STAMINA

Demonstration of intelligence decision support for pandemic crisis prediction and management within and across European borders.

D5.2 – Guidelines on risk communication principles implementation

[WP5 – STAMINA Decision Support Toolset development]

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Abstract

This document contains an analysis of the factors, elements, structure and agents involved in communication in risk situations within an organization. The document includes a series of examples of communication in risk situations from literature that serve to highlight good practices and practices to be avoided. D5.2 presents an overview of the procedures commonly used by organizations, and some quotations about practical communication situations derived from the COVID-19 pandemic and other risk situations.

Finally, the document establishes a series of Guidelines on Risk Communication Principles that can be used by the project stakeholders when implementing communication strategies during a pandemic. In addition, these guidelines can be considered both for the improvement of the STAMINA solutions and for the development of the project trials.

Executive summary

This document is a key piece for partners, stakeholders and interested organizations to know the state of the art of communication in pandemic situations. The purpose is to review the possible gaps in risk communication with the public and between organisations that are unique to pandemics, explore various media and practices for risk communication, and propose a series of guidelines to improve the implementation of this type of communication.

First, the document offers a review of the concept of risk communication, its goals and its different modes and media of implementation and public engagement.

Subsequent sections detail the risk detection process and its classification. When talking about risks, we will focus on those that, whether or not they belong to the communication process, are relevant to it. It follows with general practices often encountered around the organization of the personnel tasked with communicating in pandemic situations, the design of the response processes and related materials, and their appropriate dissemination in different channels. Discussions around the effectiveness of these processes are also included.

Finally, the document includes a set of guidelines and good practices based on both the literature and the experience of the organizations involved in the project. In this series of guidelines, emphasis is placed on the main concerns of organizations in the current context, distributed in the following categories:

• General best practices from previous pandemics
• Effective communication on different media
• Effective listening / dialogue
• Building trust
• Engaging misinformation
• Vulnerable community specific lessons learned

The challenges are enormous and the context of the latest COVID-19 pandemic has raised both new ways of approaching risk communication with the public and the need for innovative tools to help the personnel involved in it. It also demonstrated viscerally the consequences of getting risk communication wrong. Working in light of these lessons, the document includes a section defining some points where the project tools can be useful for better understanding risk communication needs and effects, and some priority lines of work for the future.

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List of acronyms/abbreviations

Abbreviation	Explanation
SEO	Search Engine optimization, it is the set of optimization strategies and techniques that are made in a web page so that it appears organically in Internet search engines
OECD	Organisation for Economic Co-operation and development
WHO	World Health Organisation
ECDC	European Center for Disease Prevention and Control
WSMA	Web and Social Media Analytics (STAMINA tool)
ERC	Emergency Risk Communication
EMT	Emergency Map Tool (STAMINA tool)
PPT	Preparedness Pandemic Tool (STAMINA tool)

Table 1 "List of acronyms/abbreviations"

Glossary of terms

Term	Explanation
Risk Communication	Communication aimed at modifying a habit or behaviour, in the face of a real or potential risk that occurs or may occur

Trolls	People who deliberately provoke others online by saying inflammatory and offensive things
Fake news	Is false or misleading information presented as news. It often has the aim of damaging the reputation of a person or entity, or making money through advertising revenue
Virtual community	A group of people who exchange words and ideas through the mediation of digital networks
Early Warning Systems	The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss
Social Media Sentiment	Is the attitude and feelings people have about an organisation or a subject or a content on social media
Reputational Crisis	A major event that has the potential to threaten collective perceptions and estimations held by all relevant stakeholders of an organization and its relevant attributes.
Trial	The process of testing some of the procedures and tools developed in the project over a period of time and a certain condition
Particular trust	The degree to which we trust our 'ingroup' e.g., friends, family, colleagues, neighbours our 'outgroup' e.g., strangers or the wider community
Social trust	The degree to which we trust our 'outgroup' e.g., strangers or the wider community
Institutional trust	Public confidence in core institutions of the polity: health services, medical professionals, government, politicians, etc.

Table 2 "Glossary of terms"

1. Introduction

1.1 The STAMINA Project

Infectious diseases have the potential to result in serious cross-border public health threats. Management of this type of crisis remains a serious challenge due to the number of people involved, the different legal, administrative, professional and political cultures, and the lack of transboundary crisis management infrastructures.

STAMINA helps to overcome these challenges by providing improved decision-making technology to pandemic crisis management practitioners at a regional, national, European level and also cross-European borders including Tunisia and Turkey.

The project targets two stages of the emergency management cycle: Preparedness and Response.

The STAMINA solution provides national planners, regional crisis management agencies, first responders and citizens with new tools as well as a clear guide to how they can be used in line with international standards and legislation.

The STAMINA vision has been designed through a user perspective, with five main objectives:

- Create a set of guidelines and best practices to improve preparedness and response.
- Provide stakeholders with novel, easy-to-use software tools that complement EU-level systems.
- Increase diagnostic capability.
- Improve cooperation between and within the EU Member States and neighbouring countries.
- Ensure the sustainability of the STAMINA solution.

1.2 Scope and Objective of the Document

As mentioned before, a set of objectives of STAMINA project aims at creating a set of guidelines and best practices to improve preparedness and response.

Pillar 1: Formulate an inventory of best practices and guidelines to improve preparedness and response
- **O1.1**: Perform and extensive gap analysis in exiting preparedness and response plans and relevant legacy systems
- **O1.2**: Execute a legal gap analysis on a national and EU level
- **O1.3**: Study human behaviours that allow outbreaks to spread and define guidelines on public trust monitoring and correct implementation of risk communication principles.

This document, which within the specific objectives, focuses on addressing the aforementioned O1.3 and takes a look at the factors that condition proper communication in pandemic risk situations. On the other hand, the document includes a review of the elements and structures that the communication teams of different organizations must consider in this type of situation.

Finally, a series of guidelines are included that either from the literature or from practical experience from different organisations have been determined as cases to be replicated or avoided in order to achieve a greater impact on this type of communication.

This collection of guidelines and procedures are undoubtedly of valuable use when developing and training the WSMA Social media tool within the project scope. The team in charge of the elaboration of this document collaborates in parallel in the development of this tool and in its integration in the different trials of the project in such a way that it contains recommendations in both ways from and to the end users.

Without losing focus on the viruses and pathogens that STAMINA focuses on, such as Influenza, West Nile, Measles, E.coli and COVID-19, the document also provides references outside this scope. In some cases, examples related to outbreaks of Ebola, Zika or H1N1 are introduced since some of them provide valuable information on the management of communication.

1.3 Relation with other Deliverables and Tasks

The Measurable outcomes expected for MS4 of the project are:

AS-IS Assessment and GAP analysis (D2.1), Report on gaps in national legislation supporting pandemic policy measures (D2.3), Guidelines on risk communication principles implementation (D5.2), STAMINA best practices and recommendation hand book (D9.5)

Milestone	Objective	WP	Deliverables
MS4	Demonstrations evaluation and EU policy recommendations	WP7, WP8, WP9	D5.2, D7.1, D8.2.3, D9.5

Table 3 "Milestone 4"

In the context of WP5, besides releasing the Real-time web and social media analytics tool, T5.3 produces D5.2 which will serve as input for a relevant chapter in the D9.5 STAMINA Best practices and recommendations handbook, output of Task 9.4.

2. Defining Risk Communication

Risk communication is defined as communication aimed at modifying a habit or behaviour, in the face of a real or potential risk that occurs or may occur. Generally, it seeks to produce perception and assessment of risk to modify situations that can be avoided.[1]

Communication, therefore, must seek an eminently practical, informative and preventive purpose. Since good communication is itself another form of intervention, just like sending or managing resources in the event of a risk. This communication must be carried out in such a way that it includes active listening to know if the message and the informant connect with the audience.

2.1 Goals of communicating risk to public

The objective within public organizations when facing a risk or crisis is to guarantee a real, effective, practical and understandable dissemination of information for the entire population. The aim of communication is to, through collective understanding and actions of the public, minimize the risks to which they are, or could be, exposed. As part of this, risk communication needs to build trust in government decisions, and to help ensure decisions by public authorities are representative of their communities' needs, vulnerabilities, and perceptions of risk. These risks can be in addition linked to misinformation, fake news, pseudoscience, destabilizing, anti-establishment, etc. This is a scourge of our era that organisations must face forcefully with values, information and closeness to the entities that are in charge of tackling the misinformation or those profiles that are contributing to a crisis, foreseeable or initiated.

For example, in the case of COVID-19, risk communication is being used to achieve several objectives:
- Establish trust in information, response efforts, and leaders
- Build public awareness and knowledge of COVID-19 and response efforts
- Increase public motivation to participate in response efforts
- Avoiding the stigmatisation of different communities or groups of people.

Organisations have different approaches and priorities regarding risk communication strategies and how this differs to crisis communication. This can be demonstrated by sampling definitions of risk communication in health emergencies from national and international institutions:

Organisation	Risk Communication Definition	Goals of Messaging	Source
CERC (CDC)	Provide the community with information about the specific type (good or bad) and	Explain, persuade and empower decision-making.	Centers for Disease Control and Prevention (2018). Crisis and Emergency Risk Communication

	magnitude (strong or weak) of an outcome from an exposure or behaviour.		(CERC). New York: Centers for Disease Control and Prevention.
WHO	Real-time exchange of information, advice and opinions between experts, community leaders, officials and the people who are at risk. Allows people at risk to understand and adopt protective behaviours.	Encourage informed decision making, positive behaviour change and the maintenance of trust.	World Health Organisation (2017). Communicating risk in public health emergencies: a WHO guideline for emergency risk communication (ERC) policy and practice. Geneva: World Health Organisation.
ECDC	A sustained communication process established with a diverse audience about the likely outcomes of health and behavioural attitudes.	Engage communities in discussions about environmental and health-related risks to create public understanding about their outcomes and approaches to deal with them.	European Centre for Disease and Prevention Control (2020) Risk Communication. Retrieved on 8 September 2021 from <https://www.ecdc.europa.eu/en/health-communication/risk-communication>
IFRC (International Federation Red Cross)	The processes and approaches to systematically engage and communicate with people and communities to encourage and enable communities to promote healthy behaviours and prevent the spread of infectious diseases.	Asking people what they know, want and need, and involving them in designing and delivering related services and prevention approaches	https://www.communityengagementhub.org/wp-content/uploads/sites/2/2020/02/IFRC-nCov-RCCE-Guide-0202.pdf

Table 4 "Examples of Risk communication approaches by organisation"

A pandemic is generally defined as having three phases: preparedness; response; and recovery. It is important that risk communication is considered at each of these stages as part of a dynamic process, responsive to the development of a crisis. According to the Pan-American Health Organisation, a risk communication plan, guidelines, training and other activities should begin in the preparedness stage, along with establishing a crisis emergency response team involving a communication expert. Established route, media, and interactions via preparedness communication activities are vital to the success of communication during response and recovery, as they build both public trust and knowledge about public understanding of the risks that can inform communication practices.[2]

Risk communication during the response phase will vary based on the stage of the pandemic and the availability of information to experts, and the recovery phase will build on the lessons learned during the current pandemic to better prepare the next one. Furthermore, members of the community (i.e., religious leaders, representatives from community-based organisations, etc.) need to be involved in the decision-making process during the preparedness and response stage as they will provide two-way communication and engage in active listening.[3]

The WHO Guidelines on Emergency Risk Communication (ERC) was published in 2017 to guide policy- and decision-makers responsible for managing public health emergencies, and for practitioners who issue risk communication before, during and after health emergencies.[4] Based on the evidence reviewed there was a series of best practice statements and recommendations developed. Some of the following things that should be considered in ERC planning:

- Need to collaborate (health agencies, emergency systems, public services) and establish communication networks in preparation for events.
- Should include training/information updates for communications personnel and mechanisms for obtaining initial rapid situation assessments.
- Include pre-positioning of communication resources/materials, including core messages, information (e.g. factsheets) and discussion content.
- Mechanisms for monitoring and assessing the effectiveness of messages and adjusting them as necessary.

Pandemics call for different messaging objectives than general public health communication on topics such as smoking or nutrition. The WHO define the core elements of pandemic influenza communication as:

- To maintain and build public trust in public health authorities before, during and after an influenza pandemic.
- To support coordination and the efficient use of limited resources among local, regional, national and international public health partners.
- To provide relevant public health information to the public; to support vulnerable populations having the information they need to make well-informed decisions.
- To take appropriate actions to protect their health and safety.
- To minimize social and economic disruption.[5]

The Bellagio Principles emphasise the importance of providing information that is readily accessible, accurate, up-to-date, and easily understood. This should include information on the pandemic, public policy responses, and appropriate individual and local actions. Further, communications should be tailored to overcome obstacles that disadvantaged or vulnerable groups face in accessing such information.[6] Tetteh (2020) suggests three key questions and corollary objectives that leaders or organisations can use to help structure communications in a clear way during a crisis and use to tailor to specific groups:

- What happened? (To increase knowledge and understanding)
- What is being done about it? (To enhance trust and credibility)
- What does it mean for you? (To minimise the negative impacts of fear and concern).[7]

These questions are of particular use when recasting the scale of communications from a national to local level. The framework provides the opportunity to inform the public of the situation, explain what is being done and instil trust and inform the public of their personal risk, which can be tailored depending on the audience.

It is also important that risk communication is responsive to specific requirements posed by each stage of a pandemic. Recommendations collated from WHO and CDC advice regarding communication objectives throughout the different stages of a pandemic are as follows:

Preparedness

- Identify, meet, plan and coordinate with your partners, existing community networks and government counterparts.
- Conduct needs assessments.
- Develop training and messaging plans for emergency situations.

Response

- Relay the threat, identify what is being done about it and acknowledge uncertainty.
- Inform the public about their risk in a clear and simple way.
- Present information from credible sources.
- Provide mitigation measures or emergency actions.
- Coordinate messages with other agencies and build a positive relationship with the target audience.[8]

2.1.1 Sharing information

The information shared must be appropriate to the channel, the target audience, and their perceptions and experiences of risk. Depending on these channels, informative texts, infographics, short videos, etc. could be used. In addition to the channel used, it should always be taken into consideration that the information is clear, concise and fully understandable for the entire public.

In several occasions, the target audience can be identified or determined from an early stage. But, during the development of the communication or afterwards, other specific audience segments can be identified. In addition, it could be detected that the desired

audience has not been conveniently reached and therefore, strategy, communication style or resources used must be reformulated.

