

Communicating Risk in the Age of Information Plenty: Implications for Policy and Practice of Emerging and Persistent Infectious Diseases (EPID)**

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Summary

Policy makers and public health practitioners are wrestling with how to communicate and mitigate risks of infectious diseases through various mechanisms at the national level (e.g., country governments), as well as the transnational level (e.g., the World Health Organization [WHO]). The 20th century-designed communication planning, however, is confronting a 21st century reality — a revolution in communication and information technologies with significant consequences for Emerging and Persistent Infectious Diseases (EPID). The consequences of this revolution include: the generation of a large amount of information and transmission of this information at speeds that allow little control over how it is interpreted by different groups; difficulty among institutions and social groups in assessing and communicating risk accurately; and widening communication inequalities among individuals, groups, and nations. To address current challenges in communicating about disease risks, a new transnational information and communication “architecture,” with the following four core elements, is needed: (1) development and maintenance of capacity to assess, interpret, and communicate risks as expeditiously as possible; (2) continuous surveillance of the information environment to monitor how risk communication about EPID is occurring, to facilitate quick and prompt action; (3) promotion of policies and practices that mitigate the inequalities in communication of risk; and (4) continued research to develop evidence-based risk communication strategies.

Current realities

The ways in which infectious disease risk information fares, once it enters the public arena, is of primary concern. This process may be examined under three broad areas: the generation (origin) of information, the public arena, and the reception and effects of risk communications.

Generation of risk information. It is now widely recognized that communication is a critical part of any risk management strategy and in contemporary societies, determining how and what to communicate to the public is a complex process. To make decisions regarding both the timing and content of risk communication, coordination and communication among different agencies is necessary. However, the decisions usually are made in a complex environment where authority may be spread over different agencies and the political, social, and cultural context of the audience varies widely. From a communication perspective, questions may include mundane issues such as who decides to take the lead on communication, what policies and procedures are in place, and when and how to release the information. More critical and complicated decisions involve how the information is framed and communicated to diverse audiences whose social, cultural, and economic backgrounds may vary considerably. It is also critical to consider the communication infrastructure of a given country, both in terms of trained professional communicators and the penetration of different media to reach different publics.

The public arena. The degree of control exercised by the authorities over risk communication messages is immediately challenged and seized once it enters the public arena. As a result, the information environment on EPID is possibly more complex than it has ever been, raising questions about how and what to communicate about risk. Three broad groups, with varying degrees of specialization, expertise, and resources, influence how the information is further diffused to the public: journalists, the entertainment media, and interest groups.

One, journalists are important gatekeepers between the authorities and the public. On a positive note, since reporters use communications from authorities to generate many story ideas (e.g., press releases and press conferences), sometimes these messages are included almost verbatim in the news stories. On the other hand, journalists are under deadline pressure, prefer clear story lines, and work under limitations of space and time. In addition, few journalists have a formal background in science or medicine, which could have positive or negative consequences for the accurate communication of risk information. Two, a developing body of work is documenting the clear and often powerful effects of entertainment media on risk-related behaviors such as tobacco use, obesity, risky sex, and violence. Little, however, is known about the role of popular culture and entertainment media in communication and interpretation of the risks of EPID and their mitigation. Three, the revolution in Information and Communication Technologies (ICTs) is upending the way people and institutions generate information, communicate, and interact with each other. The Internet has successfully led to the steady erosion of the oligopoly of conventional media over the generation and dissemination of information. “User-generated” content allows risk information to be interpreted by anyone, which is actually done by millions of bloggers and microbloggers through social media. Bloggers and stakeholders have broad-ranging credibility, expertise, and ideologies (or even kookiness). They offer multiple interpretations of “facts” about infectious diseases and ways to “mitigate” them, potentially sowing seeds of confusion.

