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Risk Communication in times of an epidemic or pandemic

David Xiang, Christos Kontos, Afroditi Veloudaki, Agoritsa Baka, Pania Karnaki, Athena Linos.

- *The positives and negatives of using modern technology, such as social media, to communicate risk.*
- *An introduction to risk communication during epidemics and pandemics.*
- *Communicating uncertainty in times of epidemics and pandemics.*

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SUMMARY

This issue of the ASSET paper series, titled Risk Communication in Times of an Epidemic or Pandemic, is dedicated to the discussion of risk communication. Specifically, topics include Communicating about Uncertainty, Communicating Risk in an Epidemic or Pandemic, and a brief comment about the role of new technologies such as social media, and their advantages and disadvantages in risk communication.

Risk Communication in times of an epidemic or pandemic

The positives and negatives of using modern technology, such as social media, to communicate risk

by David H. Xiang[1,2], Christos K. Kontos[2], Afroditi Veloudaki[2], Agoritsa Baka[2,3], Pania Karnaki[2], Athena Linos [2,4]

[1]Harvard Institute of Politics, Director's Internship program, Harvard College, MA, USA
[2]Institute Prolepsis, Institute of Preventive Medicine Environmental and Occupational Health, Athens, Greece
[3]Hellenic Centre for Disease Control and Prevention (HCDCP/KEELPNO), Athens, Greece
[4]Department for Hygiene, Epidemiology and Medical Statistics, School of Medicine, National and Kapodistrian University of Athens, Athens, Greece

As the 21st century moves forward, new technologies that continue to enhance communication, locally and worldwide, constantly emerge. With this progress, communication and access to information, be it through telephone, computer, or tablet, has never been easier or more immediate. This increased ease and accessibility to disseminate information and communicate with many people instantaneously through utilization of these new technologies could become crucial in effectively communicating risk during an epidemic or pandemic.

Many organizations have already begun to utilize social media to communicate risks before, during and after emergencies. After typhoon Haiyan in the Philippines, the World Health Organization Philippines office created Facebook, Twitter, and Instagram accounts to help communicate public health information and preparedness guidelines [2]. A number of European co-funded projects are also looking into incorporating social media both for situation awareness in responding to a disaster and for commuicating risk. Taking advantage of these same social media tools to communicate risk during an epidemic or pandemic would also have tremendous benefits in terms of efficiency and speed of communication. There is evidence from the recent Ebola crisis in West Africa that social media can be used as an effective surveillance response mechanism to improve detection, preparedness and response. [1] For example, during a recent Ebola outbreak in the Democratic Republic of Congo (DRC), social media, could have been used, in local areas that had access to the appropriate technology, to help identify more scattered cases, to raise awareness of treatment programs offered, and to help coordinate community responses to combat the outbreak.

There are many advantages to using new communication technologies like social media during times of emergencies, such as epidemics or pandemics. First, using these new ways of communicating is much faster than traditional methods like using telephones or mail. Second, it is much more efficient and cost-effective. Third, using social media has the potential to reach many more people. Finally, although initially access to social media accounts may not have been a commodity for all, the exponential (or rapid) growth of globalization and modernization, have allowed an ease of access not possible a decade or two ago.

Despite these benefits, using social media for emergencies is not free of negative outcomes. One issue troubling authorities is the ability to

reach all age and population groups, as use of social media may vary. In addition, news transmitted through social media outlets, e.g. Facebook, can be easily distorted creating “fake news” and, in turn, convincing many that the story being presented is not only credible but also legitimate. Additionally, the many voices on social media, all with competing claims and conflicts, make it difficult to streamline the communication and present a uniform message. Finally, the news and risks transmitted are usually condensed into a few brief, memorable, and eye-catching snippets, where the main message can often be lost.

Eventually it will be important to identify if the positives of using new communication technologies outweigh the negatives when used to communicate risk during an epidemic or pandemic. While using a tool such as social media certainly has great potential to be an incredible asset in communicating risk, it should be approached with caution and detailed planning."