In the case of the COVID-19 crisis, many audiences that needed specific risk communication plans, separate from the mainstream, were not identified until much later on (even after vaccine roll out showed they were being missed).

2.1.2 Monitoring

In order to be able to objectively analyse whether what was intended has been achieved, or to detect new demands, all the information emanating from this communication must be monitored both in real time and with aggregated data. Among this data can be gathered feedback from recipients, demands, emerging sub-topics, interactions, comments, profiles of the people who have intervened, etc.

There are different tools for this purpose. As an example, Figure 1 shows the tool used by the Spanish Red Cross to analyse the discourse in digital media in which the organisation can analyse the interaction with users, their profiles, the feeling that the person has based on the words used or the sociodemographic profile, among other aspects.
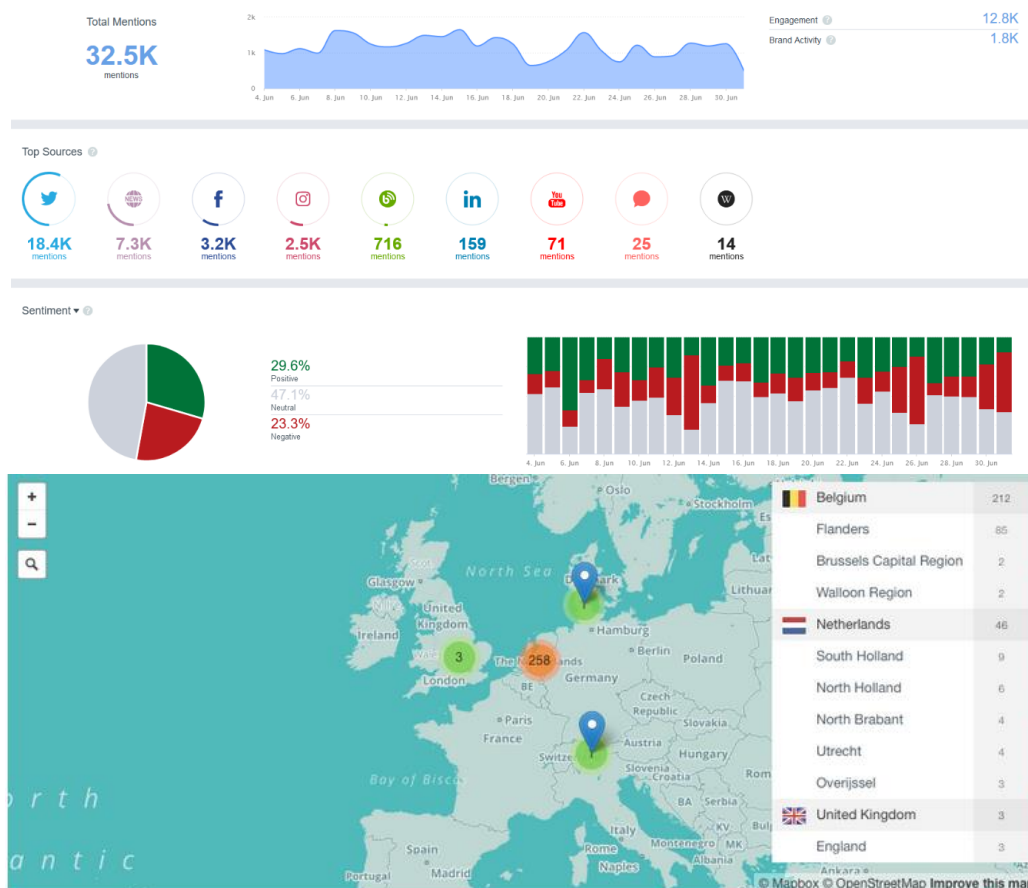

Figure 1 "Social Discourse Analytics Tool"

2.1.3 Building trust and assuaging fear

As mentioned in previous sections, achieving trust and credibility by the target population in order to effectively disseminate our message is one of the main objectives of the communication strategy in risk situations for most organisations. This trust is something that must be built from the phases prior to the unleashing of risk. In addition, this confidence must be monitored frequently to know its level and design improvement strategies.

To put ourselves in context, the steps we are following to achieve the proposed goals can be structured as follows:

1. We need to share information using our prior knowledge to try to reach each population segment in the most effective way
2. We need to understand how audiences engage with that. Monitoring strategies are currently the best way to achieve this objective
3. We need to bring these two previous actions together to assess trust and fear and modify messages accordingly
4. We have to focus on sustaining community relations and ensuring public action.
5. After the crisis ends, we must evaluate our strategy and obtain a series of lessons learned that will allow us to face future situations with better capacities.

The best way to build trust and calm fear is that the population be willing to take as a reference the organization or organizations that are communicating. They must build an unequivocal reputation for being valid spokespeople for the entire community they govern support and pandemic decision-making process on a daily basis. And not only as spokespeople, but as a "helping hand" who is there to help without further ends. Assuming this role, emanating truthful, consensual and clear information and interacting with the population.

The organization has to follow and take care of this line of work day by day in a clear, unequal manner and having a clear role and goals. Therefore, when the moment of crisis arrives, the population and other organizations know who is speaking to them, with whom to consult in case of doubts and misinformation, and what response they will find. That is, they have to be sure that this organization responds, both in time and form, and releases useful information. Either for getting first-hand truthful information or to contrast information that may be false as well as to share this information with their family and friends.

Although it is true that this reputation can be earned at the time of crisis, it is preferable to earn it day by day. It is important to already have the basis of being a reference and, in addition, to contribute daily to the challenge that is required or, making publications of interest.

To be most effective, trust should exist in a society prior to a crisis so that well established networks can be drawn upon.[9]

Trust is a fragile relationship that can take years to build and only moments to break. Its precarious nature urges the importance of having a stable foundation in place for the expedient acceptance of response measures in an emergency situation.

For example, when facing an outbreak, the most critical objective is to build, maintain, or restore public trust in those responsible for managing the outbreak and issuing information about it. This primary importance of trust was found to be true across cultures, political systems, and levels of economic development. [11]

Trust derives from public perceptions of the motives, honesty, and competence of authorities. Public confidence that a government or agency is acting first and foremost to safeguard health will influence compliance with recommended control measures and thus hasten outbreak containment. Trust in the honesty of authorities and confidence that no disconcerting facts are being downplayed or concealed reduces public anxiety during the inevitable uncertainties of an outbreak. Confidence that the authorities are competent and in control further helps prevent reactions that exacerbate an outbreak's social and economic impact. [10]

Devine et al. propose that trust affects governing during a pandemic, with particular impact on policy implementation, public compliance, mortality rates, risk perception and trust itself.[11] Public trust is therefore crucial towards securing widespread cooperation and sustaining the behaviours necessary for pandemic management. Trust should underpin preparedness and response measures in order to connect the 'seemingly disparate components of the modern public health landscape'.[12] Although it is not easily quantified, the advances in tools that allow the monitoring of the different communication channels are making it possible to track. The literature identifies a range of factors that act as identifiable features in order to help transpose it from the abstract to the tangible.

The OECD propose responsiveness, reliability, integrity, openness and fairness.[13] The Institute for Public Relations suggest integrity/competence/credibility, satisfaction, commitment, control mutuality, communal and exchange relationships.[14]

Peters, Covello, and McCallum suggest that perceptions of knowledge and expertise, openness and honest and concern and care provide indicators of trust.[15]

There is a certain amount of overlap in these factors that allows for a general framework of trust to be generated, one which emphasises transparency, integrity, and exchange relationships.

Organisation/Academic	Features of Trust	Source
Organisation for Economic Co-operation and Development	- Responsiveness - Reliability - Integrity - Openness - Fairness	OECD and The Korea Development Institute (2018). Trust Matters in Governance. In OECD and Korea Development Institute (Eds.), Understanding the Drivers of Trust in Government

		Institutions in Korea. Paris: OECD Publishing.
Institute for Public Relations	• Integrity • Competence • Credibility • Satisfaction • Commitment • Control Mutuality • Communal Relationships • Exchange Relationships	Katie Delahaye Paine (2016) Guidelines for Measuring Trust in Organizations. Retrieved on 3 August 2021 from <https://instituteforpr.org/guidelines-for-measuring-trust-in-organizations-2/>.
Peters, Covello, and McCallum	• Perceptions of knowledge and expertise • Perceptions of openness and honesty • Perceptions of concern and care	Richard Peters, Vincent Covello and David McCallum (1997). The determinants of trust and credibility in environmental risk communication: an empirical study. Risk Analysis, 17(1), (pp. 43–54).

Table 5 "Features of trust by organisation"

Trust constitutes a complex and sensitive ecosystem of relationships, a system which is accentuated and severely tested in a crisis. It can be distilled into different indices, all of which act and work differently between different social networks. Social trust the belief that others will look after our interests and not cause us harm. Studies have introduced two types of social trust: particular trust (the degree to which we trust our 'ingroup' e.g., friends, family, colleagues, neighbours) and general trust (our 'outgroup' e.g., strangers or the wider community)….[16]

Category	Definition
Particular trust	• Particularised trust refers to trust in people we know or who are like us: 'ingroup' trust.
General trust	• Trust in those we are not readily familiar with, such as strangers or the wider community.
Institutional trust	• Public confidence in core institutions of the polity: health services, medical professionals, government, politicians, etc.

Table 6 "Categories of trust"

In societies with a high level of social trust, people expect others to behave reciprocally for common benefit. Types of social trust are based on interpersonal networks and social interactions. It can therefore prove more difficult for high-trust societies to follow social distancing or periods of isolation due to their higher reliance on social exchanges, which can cause these communities to have lower risk perception and higher rates of transmission.[17]

Alternatively, feeling that others in the community do not adhere to public health measures could reduce one's own level of adherence.[18] The connection between social trust and citizen responses to the pandemic cannot be ignored when designing risk communication. The strength of particular and general trust in each given society should be considered to anticipate and understand the public's behaviour and what specific messaging may be needed.

Trust in institutions is defined by the strength of public confidence in core institutions of the polity: the government, politicians, health services, medical professionals, etc.[19] Trust in public health officials and the information they provide is essential for the widespread uptake and effectiveness of preventative strategies to reduce the transmission of communicable diseases. Institutional trust can therefore act as a protective measure against infection. Earle and Cvetkovich argue that if people do not trust an organisation or institution, any associated negative information to do with them reinforces their distrust, whereas positive information is disregarded.[20]

In essence, '**no matter how well thought through and well packaged information might be, it will not communicate risk effectively if trust and credibility are not established first**'.[21]

In some cases, individuals with a high trust in government form lower risk perceptions but – conversely – higher risk perceptions when they are less trusting of science and medical institutions or professionals.[22] Equally, there is evidence that trust is related to higher rates of compliance and lower mortality rates.[23] Remaining aware of this dichotomy is key when designing risk communication to provide the public with an appropriate understanding of the threat involved, and to maximise the uptake of transmission reducing measures. There is great potential for the dynamics of social and political trust to change as the crisis unfolds, and this should remain a key consideration in designing public messaging.

Trust and distrust are qualitatively different constructs, and distrust is more than just an absence of trust. It has been conceptualised as 'negative trust', the expectation that others' behaviour will jeopardise personal safety.[24] Distrust can manifest as wariness, concern, fear, suspicion, scepticism, or message questioning.[25] Parties perceived to be untrustworthy may be described as incompetent or unfair. Furthermore, distrust and fear are both catalysts for misinformation spread (and vice versa). To discourage suspicion that renders individuals susceptible to misinformation spread, messages should be underpinned by the principles of transparency and accountability, and remain clear, concise, and consistent.

The levels of trust/distrust are likely to vary between different social groups e.g., age, gender, race or ethnicity, etc.[26] Communities with historical or current experiences of discrimination or social exclusion are likely to have lower levels of institutional trust. This can impact response measures such as vaccine uptake, particularly within groups who have suffered systemic/medical discrimination.[27] It is important to consider the interplay of trust and relationships between different groups and decision makers when forming risk communication strategies.

2.1.4 Sustaining community relations and ensuring public action

To maintain relations with the community, guaranteeing public action, the intervening organization (s) should have a team specialized in service and interaction with people. In addition to having a communication team that nurtures and professionalizes the publications they make.

This team needs to engage in the range of activities around trust, fear, monitoring, and understanding their target audience that can guarantee correct, specific, and easy to understand information, adapted to the public and the objectives. At the same time, there must be a team of professionals of the communication field serving the public and their demands, specially prepared to adequately meet the most sensitive demands. This response must be adapted to the channel used and the specific group with which you want to maintain communication.

This team must have all the necessary tools for public service, such as a suitable and comfortable physical place, and powerful equipment, software, applications or repositories with information, arguments and procedures for the demands that it may receive. In addition, the team must have clear procedures in place of dealing with atypical and non-standardized requests.

For this challenge, it is necessary to identify in advance the thematic and credible references related to the different risk topics that could need to be addressed. As an example, during the first stage of the COVID-19 epidemic in China, the Spanish Red Cross began the preparation of response materials to possible doubts that could begin to arise among its users and the general population. This role was assumed being an organization with high credibility, especially among the most vulnerable population. Equally, it is as important to develop procedures for unexpected situations that result in the absence information despite this planning.

It is also necessary to respond both in time and in form. This is only possible if previously it has worked, and coordinated, with the different areas that could be involved. It is also essential to plan your procedures for the different incidents, demands or gaps that may arise.

2.2 One-way communication practices

The dissemination of information is vital when faced with a risk, whether foreseeable or ongoing. The one-way communication must consider that the interaction with the population is not possible; it would need to happen in other channels. Therefore, the

feedback will normally be delayed or disconnected. In addition, this type of communication can last much longer in time (Eg, information hosted on a website, etc.). Bearing this in mind, one-way communication must be very thoughtful and complete, so that it does not make the situation worse or reduce the credibility of the organisation who carries it out.

These situations sometimes occur with population groups whose main source of information is one-way, as in the case of older people with low technological skills who receive information from the radio, television and written press. In these cases, in addition to the specific vulnerability of this group, it is necessary to offer complete and thoughtful information to avoid misinterpretation and behaviours that may be detrimental to the development of a crisis situation.

Times of crisis require decision-makers to make pivotal decisions quickly with little time for civic involvement. It is here that the 'deficit model' in communications research remains in use to disseminate messages, despite drawing criticism. [28] One-way communication is used as a way of delivering important information quickly. It is important that the messaging is clear as there is no room for discussion or questioning within the communication flow. This method is supported by traditional communication channels such as official statements or TV announcements, which will be explored at a later stage in this deliverable.