Reception and effects of risk communication. This relates to the ways in which audiences encounter information on risk influences their knowledge, attitudes, and behaviors with regard to EPID and efforts to mitigate EPID. Audiences may encounter risk information (e.g., on avian flu) in two ways. The most common encounter may be characterized as “incidental exposure” — information obtained through routine use of media for news or entertainment (e.g., television, newspapers or magazines, Internet, and radio). In addition, social networks are an important source of exposure and interpretation. Audiences also encounter risk information when actively seeking information either for themselves or for others, especially when facing a threat of any kind.

A variety of personality, individual, cultural, and social factors influence exposure, seeking, and subsequent risk communication effects. Of note, at the individual level, people’s perceptions of the safety of mitigating actions, such as vaccines, influence whether they take action. Trust in authorities is also a critical determinant of whether people follow and act on information. Both personal susceptibility as well as severity of the threat may also influence how they receive and act on information. The role of social class is of enormous importance as a factor in influencing exposure, understanding, and acting on risk information — a phenomenon characterized as communication inequalities. It is now well established that social class (usually measured as schooling) plays a significant role in what kind of channels people access and use, as well as the degree to which they can process that information and act on it. In general, people who are relatively poor are less likely to use channels such as the Internet and print media, and have difficulty in processing the information and limited capacity to act on it. Numeracy, the ability to interpret quantitative information, is also strongly associated with class. Communication inequalities are a worldwide phenomenon, both among individuals and nations, with profound implications for communication of risk about EPID.

Scientific opportunities and challenges

Related to the 21st century information environment, five scientific challenges and opportunities are especially critical: (1) Information on EPID is complex, competing with other topics; this raises questions about how to attract and maintain the attention of the audience; (2) How are communications about risks of EPID tracked and how can misinterpretations be countered? No known models of information surveillance systems exist at this point; (3) It is widely accepted that those who are among the poor, and in lower- and middle-income nations, are at great risk of EPID and its consequences compared with those who are well off and in wealthier nations. By extension, the specific effects of culture and class on EPID risk information remain to be explored; (4) In a related vein, we need more

scientific evidence on what role different media, genres, and formats play in communicating about the risks of EPID and with what consequences; (5) Lastly, ICTs, particularly mobile media, offer an enormous potential to reach people who have been bypassed by earlier communication revolutions. Mobile technologies and related software, such as text messaging, in combination with social media, could be exploited to bridge inequalities and disparities, providing a historic opportunity. Their value remains an empirical question.

Policy issues

Recommendations for science, policy, and practice in the context of EPID include:

- **Development of a transnational risk information and communication architecture that involves national and international agencies.** With the development of ICTs, there are many opportunities to tap the software of the cyberinfrastructure to track, analyze, and disseminate risk information about EPID. Public-private partnerships, where the private sector develops the technologies and the public sector fields and tests them, should be created. Optimally, an organization such as WHO should take the lead in association with other agencies such as the International Telecommunication Union (ITU) and the private sector.
- **Investment in human capital to assess, interpret, and communicate risks of EPID as expeditiously as possible.** Given the pace of movement and the rapidity with which infectious diseases and information are spread, it is critical that countries have capacity in the form of risk communicators (e.g., Public Information Officers) within their health agencies. While multilateral organizations, such as the World Bank or WHO, can provide the technical assistance and lead training efforts, much of the action is likely to occur within the governments of the countries themselves.
- **Investment in the science, dissemination, and implementation of evidence-based risk communication strategies.** Building scientific capacity for basic research in risk communication science is in the purview of a variety of sectors. Research institutions and universities should take the lead here with support from the private sector and government.
- **Promotion of access to ICT to mitigate inequalities in risk communication.** Given the enormous inequalities in communication, even the most thoughtful risk communication strategy is unlikely to result in effective mitigation. National governments should recognize the value of access to ICT, and offer subsidies where necessary to promote access.

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*** A policy position paper prepared for presentation at the conference on Emerging and Persistent Infectious Diseases (EPID): Focus on Mitigation, convened by the Institute on Science for Global Policy (ISGP) October 23–26, 2011, at the University of Edinburgh, Edinburgh, Scotland.*