way to show that using negative language can further fuel stigma and discrimination. Governments, citizens, media, key influencers and communities have an important role to play in preventing and stopping stigma.<sup>52</sup>
- **Misinformation:** coordinated efforts to tackle misinformation will be essential to control the virus. Misinformation can harm people's physical and mental health, increase stigmatization, threaten precious health gains, and lead to poor observance of public health recommendations. This reduces the effectiveness of those measures and endangers countries' abilities to respond effectively to the pandemic.
- **Economic pressure:** Increasing economic pressure will force people to take greater risks. People may be forced to choose between following public health and social measures, and making enough money to survive. RCCE can create opportunities for those who are economically vulnerable to identify locally appropriate responses to COVID-19 risks that reflect their economic and social contexts.

### **The situation of Risk Communication in Egypt during COVID-19 pandemic**<sup>53</sup>

**United Nations Population Fund (UNFPA)**, along with other UN agencies, supported the Ministry of Health and Population, to design a rapid assessment tool to support risk communication, community engagement efforts against COVID-19. The efforts are directed to prepare and protect individuals, families and the public's health during early response to COVID-19. The tool collects the existing information and conducts rapid qualitative and quantitative assessments to learn about the communities (knowledge, attitudes and perceptions about COVID-19, most at risk population, communication patterns and channels, language, religion, influencers, health services and situation). Other UN agencies included the WHO, UNICEF, UN Women. To date, the survey reached 23,146 respondents and is still ongoing.

### **Risk communication, community engagement efforts against COVID-19 in Egypt include**

**UNFPA and its partners launched an awareness campaign** featuring 12 doctors from different specializations to raise awareness on protection against the COVID-19 outbreak. The National Council organizes the campaign for Women in cooperation with the Ministry of Health and Population, UNFPA, the World Health

Organization, and with the support of the Italian Agency for Development Cooperation. Extra News and Egypt Today sponsor the campaign. The campaign includes 12 videos featuring 12 different doctors, offering different tips to protect prevent and respond to the COVID-19 outbreak. The videos include medical advice targeting pregnant women, cancer and heart patients. The videos are being broadcast on television as well as posted on UNFPA's social media channels, where it reached over 3 million viewers.

**Due to the need for social distancing as a measure to curb the spread of COVID-19, outreach workers have replaced door-to-door visits to households with phone calls**, to avoid the disruption of awareness-raising activities affiliated with the Takaful program. The outreach workers are now resorting to using the phone to disseminate awareness messages on family planning, as well as protection and prevention measures against COVID-19. An estimated 50,000 women have been reached so far with these messages over the phone. The Ministry of Social Solidarity conducts the Takaful program. **UNFPA organized several activities, using the potential of young people** in its response to COVID-19. As part of the activities linked to the Population Awareness Clubs, implemented in cooperation with the Ministry of Youth and Sports and Etijah - Youth and Development Consultancy Institute, UNFPA held online seminars raising awareness on the human immune system and ways to boost it. The online seminars are conducted on a biweekly basis and have so far reached 800 young people. **Social media campaigns reach over 8 million viewers** capitalizing on its online following, UNFPA launched several online campaigns on its social media platforms, in partnership with WHO and the Ministry of Health and Population. UNFPA also teamed up with several celebrities, including actors, singers and social media influencers, to amplify messages around the stigma associated with COVID-19. Over 15 celebrities participated, raising awareness about the root of the stigma and highlighting that it may prevent patients from seeking treatment. The video reached over 4 million viewers in one week.

#### **Risk Communication And Community Engagement (RCCE) in Egypt: <sup>54</sup>**

**UNICEF** is engaging with children, parents, service providers, communities and larger population in the response to COVID-19 to develop inclusive RCCE plans and strategies working closely with affected communities to promote behaviors favoring pandemic prevention and response to its secondary impacts. UNICEF in Egypt is:

- **Co-leading** the National Response's Risk Communication and Community Engagement pillar in coordination with the Ministry of Health and Population and WHO.
- **Developing multimedia productions** on COVID-19 to counter the abundant misinformation about the disease and to engage and address the needs of children, parents, and women, including pregnant and lactating women.
- **Working with the government on using the RapidPro application** to communicate with, and collect policy-relevant real-time data from the most vulnerable households in a time of crisis.

- **Engaging youth networks and influencers**, including media networks and private sector, in peer-to-peer and community engagement activities to support children and families' resilience during COVID 19.

### **Funding**

No funding sources.

### **Competing interests**

None declared.

### **Ethical approval**

Not required.

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