2.3 Two-way communication practices

Two-way communication has grown exponentially to become the basis of organizations and the population. This communication is very important and valuable, for both sides since the population can give feedback and interact in an early and complete way.

'If you have a substantive action to offer in response to a risk situation, and you want people to listen to it, you have to listen to them first'.[29]

Communication which sets out to change or influence behaviour or beliefs without first understanding the rationale behind those beliefs will 'almost certainly fail', whereas altering messages based on community input can increase uptake in public health directions.[30] Two-way processes allow for stakeholder engagement and empowerment and has been found to improve the effectiveness of containment measures, encourage ownership of decisions and increase the chances of public cooperation.[31]

Two-way risk communication embraces the public as a partner by understanding people as active participants in the process of apprehending and mitigating risk. It allows for stakeholder engagement and empowerment and has been shown to promote effective risk communication.[32] Meaningful engagement has been found to improve the effectiveness of containment measures, encourage ownership of decisions and increase the chances of public cooperation. [33] The literature suggests that the relationship goes beyond just science pitted against emotion or experts versus the public, submitting that each side brings specific knowledge, expertise, emotions and experience to the problem.[34] Australia's conduct in the current COVID-19

pandemic offers a successful example of two-way communication processes. The Australian Government Department of Health sought advice from a multidisciplinary task force comprising experts from the country's eight leading universities. This taskforce prepared an independent report titled *COVID-19 Roadmap to Recovery: A Report for the Nation* (Group of Eight Universities, 2020) presented to the National Cabinet and Australian Government in May 2020. In the report, public health communication was considered central to addressing the pandemic, defined as a 'two-way process engaging policymakers and communities'.[35] This communication style is particularly supported by digital forms of communication that allow for engagement and discussion, such as social media – to speak *with* the public, not *at* them.

Understanding how people see risk is often as important as understanding the risk itself.[36] Mowat, Snowden and Wright classify listening as one of the most effective forms of intervention in health care, and Sellnow classes it as a central factor of risk communication.[37] Initiating dialogue helps to engage with people to see how they perceive risk. Individuals and groups may interpret facts differently, hold different assumptions and values, or be shaped by personal experience. Different issues affect different people in varying ways, prompting the importance of understanding the needs and concerns of a wide range of communities. In this way, decision-makers and responders can understand more about people from different communities, of different vulnerability status, or whose practices affect risk.[38] Further, they can learn how affected and involved populations understand and are reacting to the emergency, the public(s) perception of response management, the level of trust and confidence in the authorities, and the potential barriers that might impede the adoption of required health measures. This form of communication, although on the one hand it could generate a reputational risk, as the organisation it is publicly exposed, it has other valuable benefits. One of these benefits can be to check and measure the interaction and acceptance of messages, but also to have a vital source of information. Thanks to this, the effectiveness can be verified quantitatively and qualitatively as well as detect other needs or stakeholders that had not previously been detected or considered. For this reason, it is very important to have both a user service team, which guarantees adequate public service, and a team for verification and analysis of the information obtained, in order to correctly address the entire process and objectives. In addition, the mere presence and good work will make the organization a reference, preventing another organisation or profile from taking its place.

A practical way to practice effective listening (two-way-communication) is to provide a forum for people to express their concerns and acknowledging and responding to them accordingly. Social media is an asset here, offering a dynamic interaction platform that people can easily engage with. It is also important for organisations to express genuine empathy and concern in their interactions. Showing compassion enhances credibility, paving the way for more effective communication.[39] People are more likely to respond favourably to public health guidance if they sense that decision-makers are concerned for their wellbeing.[40]

2.4 Current gaps and challenges in risk communication practices
2.4.1 General gaps and challenges from the literature

The current gaps and challenges in risk communication are as diverse as the list is long. On the one hand we have "the digital divide" where part of the population, due to lack of knowledge or resources, cannot access the channels where most of the information is being generated, listened to, distributed, and interacted with.

In addition to this first and great challenge, there are other challenges that must always be considered, such as the use of non-understandable language, misinformation, false news or figures that try to destabilize and discredit the message and the organisations behind it. To counter this, it is important that, either proactively, as well as reactively, to provide publications and answers with clear and validated information.

Among the most common gaps and challenges in communication in risk situations in different organizations observed in most of the literature consulted and reflected in the experience of the organizations involved in the project are:

- Avoid excessive technical language, as it must be understandable by the entire population without generating further doubts or misinterpretations that could trigger another crisis, or exacerbate the existing one.

- Counteract misinformation, pseudoscience, malicious, anti-system posts, and / or fake news. Detecting them and making clear communications about the matter addressed, in order to nullify these threats.

- Avoid stigmatization of individuals and groups to avoid other groups of people erroneously pointing to them as causing or propagating a risk.

- Getting the message to reach a large number of people and especially the sectors of the public with less interest regarding this information.

- Avoid uncoordinated acts and decisions and seek synergies with other organizations that can improve the impact and quality of communication.

- Carry out active listening to understand the audience and be able to both adapt the message and convey feedback to the people who make important decisions related to the risk to be treated.

- Needing to communicate with simplicity, clarity, and certainty, when discussing models, forecasting, probabilities, and uncertainty.

- Develop a communication in risk situations that allows to respect data protection, legislation and ethical aspects:

  o Inclusive communication when burdens and risks are unevenly distributed

  o Communicating about differential impacts in ways that does not (unintentionally) stigmatise a group of people.

- Understanding when and how to engage in different campaigns in order to address different vulnerabilities and perceptions of a risk that can otherwise lead to harm or marginalisation.

- How to communicate about the trade-off with human rights (e.g. loss of individual privacy for the sake of public health; loss of solidarity for the sake of individual freedoms and autonomy).

- There is a gap between theory and practice.

Regarding this last point, Macnamara observes that 'despite the theorisation of [...] public relations and corporate, organizational, government and political communication as *two-way* communication involving dialogue and engagement with stakeholders and publics, a transdisciplinary literature review of these fields reveals that little attention is paid to listening'.[41] This urges the call for theoretical ideas to be implemented in real life application through actionable methods, particularly when the evidence proves such theories to be beneficial.

Risk communication for communicable diseases often fails to reach its intended communities, particularly those considered to be most vulnerable. A review conducted by the European Centre for Disease Prevention and Control (ECDC) surveyed risk communication literature, including studies relating to HIV/AIDS, tuberculosis, the West Nile Virus, SARS and H121 influenza; vaccine risk communication, and general pandemic preparedness and risk communication. The review urges the need for more qualitative research on 'the public's diverse knowledge, understandings and perceptions of risk; preferred sources of risk information; and general health beliefs, particularly with minority and hard-to-reach communities'.[42] It further recommends that these findings are communicated to policy-makers and public health agencies so that they can directly inform risk communication planning, guidance and training; thereby bridging the gap between theory and practice.

The literature further shows that, despite the availability of guidance documents and planning tools for pre-crisis preparedness efforts, studies show that **preparedness efforts remain lacking**; needs assessment, contingency plans and other preparedness and public education and engagement plans are still sorely needed. A suggestion in the literature for improving communication is planning and preparedness, as well as 'testing risk communication principles under simulated conditions of time pressures and stress'.[43]

One study calls for the need to **improve how complicated material is communicated**. This is not a recommendation to 'dumb down' science, but a suggestion to find new ways of communicating complex issues in comprehensible ways.[44] This goes beyond visualisations (e.g., maps or infographics) which, although can be used to help transfer information between science, policy, and the public, are easily misinterpreted by nonexperts.[45] A holistic approach could inform improved communication efforts, whereby risk communication is based on scientific advice, while accounting for the cultural, ethical, and political contexts of any given society.[46]

2.4.2 Examples from STAMINA partners
2.5 Tackling misinformation

Misinformation is a scourge that is currently on the rise, either for political, anti-system purposes, attracting followers or simply to obtain the destabilization or notoriety of who, or who, carry it out. It is very important to detect it as soon as possible, analyse its messages, its purposes and its scope in order to be able to counter it with real and concrete information.
With resources, knowledge and effort, it is possible to counteract in some way these situations but nowadays it represents a greater problem for organizations and the actions to mitigate it are more ineffective.

In a world biased by political, religious or diverse tendencies people will believe who they trust. If they trust a misinformation-spreader, they likely don't' trust government/authorities, and thus no content will make a difference.
Therefore, more weight has to be put on building trust before and during the crisis by organizations than on the content to avoid misinformation itself.

As an example of the actions to implement once the crisis arises and in parallel with the effort to build or regain trust, the Spanish Red Cross carried out a campaign during COVID-19 called "Misinformation is the greatest ally of COVID-19".

This campaign tries to normalize the demands for information from the population and address them to the authorities, in this case, the government referents who acted in the pandemic (Ministry of Health and the territorial health ministries). As well as making a call on not to share messages "that are not reliable."

In addition, the key messages were clear in order to contribute to ending stigma. The level of stigma associated with COVID-19 is based on three main factors:
1. It is a new disease;
2. People are often afraid of the unknown;
3. It is easy to associate that fear with "others." The situation is causing confusion and stress but we must not feed stereotypes;

Figure 2 "Spanish Red Cross Campaign 1"
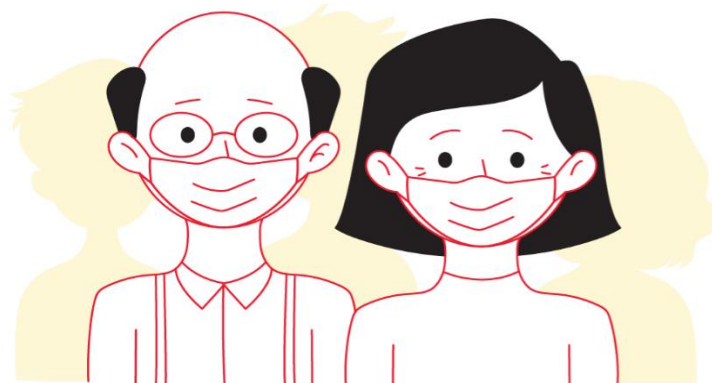
Figure 3 "Spanish Red Cross Campaign 2"

Figure 4 "Spanish Red Cross Campaign 3"

Figure 5 "Spanish Red Cross Campaign 4"

3. Risk detection

Knowing how a crisis can be prevented from the point of view of the communication is as important as knowing how to manage it when it occurs. Crises are not something new, however, social media has come to complicate contexts, to hyperbolize errors, comments or negative situations. Despite the uncertainty and unpredictability of crises, the reaction to a situation of this type must be planned in advance to provide an adequate response from the organization. A good strategy for Crisis Communication is intended to define the following:

- What do we understand by a crisis situation
- How we should act to prevent it
- How we should react when it occurs
- How we should coordinate during crisis management, in order to minimize its impact

Crises are not produced exclusively by a pandemic, political-economic situation, negative comments or attacks. A message sent by mistake, information published prematurely, a baseless response or the absence of a response can also cause a crisis. We must be aware of the speed of propagation of messages on social networks. Within the different crisis scenarios, we must also consider the possibility that the crisis situation originates in the offline world, and is amplified by social media.

Objectives and scope of the Crisis Communication Strategy

The objective of the strategy is to know what to do and who is responsible of each task in the face of a crisis or possible crisis. Being able to provide instructions on how the staff should act in these cases will help us protect our reputation and avoid reacting uncontrollably, or not reacting appropriately, to a problematic situation or crisis.

Putting a crisis management mechanism in place is not easy. Expert support is needed at many times during the crisis and also prior training, not only for the people who manage communication or those who will form the crisis cabinet. But also, for all the internal staff of the organization or organizations involved.

Why is it important to prevent a crisis and maintain trust in an organization?

A crisis will negatively affect the performance of our work. It will affect our different stakeholders, and will have a negative impact in some or all of the areas that are key to us: contributions, recruitment, the trust of our staff and actions, in institutional relations, in media coverage, etc. We already know the speed of propagation of crises in social media. Therefore, if we are able to learn not only to manage a crisis well but to prevent its appearance or severity, we will be efficient, save time and resources, and possible prevent serious problems.

Incidents capable of provoking a communication crisis:

Some examples of incidents likely to generate a crisis would be:

- A real crisis, for example, an ongoing pandemic or a possible onset of it.

- Social movements (claims, anti-system, political-social crisis, etc.)
- Misconduct by one or more members of the organization. Such as: fraud, embezzlement, abuse of power, mistreatment, sexual abuse, racism or other illegal or unethical practices.
- Rumours produced by the internal public of the organization that threaten the good name of the organization.
- Publication of harmful information from corporate accounts after identity theft.
- Publication of sensitive or confidential information from corporate accounts.
- Publication of false, manipulated or erroneous information from corporate accounts, or that appear to be.
- Corporate publications of any kind considered offensive by its readers.
- Publication of false information and data in forums and social networks.
- Malicious posts on social media, fake news…
- Inaccurate or inappropriate answers given by the organization, which generate noise and controversy (due in large part to arguments not reviewed and / or poorly raised).

Along with these situations, it is also necessary to pay attention to other bad practices, which, although a priori may seem not to have an excessive importance, threaten who we are and what we do. We refer to:

- Imitation or misuse of the organization's logo and emblem
- The publication of comments, photographs and / or videos with negative or false information in forums or networks.
- The appropriation of information from other sources or organizations.

3.1 Early warning systems

Early warning systems in general are key to detect a crisis as soon as possible. These types of systems can be simple for example that the personnel who attend the different service or communication channels detect them directly. This system can be more advanced such as the creation of one or different alerts, by keywords normally, that warn and automatically collect the information related to certain keywords before a possible crisis.

For example, these systems can track keywords related to the organization or keywords about different situations of interest. In addition, the volume of interactions and the frequency can be configured (Eg 100 mentions in 15 minutes).
The permanent review of its parameters should be done in order to include exclusion criteria (noise or topics that are not of interest within the search, even if it shares any of its keywords) or add inclusion criteria for that topic.

The value of such a system has already been demonstrated in other crisis domains. For example, the Spanish Red Cross developed an early warning system in 2016, and through its deployment found cases of gender-based violence (with a large volume of mentions within the digital environment) and had to invest 6 months on fine-tuning the alerts on this topic.

The configuration stage carried out by the Spanish Red Cross for its early warning systems for gender violence had different difficulties. This was due to the fact that being a subject and its keywords widely used throughout the digital environment, they included a lot of noise that had to be refined in order to receive both possible and real cases of gender violence.

The difficulty of having much noise was added to the fact that, in the Spanish language, there are many variants of different acts or situations, for example, for a person killed or attacked by a knife. Therefore, 6 months were dedicated to deliver these early warnings to the service.