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An introduction to risk communication during epidemics and pandemics

by David H. Xiang[1,2], Christos K. Kontos[2], Afroditi Veloudaki[2], Agoritsa Baka[2,3], Pania Karnaki[2], Athena Linos [2,4]

[1]*Harvard Institute of Politics, Director's Internship program, Harvard College, MA, USA*
[2]*Institute Prolepsis, Institute of Preventive Medicine Environmental and Occupational Health, Athens, Greece*
[3]*Hellenic Centre for Disease Control and Prevention (HCDCP/KEELPNO), Athens, Greece*
[4]*Department for Hygiene, Epidemiology and Medical Statistics, School of Medicine, National and Kapodistrian University of Athens, Athens, Greece*

Abstract

Risk communication forms the basis of effective management of emergencies during epidemics or pandemics. It is an inherent and exceedingly important component of successfully combating uncertainties and fears during times of crisis. This paper will first explain the basics of risk communication and, second, identify and suggest potential methods and techniques that can be adopted in order to improve risk communication especially during times of pandemics and epidemics.

1. Introduction

The World Health Organization (WHO) formally defines risk communication as "the real-time exchange of information, advice and opinions between experts or officials, and people who face a threat (hazard) to their survival, health or economic or social well-being" [1]. In times of an epidemic or pandemic, when relevant risks must be conveyed efficiently and rapidly, risk communication plays a major role in the management of the public health (PH) crisis.

Risk communication is one of six core capacities listed in the International Health Regulations (IHR), released in 2005, and evaluated annually. More specifically, the WHO Pandemic Influenza Preparedness (PIP) Framework lists risk communication as a crucial component for both global and individual country preparedness. Effective risk communication not only has the potential to save countless lives, but also preserves the economic, political, and social state of affected countries [2].

However, efficient and successful risk communication is still a challenge in many areas of the world. Risk perception plays an important role in the communication process. Barriers such as lack of resources, coordination, and staff are the usual reasons for a non established risk communication plan.

Moreover, educating/training public health planners and standardizing how the public interprets risk communication are also longstanding issues [6]. Therefore, in emergency situations where a certain country or region is inadequately prepared to combat an epidemic, the WHO deploys its Emergency Communications Network to those affected countries and regions to work with local authorities to establish a foundational risk communication plan [2]. Nevertheless, the time to develop and test a risk communication plan is when there is not a pressing situation at hand. For example, the U.S. Department of Health and Human Services (HHS) notes that the most important components of successful communication are credibility and trust. Credibility is bolstered by the accuracy of information provided and a speedy rate of response, while trust is built over time through empathy and openness [7]. Being transparent and straightforward is also important, as Reynolds and Quinn Crouse write that "an open

and empathetic style of communication that engenders the public's trust is the most effective when officials are attempting to galvanize the population to take a positive action or refrain from a harmful act" [8].

There are many communication techniques and technologies employed in risk communication, such as utilization of social media, general media utilization, and community engagement [1]. For example, a multi-channel mass risk communication campaign that takes advantage of interpersonal, print, and mobile technology channels may prove to be effective, as evidenced by the September 2007 outbreak of acute hemorrhagic conjunctivitis (AHC) that occurred in Keelung City and Taipei City that was contained and controlled through a multi-faceted risk communication plan [3]. On the other hand, an example of community engagement that does not rely heavily on technology is shown by the success of a 2007 intervention carried out in Senegal. In this study, the program mainly relying on reinforced counseling through improved communication between health personnel and patients, not only improved patient outcomes regarding tuberculosis (TB) infection rates, but also led to increased adherence and compliance to TB treatment [4]. Finally, another component for a country to establish a durable risk communication plan is through health worker education and training, given that how a nation's healthcare system responds to epidemics is highly dependent on its workforce and its experience and ability to cope with unexpected situations [5].

2. Methodology

We carried out an extensive literature review and document analysis that focused on three main areas of interest. First, we isolated sources that thoroughly explained the fundamentals of risk communication. Then, we reviewed sources that documented cases of successful risk communication techniques referring to recent epidemics, such as the Zika and Ebola epidemics, that utilized effective risk communication methods like using social media platforms or community engagement.
We also briefly touch upon risk communication in a European context, in terms of more specific challenges and improvements. Lastly, we offer our suggestions for how to improve risk communication in times of an epidemic or pandemic.

