

Newsletter

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PANDASIA FIELD STORY

Understanding Zoonotic Spillover Risks and Building Pandemic Preparedness

Understanding the connections between people, animals, and the environment is central to pandemic preparedness. Effective communication can help communities find, understand, and act on health information, while awareness of social and environmental factors can support a broader understanding of zoonotic spillover risks.



In a Thai village, this can begin with noticing changes. A farmer might observe unusual animal behavior, or a family may hear that someone nearby is feeling unwell. A Village Health Volunteer (VHV) might receive questions from neighbors about these concerns. These everyday observations provide a starting point for discussing health risks in communities where people live closely with animals, farms, and the environment. Knowing how to respond is the next step. Residents may seek information through their phones, television, or radio, listen to village announcements, or consult trusted sources such as a VHV, livestock volunteer, health worker, or community leader. PANDASIA brings together social and biological data to study zoonotic spillover and disease emergence in high-risk settings in Thailand.



Using One Health and EcoHealth perspectives, the PANDASIA project determines potential pandemic drivers across natural, rural, and urban settings. This project aims to use this understanding to inform evidence-based preparedness strategies and public health measures. As part of this project, research involving residents from ten villages in the Soi Dao and Pong Nam Ron districts of Chanthaburi Province explores how communication can help people find, understand, and act on information about human, animal, and environmental health. It also examines how awareness, motivation, and the capacity to take preventive action contribute to healthier practices. PANDASIA aims to develop community-driven, co-created interventions and communication strategies that strengthen pandemic health literacy and preparedness among local communities and public health authorities.

Preventing Future Pandemics

Pandemic prevention involved understanding the environmental, social, behavioral, and institutional factors linked to zoonotic spillover risks. The PANDASIA WP9 report, Deliverable D9.1, Relationship Diagram for Potential Zoonotic Spillover Risks, brought together stakeholder perspectives on how these factors were connected. As shown in Figure 1, the framework for PANDASIA WP9 Task 9.4 showed how understanding health risks and receiving information through suitable channels could encourage people to learn about health and take preventive action. These actions included caring for their own health, animal health, and the environment.

The framework explored how learning and adopting these practices could help people become more able to make decisions and take action to protect their health. It also considers differences in age, income, education, gender, and length of residence in the village to understand how people from different backgrounds learn and adopt these practices.



Placing Communities at the Center of Prevention

Communities played an important role in recognizing and responding to potential health risks. People living in rural and forest-edge communities could observe changes in animal behavior, unusual animal illness, or environmental conditions that could signal emerging concerns. This perspective emphasized the need for prevention efforts to consider people's livelihoods, cultures, and reasons for their practices. It also highlighted how working with communities to identify practical and acceptable ways to reduce risks could support trust, local ownership, and the use of community knowledge in pandemic preparedness.

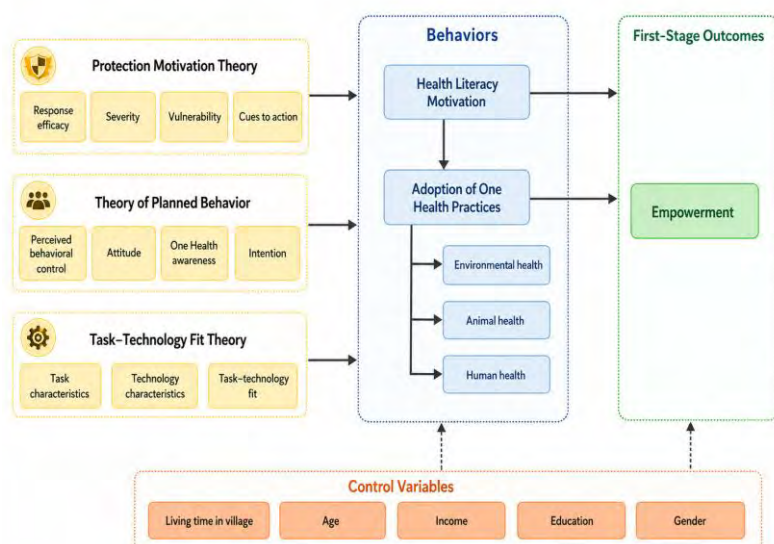


Figure 1. PANDASIA WP9's conceptual framework linking health literacy, One Health practices, and empowerment.

Turning Knowledge into Action

Community-based prevention should integrate knowledge, practical support, and meaningful engagement. Public health communication can educate people on how zoonotic diseases emerge and how everyday practices, like safe food handling, proper livestock management, responsible wildlife interaction, and recognizing unusual health events, can influence exposure. However, information alone may not suffice; communities often face economic, practical, or social barriers that hinder the adoption of safer practices. Thus, prevention strategies should be developed collaboratively with communities, considering their knowledge, experiences, cultural practices, and priorities.