3.2 Analysis of social conversation in real time

Follow-up and analysis of social conversation in real time is very important, as it will help to detect a crisis situation early. This follow-up will be both of the people who participate in the crisis mitigation and of the analysis tools that will help to interpret a large volume of data. As an example, there are tools that, depending on the words used by the author, can determine if the sentiment is negative, neutral or positive:
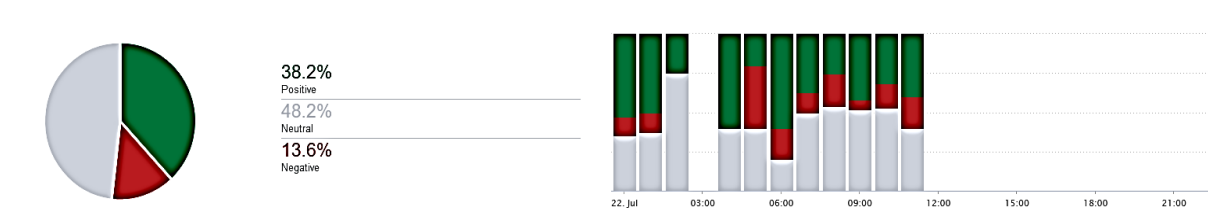
Figure 6"Sentiment analysis dashboard"

Once a negative sentiment has been detected, it can be filtered, analysed and observed if there are risk factors or not within these previously detected negative mentions:
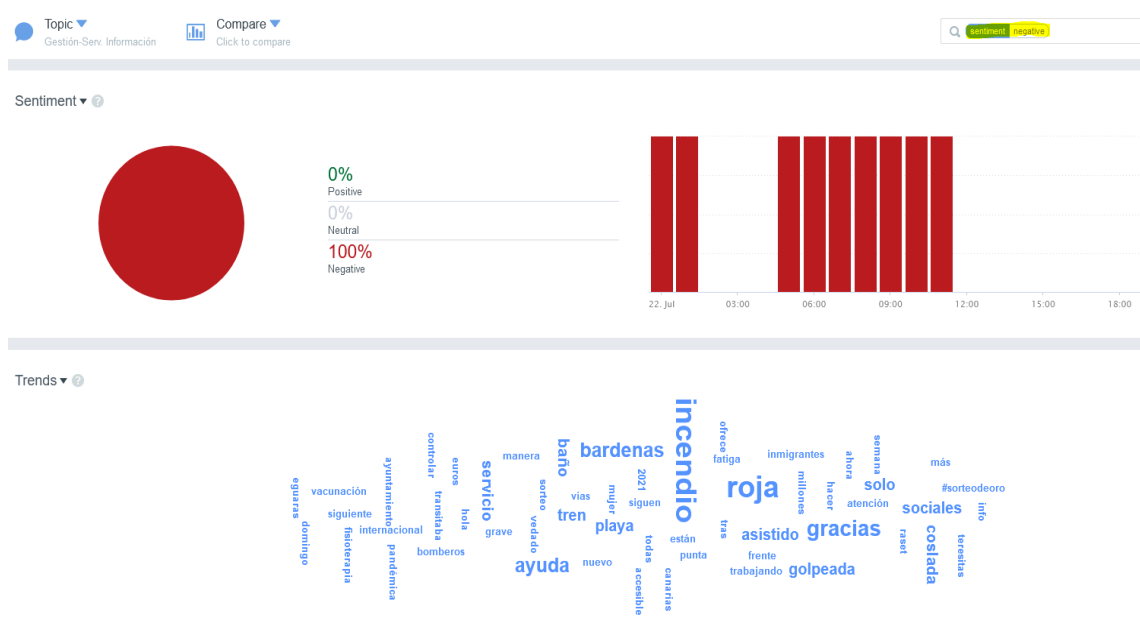
Figure 7 "Sentiment and trends analisiys dashboard"

In this case, a few negative mentions are observed in the time bands reflected in the graph. Mentions correspond to a fire and an injured person after being hit by a train. In this case, due to the type of events, it is normal to have a negative feeling in the analysed discourse, especially in an early stage in which the organization has not yet been able to intervene. In these cases, it is important making sure that these events are being addressed by the organization and showing empathy with the affected groups from the beginning.

3.3 Data analysis of the virtual community history

In the previous example we observe the value that exists in the analysis and monitoring in real time. This type of action is very important and, help to detect and focus on any eventuality that is ongoing. But, in turn, the raw data collected over a longer period than an immediate one, will help to meet certain needs that are not given special relevance on a day-to-day basis, since they can be ignored, but in a longer period it is detected given the accumulated volume and analysis of it. In addition, being able to know these needs together with the information of those who need it, or at least show interest / participate in said need or topic, is valuable information to mitigate or alleviate such need or interest.

The monitoring tools help to detect these issues, which we will observe within what we are normally analysing, but going down to detail and analysing any parameter that is considered of interest, as we already saw with the negative sentiment, these tools also report the language used, and aggregated information about the age or gender group (s), including their estimated account location or hours of activity. This information is very useful to develop an adapt communication or reaction plan:

Language	Total
English	867.9K
Italian	198.1K
French	167.5K
Spanish	119.7K
German	96.8K
Portuguese	25.6K
Korean	18.7K
Dutch	15.8K
Arabic	12.2K
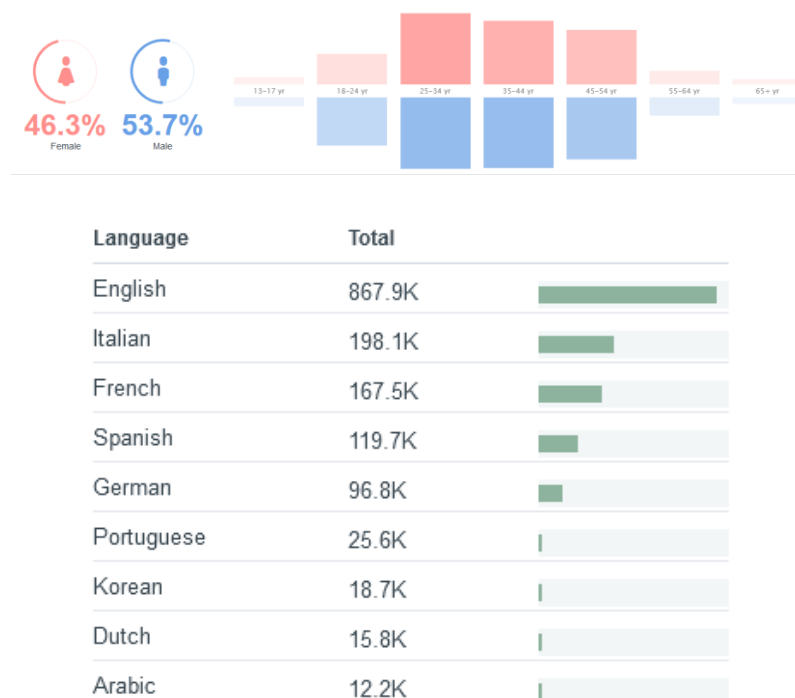
Figure 8 "Sociodemographics analysis dashboard"

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Monitoring has multiple purposes and does not only seek negative mentions or feelings but is an ideal tool to assess trust or public understanding.

Some of the indicators to be able to evaluate the importance of a message or dialogue with potential risk are the following:

- Volume of interactions
- Type of content
- Veracity
- Sentiment
- Influence on the emergency
- Influential people / accounts
- Time and frequency
- Language
- Territorial scope
- Socio demographic information

The design of monitoring tools should try to include the mentioned criteria in its search filters as far as possible as long as they comply with the data protection regulations and respect the privacy of users. In some cases, these limitations can be solved by presenting some of the data in an aggregate way. In this case, the risk assessment instead of undertaking publication by publication will evaluate percentages of the total based on some of the cited indicators.

4. Risk classification

The classification of the risks that can lead to a crisis can be done in many ways. It is very common to develop a risk matrix that considers, on the one hand, the seriousness of the event and, on the other, the probability that it will occur.

As mentioned above, there are several types of situations that can lead to a crisis, and sometimes these situations are generated by the process of communication with citizens itself. In any of these situations, the risk mitigation must be aligned with its importance.

Risk detection is a crucial process to achieve the objectives presented by a good communication strategy in crisis situations. In this case, the classification presented conditions the response by the authorities and organizations involved in the management of a crisis. As determined in the objectives for a communication in risk situations strategy, it is necessary to act quickly to generate public awareness and increase public motivation to participate in response efforts. In any case, overacting and exceeding the limits of territory or population groups to which to convey our message can be counterproductive since it can generate both a feeling of mistrust for some people and excessive fear and insecurity for other individuals or groups. For this reason, it is very important to determine the scope of the risk and how that differs across communities and, based on the level of risk, measure the efforts and scope of communication actions to be taken.

Once dissemination of messages on networks has started--even before they are produced--it will be necessary in turn to evaluate the discourse and continue to identify the potential risks derived from it.

In this case, the example used is the risk classification carried out during the early stages of an epidemic or pandemic situation by a public interest organization (Spanish Red Cross). The following classification scheme allows risks to be group in such a way that enables risk communicators to work on their prevention. Classification can be done:

1) By affected territory:

It is important to determine which territory is affected by a pandemic disease, if it is a region of a specific country, in different regions or the whole of the same country, or if it affects several or all of the EU countries.

2) Due to virality / epidemiological severity:

Also, it is necessary to determine by the indicated authorities if this or these pandemic diseases detected, what virality or severity for health they present.

In parallel, a classification can be made in the event of a reputational and social media risk:

a) Origin:

Some crises originate from the Internet, others however first appear elsewhere, such as in the physical world or in traditional media, and are amplified on social media. Either with the participation of other media on the Internet or without it. In our case, the origin will be relevant when planning who is most likely to detect the possible crisis and what are the steps that should be followed.

Not all crises come from real emergencies or attacks, often the origin is well-intentioned mistakes.

b) Authorship:

A large number of crises are generated by the own personnel of the organization that suffers it. Since these crises often cause even more damage than external attacks, try to prevent them as much as possible. The risk of the workforce joins that of the volunteer staff. In many cases they originate without malicious intent, often due to misuse of social media or communication. For us, the most important thing is, on the one hand, to provide training and, on the other hand, to publicize basic security recommendations related to technological aspects for the protection of our accounts.

We must consider both the members of the organization and the people who manage communication.

On the other hand, a relevant authorship is that a recognized scientist, organization or government decrees or reports on a crisis, either ongoing or anticipated.

c) Intentionality:

A crisis in social media can be caused by an attack or by the development of an action whose objective was not to try to harm. Among the mild cases could be the attack of trolls and probably, among the most dangerous, that of a malicious member of the organization. In between, the number of possibilities is extensive: former employees, dissatisfied users, collaborators, etc. We must be prepared to execute the crisis protocol in the face of an attack, but also to act and try to deactivate the crisis if the origin is internal, there is no intention and it is possible to rectify.

It is important to have these two scales and concepts. Given a crisis, for example a pandemic, that puts the institutions, organizations and professionals who act in it at reputational risk. Since they will be the focus of service, both for other entities and for all citizens.

4.1 Risk Level

Threat detection, identification and management

Focusing now on a context of risks produced mainly in discourse on social networks and digital media, different levels of risk are presented.

This diagram shows the way from the detection of the threat, to the responsibility of its management:

	Content		
Authorship	Irrelevant	Relevant	Very Relevant
Irrelevant	0	1	2/3
Relevant	1	2/3	4
Very Relevant	2/3	4	4

1 Quick management with SM oversight

2 Cabinet Management + Department / Area

3 Cabinet Management + Department / Area
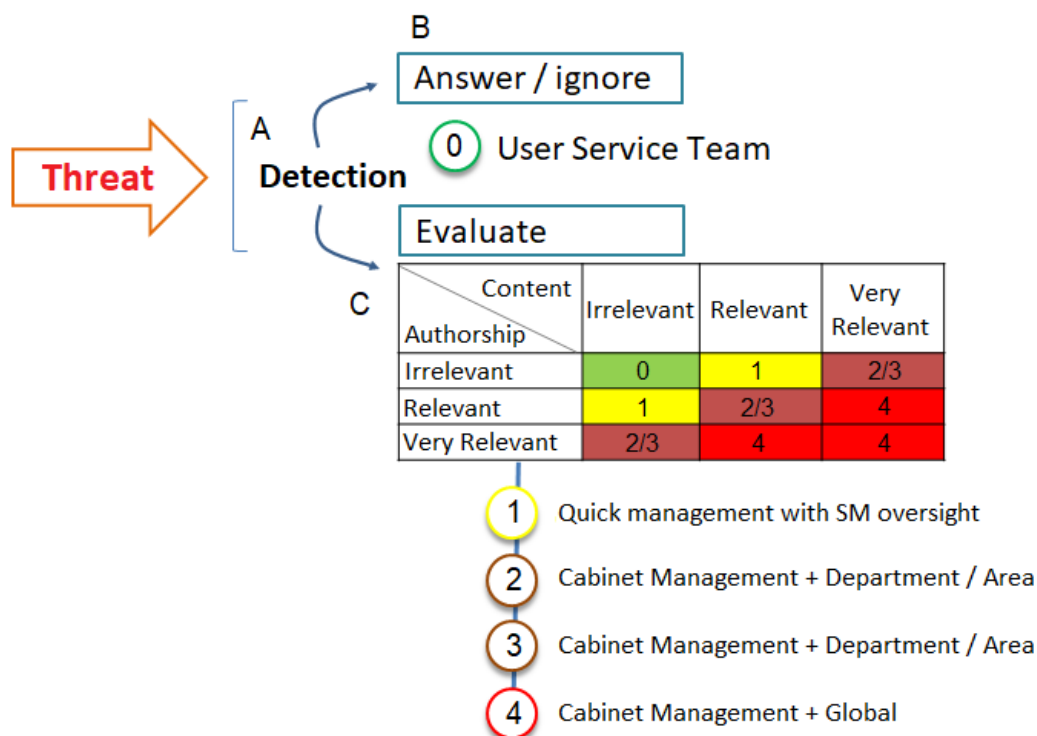
4 Cabinet Management + Global

Figure 9 "Threat management"

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a) The detection of the threat occurs in most cases by the monitoring team, the analysis team or by people with user service functions.

b) If the relevance of the threat is very low, level 0, the person who has detected it or who manages the channel where it has occurred will answer or ignore it. For this reason, it is mandatory that any person who performs user service functions has the necessary training, information and motivation.

What do we understand by a threat with a very low level of relevance or level 0?