3. Results and Discussion

3.1 Potential methods to improve risk communication and their challenges

While every country will require a personalized risk communication plan that is optimal for their own specific needs, there are suggestions for improving risk communication that can be internationally acknowledged. Recent outbreaks and epidemics have provided a great deal of experience and information that can be distributed globally and thus help other countries prepare for impending epidemics or pandemics.

Due to their involvement in managing the Zika outbreak in Latin America and South America, the Pan American Health Organization (PAHO) and the WHO released a set of guidelines and advice for combating outbreaks such as Zika. Their main recommendations include [9]:

- Standardizing messages through key representatives and information channels such as the Ministry of Health and public health institute's websites and other official news outlets and channels.

- Improving internal and external coordination through establishing trustworthy

relationships with journalists and educating the public about health concerns through community engagement and social media transmission.

- Coordinating action with other federal departments by forming multidisciplinary teams, collaborating to develop a uniform timeline and roadmap of various duties and responsibilities, and recording areas of improvement.

In line with this guidance, many affected countries implemented a Mosquito Awareness Week; however, the data collected with regard to social media impact and local news reach indicated that despite the governmental support and widespread implementation, this community engagement plan did not have a tremendous and immediate impact [9].

The reason some risk communication programs do not work varies, and may be unique to each situation. However, certain problems may include political opposition, the unequal distribution of risk in a society, and a toxic culture that breeds an epidemic of fear and a blaming system. These were the issues isolated after the WHO released a general set of guidelines in response to risk communication errors due to the 2003 severe acute respiratory syndrome (SARS) epidemic. Their five main lessons learned for improvement were: 1) build trust, 2) announce news early, 3) be as transparent as possible, 4) respect public concerns, and 5) always plan in advance for the unexpected [10]. While these points of action are theoretically obvious and desirable, the actual implementation of these points is often very difficult.

After the chaos of the Ebola outbreak from 2014 to 2016, the TELL ME (Transparent Communication in Epidemics) project experts assembled a series of lessons gained from experience on how to communicate risk more effectively to affected areas. Three main deficiencies were noted: 1) the weak health systems in West Africa, 2) the widespread fear of many inhabitants, and 3) the general atmosphere of mistrust generated by previous institutional conflict [11]. As indicated above, trust is very important but is not the only factor in order to have effective risk communication. TELL ME experts also released a proposed framework model that emphasizes the importance of the public sphere in regards to governmental organizations, civil society groups, the pharmaceutical industry, and community-based public institutions. It highlights the importance of using social media and mass media to engage with the public and foster a spirit of community before a crisis, so that communicating risk becomes more efficient during emergencies [12].

3.2 Improving risk communication in a European context

Many challenges for effective risk communication also exist in the European context. The European Centre for Disease Prevention and Control (ECDC) released a literature review in 2013 that analyzed effective risk communication in Europe, and noted that because of Europe's multicultural and multilingual composition, it is difficult to uniformly transmit information. However, to address this issue, a more dynamic and fluid system of risk preparedness and surveillance, where cooperation and collaboration is stressed, will be crucial to ensure effective risk communication. Many countries have heeded this advice – Germany has invested nationally in electronic systems to better monitor infectious diseases while the Czech Republic has passed national legislation that formulates more

comprehensive guidelines for the response to communicable diseases [13]. Investing in new technology that will make it easier to share cross border information and creating the legal framework aiding government authorities to develop concrete risk communication plans are commendable first steps to eventually improve risk communication throughout Europe.

4. Conclusions

Effective risk communication is a desirable sound basis in the response to any crisis, but especially during the management of an epidemic or pandemic. Nevertheless, it remains a challenge in Europe and the developing areas of the world.

The relationship between the public, the governments, and health systems is fragile and easily disrupted, but effective risk communication depends on these relationships. Building trust with the public is achieved over time with early, transparent, straightforward communication preferrably by trained health professionals.

By using new technologies and methods of communication, improvements in risk communication around the world are being made with every passing day.

