

extracted item in the former bottom category as “It is more reassuring to know that pathogens are being transported.” This reason agrees with a report that people always seek information (19).

However, as shown in the extracted items in Table 2B “It is also misleading to have only some knowledge,” insufficient knowledge causes problems sometimes. For example, when the aftershock forecast issued by the Coordinating Committee for Earthquake Prediction included an inadequate explanation on the difference between magnitude and seismic intensity, it resulted in incorrect rumors during the Great Hanshin-Awaji Earthquake in 1995 (22). Consequently, as indicated in the extracted item “Conduct an opinion survey” in Fig. 2, it might be necessary to investigate before disclosing information. Moreover, it was considered necessary to examine what information to disclose, including methods of transport, and to clarify the reasons for classified information or to sort out all relevant information. From this, the following measure for communication with nation will be needed.

It is reported that effective communication about risk to the public and the media has an essential role within the public health measuring system (23). This effective communication about risk is called “risk communication.”

The techniques of risk communication are applied in a way that never causes panic (19). In the FGI, as an extracted item “People would feel more at ease without knowledge about pathogen transport, but it could lead to a panic in the case of an emergency” was picked up; if the method of risk communication is wrong, a panic might be caused. Accordingly, “how to practice risk communication” seems to be the key point for solving the problems regarding pathogen transport. Although an extracted item “Conduct an opinion survey” is made for the problem of whether the information should be disclosed or not as shown in Fig. 2, it is thought that application of techniques of risk communication are necessary for the opinion survey. On the other hand, as shown in some extracted items in Table 2B that “There are people who would abuse such information” and “I do not think all people are well-intentioned,” disclosing information could possibly backfire.

Through this research, 2 key points in the “Present status” were confirmed: (i) the public does not have knowledge about the present status of pathogen transport, and (ii) the matter involves the public image regarding pathogens. It is thought that, at first, when we communicate with the public, we have to consider the former key point. In the FGI, the interviewees did not know about pathogen transport, nevertheless, they recognized that pathogen transport is necessary, based on information provided by the interviewers. This suggests that risk communication in the FGI was accomplished successfully; as shown in Fig. 3, the most important point of pathogen transport, “Necessity of pathogen transport,” is deduced by the interviewees. This also suggests that it is important for professional and other related individuals who understand the necessity of pathogen transport to maintain public health through infection testing, public health services, scientific research, vaccine development, and other health services, and to transmit relevant information to the

public through active communication. Next, it seems essential that bias created by the popular image of life-threatening pathogens be considered when we communicate with the public. The extracted items “It is a matter of image not fact that mixed loading is actually unfavorable” and “I am concerned about mixed loading” shows that the general dislike of mixed loading and the limited courier services are due to the unfavorable perception of pathogens.

In conclusion, it was thought that adequate methods of risk communication were needed to avoid a panic. With regard to information disclosure of pathogen transport and implementation of risk communication, all information should be provided in a manner that can be understood easily (24).

The research in both areas is new as public opinion is unclear and/or the public had not considered the existence of or the need for pathogen transport. This research is a strategic first step for future measures, and quantitative research is necessary in the future. The availability of this information is increasing and therefore, both the transporter’s handling techniques and the public’s rational appraisal of those techniques are expected to improve. Of course, at first, proper training regarding the packaging of pathogens is required.

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Conflict of interest None to declare.

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