Publications with irrelevant or very little relevant content, published by unknown people or with a very small audience, for which the person who performs the user service function has been trained in their management, and that do not represent a novelty. An example will be displayed later.

When is it answered and when is it ignored?

In general terms, all publications that ask questions or demand some kind of attention will be answered (when there is preparation for it) and publications that seek a confrontation (trolls), that do not have the appropriate tone or whose answer could be detrimental to the interests of the organization could be ignored. For example, because of the complexity of the answer.

Example: "People from Stamina are a problem, you help foreigners infect us."

It is a comment that if produced isolated and by a non-relevant author, should not be answered since it will not get the author to change his mind and there is a chance that he will feel encouraged to escalate his attack.

What if you are not sure of the threat level?

The person who performs the functions of customer service will contact their reference if it is different from their person. If there is no reference available or if both or both have doubts, the persons responsible for the crisis team will be contacted through the communication channel that has been established.

The crisis team, after verifying that it is a threat of level 1 or lower, will supervise and give the appropriate instructions for its management. If the threat level is higher, it will convene a Crisis Cabinet to agree on a response.

c) The Crisis Cabinet, summoned by the user service team, will evaluate the level of threat and the actions to be taken whenever the threat has a level 2 or higher. That is, as long as the author and content are relevant or very relevant or the affected territory is different countries or the virality / severity is medium or high.

Depending on the type of threat, the Crisis Cabinet will summon the rest of the specialist staff of the affected topics, or of the global structure. In this case, it should be noted that in the case of levels 2 and 3 the difference is not the relevance, but the

people who will be involved. In the first case it does not affect a specific area and in the second it affects one or more areas (Eg epidemiology, security, border policy, foreign affairs, etc).

Let's take a closer look at the **procedure for analysing a possible threat**.

The identification of a possible crisis cannot be subject to complex or lengthy work. If we look at Twitter, for example, and try to assess the relevance of an account, based exclusively on the number of accounts that follow it, this data may be indicative, but it is not always a relevant factor, as it can be easily adulterate. At the same time, there are very relevant accounts with very little audience. This is the case, for example, of journalists, even section managers of relevant newspapers, who, despite having a great capacity for influence, sometimes have very small audiences.

The way to detect and identify a threat will consist of looking at the message and the authorship, and classifying both according to their level of relevance, in relation to a possible reputational crisis.

For the analysis of the author we will look at both the size of his audience and his ability to influence.

For the analysis of the content of the message, we will look at whether or not the topic is developed in any of the arguments, its ability to generate negative comments towards the organisation, the level of emotionality, aggressiveness and, of course, its relevance (The ability to negatively affect the organisation regardless of whether the content is true or not).

Fortunately, the vast majority of interactions on social networks occur between people who share their points of view, their emotions or information generated by third parties. For this reason, the best way to identify a threat is: to make sure that the people who manage social networks on a day-to-day basis have the necessary tools, training, motivation and common sense.

Why do we want to identify and classify a risk?

Risk assessment and classification is an important step in determining the scope of any communication strategy. However, this strategy, although it must be flexible to changes, must be designed and piloted in advance of the emergence of risks.

This assessment of the level of risk must be done when a threat arises and can be repeated if it is considered necessary since the risk levels change over time, even for the same threat. In any case, we must not lose focus on communication and dissemination actions, therefore, monitoring tools can be a great ally in this phase. The evolution of these tools may allow us to automate this classification, providing even greater precision, allowing communication departments to focus their efforts on other phases of the communication strategy.

Regardless of how good may sound "we are in a crisis of yellow level" or "we are in a crisis of level 4, the classification must serve to determine the resources that will be

assigned to its management. The number and composition of the people who will be involved and the protocols that will be put in place.

To determine the level of threat we must evaluate both the authorship of the message and the content of the message, classifying them as irrelevant, relevant or very relevant and taking them to this matrix:

Content / Authorship	Irrelevant	Relevant	Very Relevant
Irrelevant	🟩	🟨	🟫
Relevant	🟨	🟫	🟥
Very Relevant	🟫	🟥	🟥

Figure 10 "Risk Classification Matrix"

An additional factor will be the number of messages. A large number of messages coming from different accounts or posted on different channels can escalate to a higher level.

4.1.1 Low risk

The **green level** scenario corresponds to the level 0 (low risk) that was shown previously.

In the case of an epidemiological crisis, this case would be for a territory within the same country with low virality / severity for health.

Situation 2, Reputational crisis: It occurs when both the content of the message and the authorship (audience / influence capacity) are irrelevant.

Example: publication on Facebook by a stranger: "I don't trust it, there were cases of corruption due to vaccines, and your news contains a suspicious political bias."

Answer:
"Hello <name>, to finish with your doubts in this link <link to transparency> you will see information about transparency and about our accounts.

Management: It will be carried out by the team that performs the functions of customer service

4.1.2 Moderate risk

The **yellow level** scenario would correspond to level 1. (moderate risk)

In the case of an epidemiological crisis, this case would be for a country with low virality / severity or for a region of a country with medium virality / severity.

Situation 2, reputational crisis: in this case either the content of the publication or its author is relevant.

Example: an apparently well-founded criticism, with concrete data, denouncing the preferential attention to migrants and not to natives of the country in some issues.

Management: it would be supervised by the care team, alerting the Reputation Office if deemed appropriate.

4.1.3 High risk

The **brown level** scenario would correspond to levels 2 and 3.

In the case of an epidemiological crisis, this case would be for different countries affected with low virality / severity or for a country affected with medium virality / severity,

Situation 2, reputational crisis: both content and author are relevant, or one of them is very relevant.

Example: A very popular person posts on his Twitter account: "I am very disappointed with how this organization is handling the pandemic."

We can consider that, although the message itself does not have special relevance, its author does, so we would be at the brown level. In this specific case we would be at level 2 and, at least initially, it would not be necessary to involve any specific department or area.

Management: it would be carried out by the Reputation Office, involving or not specific departments.

4.1.4 Critical risk

The **red level** scenario corresponds to level 4.

In the case of an epidemiological crisis, this case would be for different countries affected with medium virality / severity, an affected country with high virality / severity, or different countries with high virality / severity. This is a critical situation.

Situation 2, reputational crisis: very relevant content and relevant or very relevant author. Or relevant content and very relevant author.

Example: message launched by an author with a good reputation, about the investigation of a plot of diversion of funds and collection of commissions, which involves high executives in the field of health, epidemiology or vaccination.

Management: it will be carried out by the Reputation Office and will involve other appropriate people for the case (s) detected.

5. Management staff

5.1 Risk committee

A risk committee is defined as that team of staff that will be in charge of managing a certain risk situation. There will be different risk committees depending on the situation and its level of severity.
The implementation of these committees may also differ depending on the type of organization or its geopolitical, cultural or structural conditions.
Therefore, the following sections detail one of the possible implementations of this risk committee.

5.1.1 Committee in minor crises

The committee for minor crisis situations is the one established by the daily monitoring staff, without the need to establish a higher level of communication management, accompanied by communication professionals and social media management of the organization.
In this way, in a situation of slight risk the committee would be made up of:

- Monitoring staff
- Social media area staff
- The organization's communication manager will be informed about the situation and the communications strategy, being a hearing part of the conversation, but without the need for intervention.

5.1.2 Committee in moderate crisis

Correspond to the **yellow level** scenario mentioned in previous section.

In this case committee will be composed of the user service team, the monitoring team alerting the Crisis Cabinet if it deems it appropriate.

5.1.3 Committee in high crisis

Correspond to the **brown level** scenario mentioned in previous section.

It will be formed by the Crisis Cabinet, involving or not departments / areas.

5.1.4 Committee in critical crises

Correspond to the **red level** scenario mentioned in previous section.

Committee would be composed of the Crisis Cabinet and will involve other appropriate people and specialists from different areas related.

5.2 Risk monitoring and reassessment personnel

The risk monitoring and reassessment staff group will be composed of, at least, the personnel or user service reference. In collaboration, if possible, with risk experts.

5.3 Spokesperson

The spokesperson must be previously determined, in order not to fall into improvisation and avoid in the first instance, or later, a person who does not have the proper training and experience in the matter to be discussed.

This figure is very important since it will be both the reference person and the one who conveniently addresses all the issues and avoids the creation of a new crisis or an increase in it with his/her statements.

It is advisable, if possible, to focus on the same person throughout the development of the crisis, in order to have them as a reference.

This person must have, in addition to the power and ease of communication, extensive and up-to-date knowledge of everything related to the crisis. Not only the key messages or the information that is estimated to be disseminated, but, in the event of an epidemic, all the current information in research, studies, the hospital situation, teams and institutions involved, government ordinances, scientific and sanitary indications, consequences for the population, evolution of the situation, etc.

This is important since the spokesperson must generate security, so he cannot be hesitant by not knowing, or at least not in depth, any issue that arises during the development of his/her work. Any news must be detected, up to the last minute, in all the matters indicated in the previous point before carrying out the spokesperson action.

For this, the spokesperson must be continuously informed and attend all meetings, both from technical and communication areas, to be able to contribute, and make their own the messages that emanate. By making these messages their own, the population will be more likely to be truthful in what they communicate.

It is very important that, when they are going to give the presentation, make an update of the previous points with your team in case there has been any modification, or new situation, that could be addressed in the interview that is about to be carried out.

The spokesperson must also generate, and show, empathy since there is a risk that the media, and especially the population, may be suspicious when seeing a person who is not emotionally and professionally involved.

5.4 Media Management

Media management should be stablished before any crisis to have the necessary references and support to alleviate a possible crisis. It is important to use the media as amplifiers of our messages or, at least, be aligned with them. It is also important because it will be possible to clear up misunderstandings and defuse threats before they quickly turn into crises.

6. Designing Risk Communication

6.1 Response processes

Main challenges

The main challenge in managing the different accounts, in addition to achieving coordination capable of organizing topics and campaigns, and avoiding contradictory content, is:

• To have quality content

For this purpose, it is essential to follow a content strategy. A consensual strategy, focused on coordinating actions in social media, as well as in the rest of the digital platforms in which we disseminate content, prioritizing themes and campaigns, avoiding concatenations, contradictions and duplications. A key element in developing quality content is creating an editorial calendar. Along with it, it is essential to know a frame of reference for the digital presence and the positioning white papers (argumentative) on the topics that are being worked on.

• Moderate opinions and responses

 "He who is silent grants" and, furthermore, he who is silent shows unconcern. It is necessary to moderate the opinions to avoid that they can lead to something unwanted, or that they escalate, for example, to the category of offenses or harassment towards the organization or towards any of the members of the Community.

• Keep the conversation going

Encouraging and sustaining the conversation can occur in addition to informative content, with interaction: to give thanks, to invite to an event, conduct a short survey, or invite to a conference or roundtable, to offer help and relief through social networks. These conversations will help us generate feedback that we can then analyse.

• Define the tone of the conversations, depending on the situation and the theme

It is not the same to disseminate information that has come to us from the health alerts area, then to give advice to caregivers. To get the tone right, it is necessary to listen before, and analyse what will be the most appropriate tone according to the conversation that is being generated before a situation, topic, or World Day.

Good practices
Good media Management

A good management of traditional media is always essential. Thanks to this management and the good relationship with most of the media, it will be possible to clear up misunderstandings and defuse threats before they turn into crises. Social media is subject to a different dynamic that makes it extremely difficult to manage once the crisis is underway.

In addition, there are a series of measures that must be put into practice when considering being visible, not as an end itself, but as a means that adds value to actions aimed at achieving the strategic objectives of the organization. They constitute a series of practices in which we must continue to deepen in a joint and coordinated way.

Training of the workforce

Training, of the workforce and of the volunteers in some organisations in the use and participation in social media with their personal accounts.

Organisations must ensure that whoever wants to learn with the intention of participating, thus amplifying the work they do, has the necessary training, guides and resources.

Active listening

It is necessary to measure our own responses and improve them based on experience and our own and others' mistakes.

Active listening will be carried out in the digital environment to provide us with periodic information on how the sentiment of users evolves or on topics of interest to them, within our scope of action.

Monitoring is vital during the different phases of a crisis: in prevention, in management and in recovery:

- It allows us to know what is said about the organisation and its activities, the most frequent queries, the specific opinions about our different areas, the identification of influential people, etc.
- It helps us to identify possible sources of risk such as reviews, complaints, fake posts, malicious posts, etc.
- It provides us with information on topics of special interest to our Community.
- And it also allows us to develop true two-way communication with our audience.

Crisis management protocol

Objectives of the crisis plan

1. Preserve the maximum image and reputation against the negative effects that a crisis can cause.

2. Transmit an image of efficiency, responsibility and ability to react to negative or unforeseen events.

3. Satisfy with the greatest speed, precision and rigor, the demands for information that the event raises between public opinion, the media, governmental and scientific-sanitary authorities of member countries and the rest of the audiences that are considered objective.

4. Obtain an advantage, derived from having planned an organized response, against the unexpected appearance of fortuitous events that we do not know when they will occur.

5. Minimize the impact and loss of operability that implies that part of the organization dedicates itself to solving a crisis, totally or partially abandoning its ordinary tasks.

Preparation

It is not possible to improvise, or to give answers with the speed that is currently demanded, if the actions to be carried out have not been previously planned and who will be responsible for executing them designated.

In this phase there are a series of elements to which special attention should be paid:

- Policy and Guide Review: We have already seen the importance of the role that both staff and volunteers, if the latter existed, play in a crisis, and the consequences of letting them act on instinct, rather than following guidelines. It is necessary to have policies and action guides that, on the one hand, guide the best use of social media and, on the other, facilitate the management of publications by third parties, such as insults, threats, spam ... avoiding accusations of censorship and the appearance of new problems.

- Review of the crisis strategy and protocol: it is useless to have a manual and action protocols if they are not updated. Review must be done if the people who must manage the crisis are gone or if the protocols have become obsolete because they do not contemplate the truly relevant or current issues for the organization.

- Construction and adaptation of messages: it is not the same to prepare communication materials for a press conference or for a television interview than to disseminate them through social media. For crisis management in social media, the criteria of effectiveness and efficiency must prevail, over others that may provide us with a false sense of security, or a level of detail that makes them difficult to use. For this reason, we must have up-to-date arguments on the topics considered most relevant and adapted to social media and have a space on the Internet where additional information can be offered quickly.

- Channel tuning: we must be able to anticipate how we will use our corporate channels in the event of a crisis. And being able to answer a series of questions such as, for example, for each channel: what role would it play during a crisis? What degree of proactivity or reactivity do you want to give it? Is our website, for example, ready to publish information in an agile way if necessary? What happens if the web goes down? Are there alternative plans?