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Communicating uncertainty in times of epidemics and pandemics

by David H. Xiang[1,2], Christos K. Kontos[2], Afroditi Veloudaki[2], Agoritsa Baka[2,3], Pania Karnaki[2], Athena Linos [2,4]

[1]*Harvard Institute of Politics, Director's Internship program, Harvard College, MA, USA*
[2]*Institute Prolepsis, Institute of Preventive Medicine Environmental and Occupational Health, Athens, Greece*
[3]*Hellenic Centre for Disease Control and Prevention (HCDCP/KEELPNO), Athens, Greece*
[4]*Department for Hygiene, Epidemiology and Medical Statistics, School of Medicine, National and Kapodistrian University of Athens, Athens, Greece*

Abstract

Communicating uncertainty in times of an epidemic or pandemic is challenging for scientists and authorities in affected areas. However, uncertainty will always be present, as there is never an emergency where everything is accounted for with a clear solution. This paper identifies the challenges of communicating uncertainty and suggests potential methodologies and actions that a country or affected region can take to best communicate it.

1. Introduction

Uncertainty, or when there is insufficient scientific knowledge to fully understand a disease, poses a significant challenge to effective risk communication and the management of an epidemic or pandemic within a country or region. The reasons for uncertainty vary– it may be that the health or government officials do not disclose all necessary information, or that it is a complex disease and there is not sufficient scientific background to combat the epidemic (e.g. Zika virus infection). This uncertainty can breed mistrust between multiple parties, and thus makes effective risk communication much harder to achieve. Moreover, uncertainty can cause officials to seem weak or incompetent, which creates room for dissent and chaos in the affected regions. Additionally, uncertainty promotes the spreading of rumors and false information that escalate public anxiety [1].

There are two examples documented in a 2004 World Health Organization (WHO) Report on Outbreak Communications, where uncertainty led to the breaking down of risk communication between the government, media, and the public, thus inhibiting a country's ability to successfully and quickly contain a disease. The first case study refers to Malaysia during an outbreak of viral encephalitis in 1999 [2]. There was a negative disconnect between the government's actions to combat the outbreak and the perceived attitude of pig farmers, whose animals were severely affected. The pig farmers believed that the government, despite its immediate actions in communicating risk and carrying out measures to contain the disease, was hiding information and not addressing the correct disease. When Malaysian scientists and the Centers for Disease Control and Prevention in the United States (CDC) confirmed that it was indeed a new pathogen, the trust between the farmers and the government eroded, and resulted in a national investment of millions of dollars in public health communication to regain their citizens' trust The second instance was the 2004 outbreak of Hantavirus in Brasilia, Brazil which exacerbated the already existing mistrust between the public and the government. A steady line of communication between the two parties was lacking. Thus, this led to the media filling in the ambiguous details with falsehoods further promoting uncertainty between the people and the government. To make matters worse, this made it even harder for the government to communicate their uncertainty regarding the disease.

2. METHODOLOLGY

We conducted a comprehensive document analysis and literature review targeting three general areas of interest. First, we reviewed previous cases that involved communicating uncertainty. Second, we looked at potential studies that identify methods and techniques to help communicate uncertainty. Third, we analyzed other reviews and papers that identify the existing challenges regarding communication about uncertainty.

Based on our review of the current literature, we were able to provide suggestions for dealing with uncertainty, adapted from previous guidelines and methodologies. We also explain ways to come to terms with uncertainty, and acknowledge that uncertainty will always be present during epidemics or pandemics or, in fact, any public health crisis.

3. RESULT AND DISCUSSION

3.1 Challenges of communicating uncertainty during epidemics or pandemics

The evolution of risk communication strategies involving uncertainty has changed dramatically with time. Fischhoff [10] describes how instead of openly sharing the data and engaging with the public, communicating risk has become simply trying to make partners out of the public and inform them when necessary. However, while making communication a two-way street is theoretically sound, there is often a gap in implementation due to the public feeling left out and not placed on an equal playing field in terms of knowledge acquisition [11].

A 2015 study shows that only 4% of the almost 1,000 German participants asked about the Ebola outbreak during a time when Ebola was commonly referred to in the news could correctly answer questions relating to the transmission of the Ebola virus, showing disconnects in communicating uncertainty and discerning fact from fiction [12]. Moreover, in Israel, a country that was relatively unaffected by the Ebola outbreak, a study showed that 25.4% of the respondents incorrectly assumed that the Ebola virus was airborne, and more than half believed that the information provided by the Ministry of Health regarding Ebola was insufficient, and most participants wanted the government to publicly address the uncertainties regarding the outbreak [13].