Recognizing and Communicating Unusual Events

Effective prevention hinges on being attuned to unusual events and understanding how to communicate concerns through appropriate community and health channels. Changes in animal behavior or environmental conditions might not always indicate a zoonotic threat. However, the ability of communities and frontline actors to notice, discuss, and communicate these unusual events can enhance situational awareness and prompt timely action when further assessment is necessary.

Strengthening One Health Coordination

At the policy level, the interconnected nature of zoonotic risks necessitates enhanced coordination across sectors. A One Health approach unites public health authorities, veterinary services, agriculture, environmental agencies, local governments, researchers, and communities. Effective preparedness relies on improved collaboration mechanisms, information sharing, joint surveillance, coordinated risk communication, and rapid response. Local stakeholders should play a meaningful role in policy development to ensure prevention strategies reflect the realities of communities living and working at the human-animal-environment interface.

From Causal Understanding to Pandemic Literacy

Pandemic literacy means more than knowing the names or symptoms of infectious diseases. It includes understanding how health risks arise, recognizing connections among human, animal, and environmental health, and evaluating information to make informed decisions about prevention. The Causal Relationship Diagrams (CRDs) in the PANDASIA WP9 report, Deliverable D9.1, showed how stakeholders understood connections among environmental changes, animal interactions, human movement, knowledge and beliefs, and information technology. These diagrams helped make complex relationships visible and identify possible opportunities for prevention. Figure 2 illustrated a proposed pathway from understanding these connections to recognizing risks, evaluating information, making informed decisions, and taking preventive action. It highlighted the possible roles of health literacy, One Health awareness, motivation, confidence, and suitable communication in supporting this process. Understanding risks is therefore a starting point. Helping people access and evaluate health information, and supporting their ability to act on it, could strengthen preventive practices across human, animal, and environmental health. The framework also included feedback and learning, showing how community experience could inform future understanding and action.

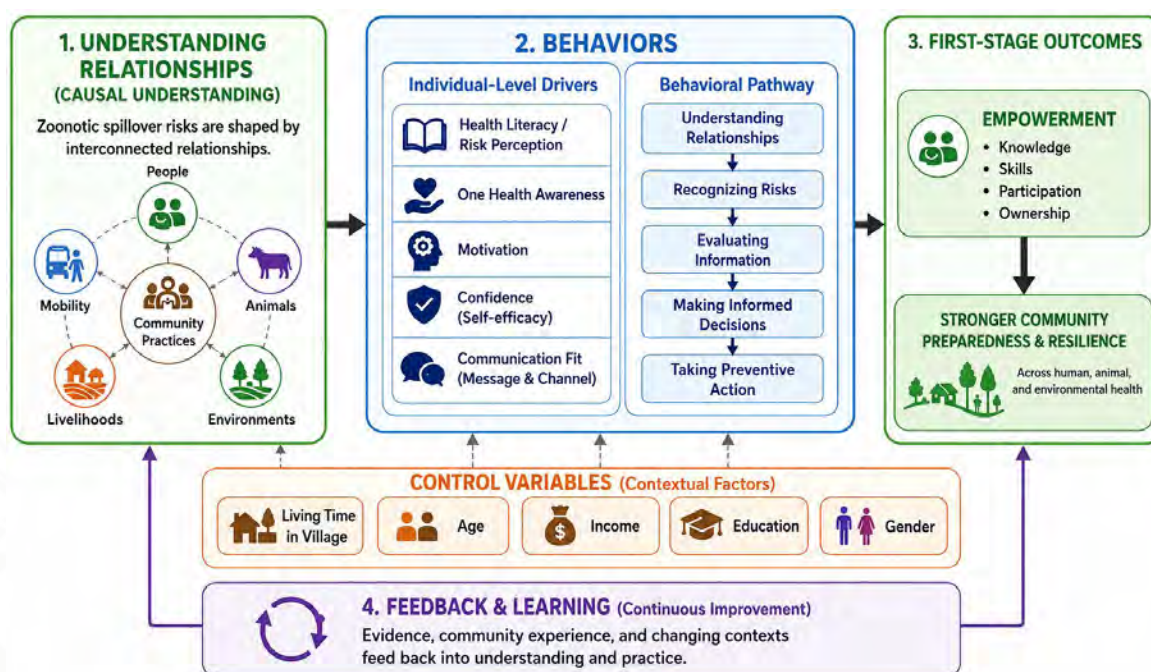


Figure 2. A communication pathway from understanding interconnected zoonotic risks to pandemic literacy and community preparedness.



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