- Monitoring: Definition or review of listening tools and scope (channels to be listened to, terms and frequency of alerts)

- Training: the strategy, manual and protocols will be useless if the people who should be involved in identifying and managing crisis do not receive adequate training. All people who publish content, or who perform functions of service to the population, whether or not they are references, must have a minimum training. A fundamental part of the training, especially for those who have a greater responsibility, are the rehearsals, updates and simulation of crisis situations from time to time

Management

If the preparation phase has been successfully completed, we will be in a position to deal with a crisis in the best possible way. This will drastically decrease both the likelihood of crises and the likelihood that incidents escalate into crises.

Within the management phase, the steps that in most cases will need to be taken are:

- Identify the crisis to quickly and effectively take appropriate actions.

- Involve the people who must manage or have knowledge. Taking into account that the coordination of people for crisis management is a critical element.

- Expand active listening: review the terms and resources being monitored, the channels and the frequency of alerts.

- Implement reactive and / or proactive communication.

- Document crisis management: objectively review the actions that have been put in place, with what objectives and what the results have been in order to act quickly.

Analysis and Recovery

It is often said that there are not two identical crises, however, valid lessons can be obtained from all crises. For this, it is necessary to produce the documentation of the crisis (what happened, what decisions were made and what were the results) and analyse it. It is convenient to carry out a post-mortem. The result of this analysis, in which the different managers should be involved, will allow us to learn to improve the management of future crises.

There is the possibility that an opportunity will emerge from a crisis that benefits the organization, or reinforces it, and it is necessary to look for it.

Once the crisis is over, it is advisable not to lower your guard. Continue with the monitoring, see if there is any trace left for which it is necessary to take measures (actions for a repositioning in Google, for example), and see if it is necessary to re-evaluate any message and start planning content to, little by little, return to a normal situation.

6.2 Preparation of the message, depending on the audience and channel used.

Risk communication is a crucial component in helping public(s) prepare for, respond to, and recover from emergencies. It is key in shaping informed risk perceptions, encouraging positive behaviour change, and supporting public needs. Decision-makers and experts on the front line of a health crisis must be ready and able to translate scientific research, medical observations, health and mortality statistics, and scientific research into messages that are digestible and resonate with a wide range of audiences. A key aspect of risk communication strategies is that they are prepared in advance of a crisis, as beginning plans only once a crisis strikes is tantamount to losing opportunities to gain control of it. Although crises are often unexpected, it is imperative to have generalised plans in place that can be tailored specific to contextual needs. The Pan-American Health Organization provide a generic framework in which to tailor communication strategy that keeps messages clear and concise while providing actionable recommendations:

- Who?
- Says what?
- To whom?
- In which channel?
- With what effect? [47]

This offers a starting point for organisations to use within their operations as experts of their own contexts, audiences, and experiences.

Another important consideration messaging design is balancing. It is important that risk communication conveys an appropriate understanding of risk, neither overstating nor skating over it. If civilians underestimate the threat, they may be disenfranchised from decisions and find themselves in situations that they are not prepared for. Conversely, an inflated sense of risk may desensitise people to danger and induce warning fatigue.[48] Messages should therefore appropriately communicate risk level

and threat, as it will impact the extent that people can effectively engage with the response. Further, risk communication has been found to be more effective when tied to actions that can be taken to manage a risk, rather than simply inform about it.[49] It is therefore important to inform the audience what they can do to protect themselves and one another.

Communities may interpret or engage with messages differently, so these may need to be customised to meet specific group concerns. To communicate effectively, it is important to know the target audience and the challenges that they are likely to face when assessing and acting upon risk. Awareness of the diversity of public knowledge, attitudes, practices and beliefs will allow for communications to be adapted to community actualities. While multiple risk communication dialogues may be necessary, the message and instruction should remain consistent to prevent confusion and maintain trust in both the message and messenger. Risk communicate strategies should also be designed with communication channels in mind, and the pros and cons of whichever platform they choose so that messages can reach as many as people with as strong an impact as possible.

6.2.1 Engaging different target populations

Risk communication does not occur in a vacuum. Responses to health risk communication are influenced by existing psychological, social, cultural, health and socioeconomic factors, all of which interact and influence how individuals and communities interpret official risk messaging.[50] Such factors also influence people's preferred channels of communication, who they consider to be a trustworthy source, and their willingness and ability to act in a timely manner. It is important to recognise that communities may not be affected by communications or interventions in the same way due to collective experience. When tailoring risk communication messages to reach and resonate with different audiences, research on the public's understandings and perceptions of risk; preferred sources of risk information; and general health beliefs are of particular value.[51] This includes making information accessible in a variety of formats and understanding who might be excluded from different communication channels so that they can be included through other methods.

Vulnerable groups of people are those disproportionately exposed to risk, but who is considered 'at-risk' can change dynamically.[52] Vulnerabilities can be categorised into individual, socio-structural or situational categories, examples of which may include gender, financial status, living conditions, disability, race or ethnicity, pre-existing medical conditions, age, occupation, location, etc. Intersectional framework can help us understand the complex risk faced by groups and individuals. Different forms of vulnerability often operate simultaneously and interact in inseparable ways, producing distinct and specific disadvantages. Designing risk communication with an awareness of intersectionality is important so that those acutely vulnerable are not overlooked or left behind in response and recovery efforts. An intersectional approach provides a framework that encourages recognising a diversity of experiences, acknowledging the differences that may impact risk levels. This is important in order to deliver important health communications in a non-discriminatory manner. The

quality of risk communication is based on its ability to meet the specific needs of all populations.[53] It is therefore important that organisations know who may be vulnerable to risk, and which method is best to reach this audience in order to ensure inclusive risk communication and planning efforts.

A key challenge in risk communication is not only providing information to navigate a health crisis, but also grappling with the context in which communication takes place. Trolls and conspiracy theorists who spread misinformation and amplify false claims ultimately undermine response measures by stoking an environment characterised by confusion and distrust. As such, communication should be designed in such a way that is aware of the impact the activities of trolls, deniers, conspiracy theorists, or the sensationalist media might have on public health messaging. For example, online misleading or incorrect stories have been found to spread six times faster than truthful ones.[54] Being aware of this (mis)information landscape is key to designing messages that can be effective and account for the impact of information flows. This is why it is important to keep messaging clear, acknowledge uncertainty, and draw upon credible sources.

It is important to understand which media and modes of communication are trusted and who by, so that communicators can harness them to make sure their communication strategy is most effective.[55] Factors such as an individual's age, gender, ethnicity, disability status or place of residence affect the ways in which people engage with risk communication. However, the effect of these characteristics is not consistent across countries. Much depends on cultural factors and the norms, institutions and policies in place, which means that the efficacy of different messaging channels or media will likely differ between countries and communities.[56] Messages should therefore be matched to the specific needs and values of an audience.

6.2.2 Considering trust and distrust in communication design

All risk communication operates within a realm of uncertainty. Trust is widely recognised as being a central pillar of public health crisis management as it enables individuals to judge risk in the absence of comprehensive knowledge or understanding. Building trust with the public is essential for effective risk communication but difficult to achieve in practice. Communication design should be made with the need for nurturing and maintaining trust in mind.

Public distrust of the media and the government has grown exponentially in recent years, a crisis of confidence that science is not immune to.[57] The need for more deliberative, democratic and communicative ways to earn trust has therefore become widely advocated.[58] Risk communication should be seen as a long-term framework for maintaining and strengthening the profile of the relevant agency with the aim to create public trust. The objective of risk communication lies in building mutual trust through communicative processes that respond to public concerns, not just as a means of distributing information. To this end, it is important to factor citizens into these interactions because they constitute the social reality that provides legitimacy to risk communication processes.[59] Using two-way communication systems and

instituting interactive methods of discussion serves as a mean of educating the citizens and obtaining their consent, thereby empowering people and increasing engagement.

Understanding the different forms of trust is key when designing communications. Institutional trust particularly calls for messaging and messengers alike to be transparent, consistent, honest, accountable, and to encourage control mutuality and positive exchange relationships. Control mutuality is particularly important in risk communication: if people do not believe the pandemic or health threat is serious, then they may consider response measures (e.g., lockdowns) to be excessive, potentially damaging trust in organisations and institutions. Risk communication must clearly outline the risk in a balanced way in order to contextualise measures put in place by public health organisations. This will help demonstrate that such actions are proportional to the threat, thereby encouraging trust in an organisation's intentions and capabilities, increasing the likelihood of public compliance with its measures.

6.2.3 Channels or media

One of the first communication challenges faced by decision-makers is the mass of actors and channels of communication that exist during an emergency.[60] With the ever-broadening array of traditional and digital outlets available, each should be considered to see which constitutes the best channel for communicating about a health risk. While there is no 'one-size-fits-all' strategy suited to all emergencies and/or communities, understanding the fundamental characteristics of communication channels and the audience they capture is key to effectively disseminating a message. Organisations must aim to use the right channel for the right job at the right time to connect to the right people.

Traditional and digital media should be part of an integrated and complementary strategy to achieve the successful dissemination of verified information. Over the course of a crisis, the balance of channels used may change. Regardless of which platforms are selected, it is important to coordinate message content. Using multiple communication channels can risk message inconsistency and fragmentation so it is critical to ensure that the narrative remains consistent.[61]

Traditional communication channels are effective for the dissemination of risk messaging. Traditional communication methods might include television or radio broadcasts from senior decision-makers, official statements and briefings, newspapers, informative posters, letters, or information leaflets, etc. However, the emphasis upon traditional media channels - particularly television or newspapers - means that journalists become responsible for setting the agenda, defining what constitutes 'public interest' and how issues are framed or presented.[62] This can be influenced by what private companies believe makes good news, which does not necessarily correspond with a message that balances risk.[63]

Digital communication methods may include social media platforms, blogs, mobile phone-based communication (e.g., through apps), official government websites, etc. Digital communication has the advantage of instant communication and offering a two-way platform for risk exchange between the public and decision-makers. However,

gaps in digital accessibility risk excluding people, particularly those often considered to be most vulnerable to health crises. For example, research shows that the younger generation engages more actively with online channels when crisis information seeking than the older generation.[64]

The advantages of the speed of information dissemination and appeal of social media have brought new possibilities for risk communication of disasters online.[65] It allows for vast amounts of information to be accessed in a digestible format from a range of sources, although these are of varying levels of credibility. Social media has grown in traction as a source of news and risk communication. It offers the public an opportunity to take an active role in two-way communication, disrupting the monopoly that traditional media and vertical health communication strategies have on information sharing.[66] This allows health organisations to obtain a better understanding of misconceptions about health risks and information that the public wants. Providing regular updates on social media is an opportunity for organisations and institutions to build and maintain trust with the public by releasing information about what is known and what is still uncertain. By engaging with the public on social media, organisations can understand what people are worried about, the news they are sharing; and respond to these concerns accordingly.

Social media platforms also offer the opportunity to share information in collaboration with trusted partners through features such as Twitter 'mentions'. This can reduce information inconsistencies and cognitive stress in affected populations who receive conflicting messages. Further, it can broader the reach of an organisation by accessing a wider network of users.[67] Engaging with other organisations online to deliver risk messaging can help improve its efficacy, as message redundancy (i.e., receiving the same message from different sources) increases the possibility that the information is processed and acted on in crisis contexts.[68]

Social networks such as Twitter, Reddit, Facebook, Instagram, and YouTube have become key communication platforms, particularly in times of crisis. Each platform has a different function and purpose so will attract different audiences and communicate in different ways. Younger users often rely on social media more so than traditional methods of messaging, so it is important to integrate it into risk communication channels.[69] However, existing gaps in digital accessibility means that some groups are excluded from messaging such as older populations, those with limited internet access, or people living in poverty. This urges the importance of using social media as part of a risk communication ecosystem, so that different channels will be able to comprehensively reach various networks and communities.

Using social media for risk communication is not without limitations. Some research suggests that the impact of risk communication delivered via social media is less powerful than traditional media.[70] There are several possible reasons for this. It constitutes a fragmented landscape where no one platform reaches all, and there are still many of the most vulnerable not on social media at all. It is often considered a less reputable source, as a recent survey reported that news or information was least trusted when posted on social media.[71] Further, risk communication on social media often lacks mitigation recommendations, which can cause confusion over what

behaviours should be adopted.[72] Finally, the unregulated nature of social media means that anyone can post under any name, which can muddy the credibility of verified expert advice. Developing effective risk and emergency social media strategies is therefore crucial towards preventing confusion, maintaining trust, and combatting mis/disinformation.[73] Producing a set of best practices for risk communication within social media during health crises has the potential to improve the quality of information on social media, thus filling the void mis/disinformation seeks to fill. Social media messaging should therefore be concise, up to date, from a credible source and with actionable advice.

6.2.4 Response materials

In general, the response materials included in the communication activities should explain the reason for the specific risk and why it is reported; in the same way, they should include a simple description of the different security and protection measures, and what role the population plays in some of them.

It is positive that much of the content is oriented towards the most appropriate behaviours and habits that the population should assume, reflecting it, in this way, as an active part of the protection in case of emergency.

It is very important that in preventive information the informative content, whatever its form, avoid or minimize expert, scientific and technical language as much as possible. At times, experts have thought that the population's lack of objective knowledge of the risk is what has produced their low acceptance or rejection, even their indifference.

Therefore, it must be considered that an excessively technical and scientific language, far from reassuring, increases the incomprehension and the psychological distance of the population towards risk. Which, in turn, favours the elaboration of counter-arguments and the increase of bidirectional prejudices (extreme acceptance or rejection) that cause a stagnation in the social perception of risk and in the change of social attitudes towards prevention.

On the other hand, it is necessary to take into account other variables such as the goal of achieving universal accessibility of content for each medium. In this sense, if an organization aims at reaching all groups and especially the most vulnerable, it is necessary to incorporate characteristics such as:

- Content grouping, avoiding over information.
- To use a clear typology. Both the font type and the size, color and contrast must be clear enough so that it can be easily read.
- In the case of including images or text in image format, they should also include alternative texts for screen readers used by people with low or zero vision on their devices.
- Videos should include subtitles so that people with hearing difficulties can identify the message.
- In contexts in which you want to reach a migrant population with little knowledge of the official language, multi-language content should be distributed.

These characteristics are just one example of the sensitivities that must be taken into account if an organization wants to reach as many people as possible. Although there will always be a balance between the time and resources available for the development of the content and the number of people we can reach. Taking these characteristics into account requires some specialization and dedication.