Yet, there will always be a great deal of uncertainty during epidemics or pandemics. Scientists have differing opinions, there is a constant stream of information and new data being recorded, and it is difficult to streamline prioritization of reports and news [15]. Moreover, an epidemic or pandemic might trigger social, political, or economic turmoil in an affected area, so there will be an expected spike in uncertainty and disorganization regardless of the public health infrastructure in place. Therefore, while progress is being made to reduce redundancies and ambiguities with regards to risk communication, there will always be uncertainty; thus, it is crucial to understand potential methods to best convey this uncertainty.

Glen Nowak, the Chief of Media Relations at the US CDC in 2006, outlined some challenges when communicating about uncertainty in times of epidemics or pandemics, briefly summarized here [16]:

- Scientific standards regarding the presentation of information differ drastically from how news and media corporations present information.
- News reporting and mass media are not always the primary vehicles for education or awareness of a disease.

- Political leaders are not accustomed to dealing with the transparency required in times of an epidemic or pandemic.
- The public may not accept the scientific evidence, for a variety of reasons such as mistrust or improper dissemination of the news.

3.2 Potential methods to mitigate spread of uncertainty and better communicate uncertainty

One potential way to help communicate uncertainty to the public is through awareness and educational programs, preferably implemented as early as possible in order to be prepared for emergency situations. For example, disease awareness and information campaigns targeted toward the prevention of possible diseases that could become epidemics should be implemented in rural regions or areas where communication between the public and the government is not continuously maintained [3]. Moreover, using certain verbal cues like the words "likely" and "unlikely" in addition to relying more heavily on the numerical representation of information with frequencies and probabilities will not only minimize uncertainty but also convey the uncertainty in a more straightforward manner that allows for more transparent risk communication [4].

Another practice that aids in improving communication about uncertainty is truthfulness and transparency when acknowledging limitations of knowledge about an epidemic or pandemic. Bol [14] writes that the "continuous supply of supporting information on scientific uncertainty is not perceived as a deficit on the part of those providing the information, but rather as a sign of competence", especially in times of crisis during an epidemic or pandemic. Being frank, with frequent updates on the assessment of the situation, will reduce carelessly negating serious risks and creating an unrealistic feeling of safety. For example, during the 2009 H1N1 influenza pandemic health officials in Australia openly acknowledged the uncertainty regarding how the pandemic might unfold while also simultaneously offering reassuring statements that confirmed they had an effective plan, which ultimately resulted in a calmer public and more effective risk communication [5]. Instead of hiding uncertainty, government officials should proclaim their uncertainty, which will both foster trust and allay the potential risk of fear spreading uncontrolled, according to Rosenbaum [6]. The US CDC's approval rating of 60% dropped to 37% when they overestimated US hospitals' ability to manage Ebola in 2014 [7].

Moreover, establishing a trustworthy and stable relationship with media sources will also promote effective communication about uncertainty, as mentioned by the European Commission's Community Research and Development Information Service [8]. The US Institute of Medicine has already noted that media plays a vital role in transmitting public health concerns, in attracting the attention of both government leaders and private citizens [9].

To sum up, these five strategies, adapted from the 2005 WHO Outbreak Communication guidelines, should be taken into consideration when communicating about uncertainties, whether it is a national government, a regional authority, or a local organization [17]:

- Build trust through straightforward communication and admit to gaps of scientific facts, if any.
- Always aim for complete transparency when sharing information.

- Report findings as soon as possible.
- Take into consideration the requests of the public and have contingency plans in place for meeting the requirements of risk communication in times of crisis.
- Do not avoid hiding potential dangers or appeasing the public by projecting overconfidence, and do not mislead the public with regards to the current progress being made to combat an epidemic or pandemic.

4. Conclusions

During an epidemic or pandemic, uncertainty will be present, but how one communicates this uncertainty is key and aids effective risk communication. Therefore, while governments try to find ways to eliminate uncertainties, it is also very important to be transparent about their existence and research how to communicate them. This not only prioritizes the safety of the public but also strengthens the public's trust.

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