6.2.5 Analysis of the effectiveness of the actions carried out

The main objective of the analysis of the effectiveness of the actions carried out is to determine what are the characteristics of the messages in order to assess which ones obtain greater acceptance or number of interactions, as well as those aspects that the social audience values of the actions developed.

For this, it is important to measure the data emanating from these publications and from the accounts that we are using to spread our messages to guarantee their prompt attention. Knowing this data, the audience will be known and it will help to detect other needs, interests or improvements.

Some of the most important data, which many organizations and brands currently do not use or give the relevance it should, is the interaction of users in said publications.

The importance of our messages, especially in a situation of information in the face of a pandemic crisis, is to be useful and attractive for those who receive it, so they will be more likely to interact with said messages. That is, they will share, like, comment, mention other contacts or accounts of the channel where it has been published, they also could transfer it to other channels where they are also users to share it with their contacts, etc.

To obtain this data, can be used the native tool where the publications are being made or another tool where data can be monitored extensively, with the possibility of seeing it agglutinated or segmented, by the channel and / or accounts used.

Within the data, the interaction, or engagement, the following should be prioritized:

• Likes and shares
• Comments / responses (Number and sentiment)
• Day / s and hours of greatest interaction

Regarding the moments of greatest interaction, it will help us to know our audience even more. We could know when we will be able to have greater impact on them.

As an example, here we show a graph for the same line of contents and publications, but with a totally different interaction in these publications.

In green, we see when the organization publishes, with greater or less intensity and, in blue, when and how much the audience interacts with them:
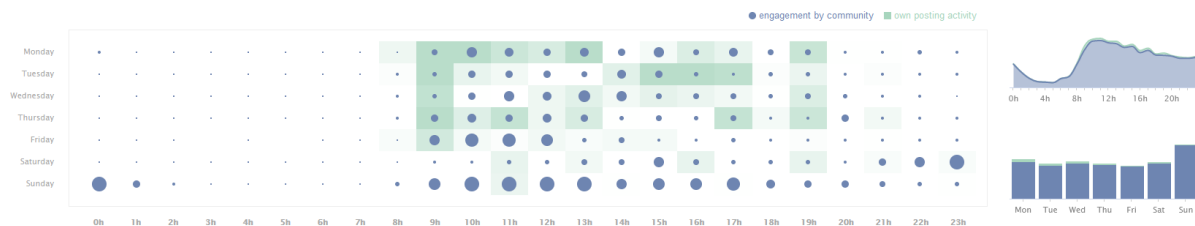

Figure 11 "Publication and audience interaction dashboard"

As we can see analysing the data, there is a good interaction, but the time of publication is not appropriate. Since Sunday morning is where the greatest interactions with that content have been received, at a time when there are hardly any publications made.

As it is mentioned in previous sections, there are other data that we can exploit to know the audience that is interacting, and which is not, such as age groups and the percentage with respect to sex. These are mainly data of interest to know if the strategy is correct and is reaching the desired population groups or not.
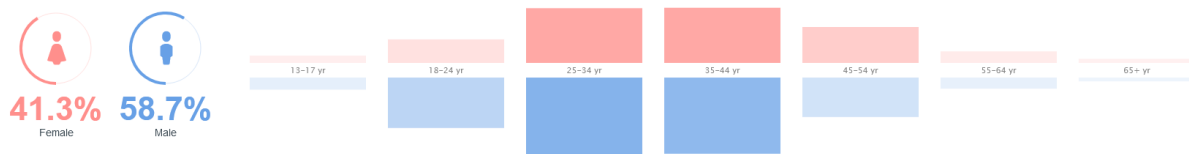
Figure 12 "Sociodemographic dashboard"

Data analysis is also important to measure the effectiveness of the actions and to detect other improvements that do not have to do with the effectiveness in the dissemination of information or intervention in the digital environment of our accounts, but that can provide valuable information to:

> • Improve the usability of different digital sites of the organization, since we will be able to detect if there are incidents, malfunctions or demands for improvements.

> • Improve SEO, since the results will return keywords that users are using and / or interacting with. Being able to use them for our SEO line and strategy.

While it is necessary for organizations to provide clear, reliable and objective information in a pandemic crisis, it is also necessary to measure, and be clear on the line to follow with the publication and dissemination strategy. After the appropriate analysis, recalibrate the lines and actions followed if necessary in order to reach the maximum volume of people or the segment of interest.

7. Guidelines on Risk Communication Principles
7.1.1 Lessons learnt from previous pandemics

Risk communication efforts in response to outbreaks of communicable diseases such as West Nile Virus, Measles, H1N1 influenza and the current COVID-19 pandemic have all provided opportunities to test or develop best practices, or indeed, learn from their absence.[74] Different pandemics and different countries will each require personalised risk communication strategies or, there are a wealth of best practices for risk communication that can be broadly applied. Health authorities' risk communication should be adaptable to the pandemic situation and its development, as well as the diversity of audiences that need to be reached.

The pathogens that fall within STAMINA's remit each provide unique learning opportunities for risk communication practices. West Nile Virus has provided a series of best communication practices and lessons learned. Pandemic influenza is a familiar pathogen with strong resemblance to familiar illnesses such as cold. It is seasonal and therefore anticipated to some degree. E. coli is equally a regularly seen pathogen within Europe. Much of the European risk communication discourse around Measles revolves around vaccine hesitancy and uptake, again, providing a different type of conversation. Each of these pathogens and the lessons learned from their outbreaks each provide distinctive and valuable lessons towards risk communication.

It is also valuable to look beyond the STAMINA pathogens to broader pandemic and epidemic experiences. Communicable diseases manifest in diverse ways and therefore have different risk communication requirements. For example, much can be learned from local engagement efforts during Ebola outbreaks throughout Africa, the utilisation of community networks in polio and Ebola response programmes and organisational monitoring of message effectiveness in Zika and Yellow Fever outbreaks. Although they lie outside of STAMINA's scope, outbreaks associated with these pathogens each provide different and lessons that will help shape a series of best practices for risk communication strategies to be applied within the STAMINA project. As such, some of these broader experiences of communicable diseases will be included alongside the specific lessons learned from the pathogens included in STAMINA.

Some lessons learnt from previous experiences are the following:

- Create a pandemic communication unit.

- Effective risk communication ensures clear objectives, consistent messages among the different communication channels, and transparent and credible decision-making.

- Early reporting of what is known, followed by frequent updates, is by far the best strategy, even if some key facts about the disease are missing. The first communication is critical. Go public quickly even if you have incomplete information. Say what you know, what you don't know, and what you're doing and explain that the information may change when you know more.

- Keep talking. Communicate often. Promise and deliver timely, regular updates. Be clear (no jargon) and consistent.

- Despite the urge to say such things as "I want to reassure you…" "Don't panic…" and "Stay calm…", don't say them. Instead, be reassuring and be calm.

- Avoid incoordination and seek synergies with other organizations that can improve the impact and quality of communication.

- Develop a communication in risk situations that allows to respect data protection, legislation and ethical aspects.

- Create fact sheets and news releases to explain what the specific pandemic is and how to prevent it.

- Messages containing instructions on appropriate or recommended actions must be specific; that is, they need to provide the intended audiences with precise details on 'what, when, how, and for how long'.

- The strategy, manual and protocols will be useless if the people who should be involved in identifying and managing crisis do not receive adequate training. All people who publish content, or who perform functions of service to the population, whether or not they are references, must have a minimum training.

- All stakeholders are represented during pandemic preparedness meetings, which should occur at different levels with the presence of overarching coordinating teams.

- Stakeholders are from all levels (national, regional and local) for both health and nonhealthy sectors.

- Work with technical experts to explain measures and stress the importance and implications of compliance.

- The accuracy of messages is fundamental, as errors in past warnings have resulted in people failing to respond to subsequent warnings.

- Risk communication messages should be (pre-)tested extensively before crisis situations, particularly amongst at-risk and hard-to-reach communities.

- Communicating risk effectively requires not only the provision of information, but also explanations of the complexities and uncertainties associated with the nature, magnitude, significance and control of a risk.

- Establish schedule for updates and releases for the media and the public.

- Alert the public on how they can handle contact situations with infected people

- Risk management processes must be flexible and evolutionary to be open to new knowledge and understanding (evolution, evaluation, iterative process).

- Assess regularly current preparedness (before crisis occurs).

- Plan internal simulations and exercises in order to help personnel understand the procedures and importance of crisis communication and be prepared for real situations.

- Set up ways to alert the public that a crisis has passed and public services will be resumed.

- Evaluate lessons learned after the crisis in order to strengthen appropriate public responses to similar emergencies in the future. Assess the effectiveness of the communications team in each phase and area of work:
    - Assess the effectiveness of meetings.
    - Assess the effectiveness of the internal flow of communications.
    - Assess the monitoring of communications and of the media.
    - Assess the response of the communications media.

7.1.2 For effective communication on different media

Much of the risk communication literature points towards the effectiveness of a multi-channel messaging strategy, providing that the messages and objectives are standardised and remain coherent and consistent across platforms.[75] In New York, for both the West Nile Virus and SARS outbreaks, officials stressed the need for public health actors to speak with one voice across their communications.[76] The West Nile Virus epidemic in the United States is a useful case study for examining a successful communication strategy that still had room for improvement. In New York, a broad spectrum of communication methods were used:

- Television and radio announcements
- Press releases
- Media outreach
- Mayoral press conferences
- Brochures and fact sheets produced in multiple languages
- Phone lines (available 24/7 at the height of the outbreak)
- Website with general information and question and answer sections
- Town hall public meetings. [77]

The written communication materials provided were highly informative, but often included more messages than could be easily digested by the intended audience; creating too much 'mental noise'. Much of the risk communication delivered was negative. For example, considerable attention was paid to what city authorities had not done, rather than what was being done or what measures were planned. Failure to counterbalance negative messages (e.g. cancellations of outdoor concerts) led to an unequal weighting of messaging, overstating the threat West Nile Virus posed.[78] This demonstrates the need for messages to be kept clear, consistent, and easily comprehendible when using a wide range of platforms. Where possible, messaging should reference positive action taken alongside the necessary negative information. Further, although the range of communication channels were broad, it has been suggested that ways to engage stakeholders fully in two-way communication were not used to their potential for understanding public perceptions and concerns. While the risk communication strategy was certainly comprehensive, there were clear gaps that can inform current efforts in risk communication strategy.

The risk communication and community engagement strategies used in several **African countries throughout the COVID-19 pandemic show the importance of a drawing upon several communication strategies**, particularly to help reach vulnerable communities. These include a mix of traditional and digital strategies such as:

- Engaging religious leaders
- Providing information door-to-door
- Social media
- Using networks of local volunteers and community health officers to provide information
- Issuing periodic briefing
- Offering advice through an official WhatsApp number, etc.[79]

The COVID-19 pandemic has shown that the range of different media can often cause confusion and message fragmentation. The government in New Zealand mitigated this by creating a COVID-19-dedicated website so that the public could easily access information without having to navigate different government departments. The website describes the alert system and provides information relating to individuals, businesses, and communities. Information is provided in 28 languages and many translations included accompanying videos to try and reach the diverse linguistic communities across New Zealand.[80]

Outside of the STAMINA pathogens, examples of successful risk communication strategies include the response in Keelung City and Taipei City when the 2007 outbreak of acute haemorrhagic conjunctivitis was controlled in part via a multi-channel risk communication campaign.[81] The way in which the public sees risk varies depending on **when, where, and how** a disease manifests. One study on the Zika virus in the U.S. found that those who used conventional media or government sources for their health information were more likely to be knowledgeable than those who relied on friends, family, or social media for health information. Conversely, in the context of Ebola outbreaks in rural communities it was found that in-person discussion

was the most effective form of engagement. Richards elaborates on this, explaining that villagers had 'face-to-face' social knowledge of Ebola - they could name everyone who had died or survived and trace the pattern. This instituted a sense of mutual accountability that helped them understand the necessity of safe practices in regard to the sick or dead, a sense of knowledge and accountability that was absent in urban areas.⌷ This difference emphasises the **importance of using communication channels appropriate to specific contexts and needs in different situations**.

Virus/Pandemic	Region or Country	Effective communication
West Nile Virus	New York City	Television and radio announcements Fact sheets in multiple languages 24/7 phone lines Website with Q&A section
COVID-19	Africa	Engaging religious leaders Door to door information Social media and mobile messaging Engaging local networks
COVID-19	New Zealand	COVID-19 dedicated website Information in many languages Videos and visuals

Table 7 "Effective communication channels"

Some recommendations to consider when carrying out effective risk communication in different media, extracted from the different referenced literature or coming from the experience of some of the organizations involved in the project are the following:

- The official messages must have a coherence and similar and easy to identify aesthetic in the different media but the content or language can be slightly different depends on the population.

- Limit the number of institutions/people delivering official messages.

- Create a common information point, either a website, an email or a telephone where users can be informed in case of confusion due to over information from different media and accounts.

- Utilise multi-channel risk communication strategies.

- Consider which audiences will be reached by which channels and aim to ensure that those outside of this scope are reached through different methods.

- A good management of traditional media is always essential. Thanks to this management and the good relationship with most of the media, it will be possible to clear up misunderstandings and defuse threats before they turn into crises.

- Training of the workforce and volunteers in the use and participation in social media with their personal accounts in very specific situations and in an unofficial way if required.

- There are effective communication channels across sectors and among stakeholder levels (intra/intersectoral cooperation and coordination).

- The importance of message consistency; specifically, multiple, consistent messages are typically more effective than single messages.

7.1.3   For effective listening/dialogue

To work optimally, public health messaging should listen and respond to the needs of different social groups and communities. This was demonstrated in research with First Nations communities in eastern Australia after the **2009 H1N1 influenza pandemic** showed it was necessary to understand community perspectives and needs first by working with local influencers and including culturally relevant advice around managing risk in households and at funerals.[82]

In 2002, the Louisiana State Office of Public Health (OPH) developed a public health campaign for West Nile Virus. While it intended to educate the public about how to prevent infection, the media campaign may have exaggerated the risks and increased public anxiety as a result. To address this, the OPH recognised the widespread dissatisfaction with the initial campaign, and refined it to be less frightening, focus more on scientific fact, and educate the public on how to mitigate risk.[83] This showed that monitoring risk communication and adapting it is equally as important as its design, as feedback can prove pivotal to improving the effectiveness of public health messaging. A further example of the importance of listening is the need to identify and address the full range of public concerns. In the case of the West Nile Virus outbreak, one key challenge for risk communication lay in the widespread anxiety around the effect of insecticides used to control the virus spread. It is important for messaging to adequately identify and address the source of public concerns and to take the opportunity to address misinformation and public perceptions of multiple and often conflicting risks, such as vaccine wariness in the COVID-19 pandemic.

Recent WHO guidelines call on authorities to implement and draw upon effective **feedback mechanisms**. The literature shows that **communities respond best to local interventions** that involve and respect:

- Local people,
- Culture,
- Language and
- Concerns or opinions;

particularly when communities take ownership of response efforts and participate in decision making, rather than just consulting.[84]

As part of their **Ebola response** strategy, the CDC ran a campaign engaging groups such as journalists and local leaders in affected communities. Rather than characterising groups simply as receivers of information, the campaign engaged them in both the message development and delivery efforts, using their knowledge to inform and improve communication.[85] Understanding these audiences' perspectives and actively engaging them in finding solutions was critical. A literature survey on risk communication in **Ebola, Zika and Yellow Fever** has found that once messages were disseminated, it was important to monitor their effectiveness and adjust them accordingly. One option for this was to use barrier analysis, comparing those who had changed their actions with those who had not, to help pinpoint barriers to behaviour change, understand perceived positive and negative consequences of behaviour changes, and finetune messages accordingly.[86]

Another way effective dialogue has been put into practice was in the 2014 **Ebola outbreak**. Following the implementation of community-based interventions, contextual analysis, follow-up visits, and feedback shaped adjustments were performed to finetune measures to community specific needs.[87] A similar approach was found to be effective in other epidemics that included HIV, viral hepatitis, and tuberculosis.[88] These studies found that effective listening and dialogue is done best when at a local level, in contact with the communities the measures impact, and open to adaptation and change.

Pandemic	Region	Effective dialogue
Ebola	West Africa	CDC: engaging groups in message development
H1N1 Influenza	Eastern Australia	Working with local influencers, engaging with communities and their culture
West Nile Virus	Louisiana	Listening to feedback of campaign, refining messages accordingly

Table 8 "Effective dialogue"

Some recommendations for an effective listening/dialogue in risk situations are the following:

- Implement feedback mechanisms to monitor the effectiveness of public health messaging.

- An emphasis on the 'listening' component of two-way communication can help initiate and sustain dialogue with local communities.

- Carry out active listening to understand the audience and be able both to adapt the message and to convey this feedback to the people who make important decisions related to the risk to be treated.

- Follow-up and analysis in real time is very important, as it will help to detect a crisis situation early. This follow-up will be both of the people who participate in it and of the analysis tools that will help to interpret a large volume of data.

- Active listening will be carried out in the digital environment to provide us with periodic information on how the sentiment of users evolves or on topics of interest to them, within our scope of action.

- Public concerns should be treated as legitimate, explored, and respected as a force that will influence an outbreak's impact.

- Early risk communication was didactic, setting out the facts, telling the public how it should react, and then describing any other reactions as "irrational". Today, effective risk communication is viewed as a dialogue between technical experts and the public.

- Avoid implying that the facts are too difficult to understand.

- Give people choice within a set of guidelines/principles and express confidence in people's ability.

- Give people things to do to improve the situation and provide specific descriptions of desired behaviours.

- Focus on people adopting desirable behaviour.

- Regularly share results of channel monitoring with spokespersons, technical experts, risk managers, partners, and communication team as the basis for creating new communication materials to address misperceptions and public concerns and to adjust, as relevant and justified, health threat response.

7.1.4 For building trust

Relationships of trust with community entities should be established and developed **before a crisis**, so that these networks can be drawn upon should an emergency

occur. Programs drawing upon community networks were found to be particularly effective in this way in both Ebola response efforts and polio eradication programs. Covello submits that in response to the H1N1 pandemic, best practices of nurturing and maintaining trust include **acknowledging uncertainty in risk** communication. He draws upon the example of estimates of H121 vaccine availability in the USA, citing that the distress caused by public concerns regarding vaccine shortages could have been mitigated with open and honest messaging.[89] Another important example is from the German E.coli outbreak, in which the early stages of the outbreak saw officials communicate about a false lead over confidently, setting the stage for a growing perception of official incompetence despite the real source of contamination being found.[90]

Consistency and transparency are two key factors that aid in developing trust between the public and decision makers. More recently in the COVID-19 pandemic, the Prime Minister of New Zealand was lauded for her successful use of social media in communicating with the public to provide a mechanism of transparency. By making regular use of the interactive live broadcasting features available on platforms such as Twitter and Instagram, Prime Minister Arden was able to clearly communicate updates and policies to the population and answer questions from citizens in real time to address their concerns.[91] This kind of empathetic engagement and successful dialogue has been credited as a key factor in maintaining the trust that enabled New Zealanders to embrace strict lockdown conditions, measures which led to the nearly total suppression of the COVID-19 outbreak in the country by June 2020.[92]

Some recommendations for building trust in risk situations are the following:

- The most critical objective in a crisis is to build, maintain, or restore public trust in those responsible for managing the outbreak and issuing information about it.

- Establishing a trusting relationship with the audience prior to a crisis is valuable. This can be done particularly through community engagement and support.

- Acknowledging uncertainty in risk communication is key in establishing trust through transparency and honesty.

- Engage with the public in a coherent and transparent way.

- Engage with the public(s) to offer advice and directly address their concerns to foster a trusting relationship.

- Delayed announcement of an outbreak creates the impression that officials are concealing information and may be more concerned about preventing public anxiety and loss of income from trade and tourism than protecting public health. The resulting loss of trust, right at the start, can prove impossible to regain.

- Communicators must tell – clearly and early on – what they know, what they don't know and what they are doing. It is essential not to hide relevant information.

- Communicators must demonstrate that they and their managers are accountable for what is done, said and promised.

- Communicators must show clear awareness of the public's concerns. In practice, this means monitoring the media, and using other methods to understand changing public opinions about the risks posed by an outbreak and the effectiveness of its management.

- Avoid excessively technical language, as it must be understandable by the entire population without generating further doubts or misinterpretations that could trigger another crisis, or exacerbate the existing one.

- Work with celebrities and influencers that have a good perception by different target audiences.

- Focus on messages of solidarity, kindness, and love and try to appeal to "collective" good.

- Make messages sensitive to demographics of intended target.

- Depoliticize health communication.

- Avoid shaming and blaming people and organizations.

- Avoid being paternalistic and overly authoritarian.

- Acknowledge concerns, hardship and express understanding and gratitude.

- Decision-makers must accept the necessity of informing people so that communicators are not left facing an information hungry audience without a response.

7.1.5 For engaging misinformation

Misinformation remains an issue of pressing concern within the arena of public health. Public health authorities are increasingly facing a battle on both fronts to control the spread of the pandemic and infodemic alike.[93]

One preventative recommendation for addressing misinformation is for organisations to issue messages in a coordinated and collaborative way, thereby avoiding the creation of an information vacuum that may otherwise be filled by misinformation.[94]

Strategies to counter misinformation have been put into practice and questioned during the last COVID-19 pandemic. Individuals and groups that generate this type of information have reinforced their activism for different reasons such as:

- Amplification of the discourse of political leaders
- Feeling of loss of individual freedoms

- Search for prominence
- Need for group membership
- Lack of acceptance of reality and defence of alternative realities

The growth of these groups and their support by certain economic and political sectors casts doubt on traditional techniques to combat misinformation. This discipline is building its foundations again and needs a period of study and reflection to be able to mark new guidelines.

Despite this reformulation, some recommendations for engaging misinformation in risk situations that can be considered effective are the following:

- Counteract misinformation, pseudoscience, malicious, anti-system posts, and / or fake news. Detecting them and making clear communications about the matter to be addressed, in order to nullify these threats.

- Use the monitoring tools and dedicate resources to its configuration to detect and be able to counteract the misinformation.

- Communicators need to understand the need for scientific and medical accuracy, as well as placing scientific knowledge in a political context.

- Avoid drawing too much attention to misinformation.

- Avoid drawing attention to undesirable behaviours.

- Join the conversation, help manage rumours by responding to misinformation, and determine the best channels to reach segmented audiences. Answers must avoid being in long, unproductive debates publicly with profiles that generate misinformation. The most effective responses should be addressed again to all users, providing truthful information.

7.1.6 Vulnerable community specific lessons learned

Lau et al outline protecting the most vulnerable in society in a public health emergency to be not only a moral imperative but an urgent public health objective: 'the health of one is the health of all'.[95] It is important to look towards lessons learned from vulnerable community specific risk communication to see what has worked, and what has not. It is key to note that good communication practices will not make up for bad planning, uninformed policies, or misconceptions about vulnerable populations (e.g., they are homogenous, untrusting, ignore public health messages, lack the knowledge or wherewithal to change behaviours). Equally, trust cannot overcome issues of access to healthcare, credible information, resources, or vaccines. However, as Vaughan and Tinker submit, even the best public health strategies can be rendered ineffective by poor risk communication or failure to engage communities in the planning, response and recovery stages.[96]

Experience with Ebola and SARS demonstrate that **transparency, trust and community partnership** are key efforts for risk communication, particularly within vulnerable groups and communities with generally lower levels of health literacy.[97] In the wake of the SARS outbreak, it was found that 'many jurisdictions are still not adequately prepared to communicate critical information to the public in multiple languages', and that not enough effort had been made to establish relationships with leaders and groups that can reach ethnic minority and disadvantaged communities.[98] One recommended way to respond to community specific concerns is to prepare local messages based on community questions and concerns and pre-test through a participatory process, specifically targeting key at-risk groups.[99] An example of this is engaging women in Sierra Leone as part of an Ebola outbreak response, where a weekly radio show was started to educate about Ebola and respond to questions that came from the community, such as how to manage young children in quarantine.[100] To curb the spread of communicable diseases such as measles and COVID-19 in Nigeria, volunteers were trained to provide **house-to-house risk communication messages** in IDP camps and to vulnerable persons and communities across hotspot locations. This was delivered through **visual methods as well as flyers**. The effectiveness of these efforts was clear, as from May to July 2021 suspected measles cases fell from 63% to almost 39%.[101]

A literature review conducted by RAND Health has provided a series of promising strategies for public health emergency risk communication with vulnerable populations.[102] They note that, while an important step in communicating to different audiences, translation does not ensure comprehension. To conduct successful risk communication in a public health emergency to non-English populations, communication must be culturally competent. The review demonstrates the importance of clarifying key terms (e.g., definition of 'emergency'), addressing linguistic barriers (e.g., the Spanish word for 'chicken pox' is the same word for 'smallpox'), and cultural beliefs about the causes of disasters must be addressed. Research, engagement and training all play key roles in these community-based approaches. When designing risk communication with vulnerable communities in mind, the review further recommends:

> 1) Offering **frequent communication** across **multiple platforms** that are locally and personally (including linguistically), reflecting the diversity of vulnerable groups.
>
> 2) A **community-based participatory approach** to help overcome barriers to success related to trust and available resources for communication dissemination.
>
> 3) The **internet** is a successful delivery method for those who have access, as messages can be easily tailored to accommodate audience-specific needs (e.g., language, images, level of detail).
>
> 4) **Vulnerability assessments** are a critical step in program development to know the needs of different populations during a crisis.

7.1.7 How to use STAMINA tools to help this?

By processing and combining the outputs of different tools, each tackling a specific aspect of a pandemic outbreak, STAMINA provides to risk communicators an integrated view of the situation in which they need to operate and contextual indicators that can inform the design of their communication strategy. Easy access to this integrated view is guaranteed by STAMINA common interface, Common Operational Picture (COP) and particular through the Emergence Map Tool (EMT) interface.
As it was mentioned previously, communication is a part of crisis planning. CrisisHub tool assists crisis managers (either public or private) in creating crisis plans prior to an actual crisis. CrisisHub assists managers/advisors in creating checklists in times of crisis: for instance, crisis communication checklists.

Listening of the public active on social media is carried out by the Web and Social Media Analytics (WSMA) tool. Detailed WSMA analytics and accessible through a dedicated dashboard while a summary is included in the EMT interface. Thanks to these analytics risk communicators can assess which are the most common terms used by social media users to talk about the pandemic. This can provide an insight on the concerns and fears of the portion of population represented by social media users.

Knowing the socio-demographic characteristics of this population, risk communicators can tailor-made messages to address these concerns. This analysis could also reveal that words associated with false information or conspiracy theories are circulating and being shared and hence a specific messaging should be designed to counteract the spread. Assessment of misinformation spreading can further be supported by indication the volume of reliable and unreliable URLs being shared in social media posts. Sentiment of social media posts mentioning pandemic terms is also computed. Particularly, an analysis of posts addressed to or mentioning public authorities is conducted. Risk communicators can identify negative spikes in the discussion involving public authorities. This may signal a deterioration of the trust relationship with social media users that needs to be further investigated and counteracted with timely and effective communication. It is important to notice that WSMA does not provide a channel to direct communication to the public nor it generates ready-to-use recommendation to STAMINA end-users. Its aim is to give communicators several summary indicators of the public discourse on social media together with necessary information to contextualise these indicators and ascertain their reliability and relevance. In this way, risk communicators are given the tools to interpret the indicators and elaborate them into a suitable communication strategy.

WSMA also communicates with the STAMINA Early Warning System (EWS) that identifies when indicators of interest exceed expected thresholds, generates a warning or alert that is then forwarded to EMT. The presence of a warning/alert coming from the social media analysis may indicate a situation of risk which requires a quick response action from the risk communication team. The team preparedness to face the outbreak of crisis or emergencies on social media can be evaluated and improved thanks to STAMINA Preparedness Pandemic Training (PPT) tool, a training scenario builder and execution tool which provides the ability for exercise planners and participants to collaborate in national and international levels.

8. Conclusion/Future Steps

Part of the current literature related to communication in risk situations has been extensively reviewed and mentioned in different sections of this document. However, the latest COVID-19 pandemic has sadly given us the possibility to widely test, applicate and adapt these guidelines to a changing, global and technological world in a real situation.

To build evaluate the practical application of the suggested recommendations and work to enrich them, future steps will focus much upon communication. We aim to conduct interviews with risk communication practitioners across partner countries. This will involve discussing the guidelines with them to see how our recommendations fit with their experiences, contexts, and expertise, and allow us to seek supporting material. This process will focus on enriching and evaluating the recommendations, rather than seeking to inform them. As such, we can evaluate how these recommendations could work in a variety of different contexts, situations, for a variety of needs.

We will also explore these recommendations within appropriate trials along with project partners to understand how they work in interaction with the tools, and to better ground them in practice. Here we will be able to test how they work, if/where any gaps occur, how best to bridge them and revise the recommendations as necessary.

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