

The model of participatory management by community and local authority for hazardous animal disease surveillance and risk communication: Study from the lesson of Avian Influenza outbreak

Abstract

This study aims to formulate participatory surveillance and risk communication model for avian influenza control suited for village condition in rural area, where backyard poultry domestication prevails. A high and low risk areas represented by Pitsanulok and Chiang Mai provinces were study sites. From each of these 2 provinces 8 Local Governments(LG)s were purposively selected by their size and urbanization stage.

A qualitative research was mainly used in this study, whereas quantitative data by questionnaire survey was supplementary to verify and quantify the remarkable findings of qualitative result. Qualitative data were collected by focus group discussion, then by in depth interview of stakeholders in avian influenza control. They were people from regional governmental authorities at all level (provincial, district, and tambon) involving interior, livestock, public health and public relation division; as well as representatives from LG (politician and civil officer), village headman, volunteer and villagers. Private mass media representatives and municipal veterinarians were also included. For questionnaire survey, 400 households were proportional conveniently selected from both provinces. 75% of questionnaires were predetermined for rural area.

Model-Draft 1 was formulated; by analysis of strong and weak points of practicing surveillance and risk communication method, and by adoption opinion of villagers about what would be best suited to their conditions. Draft 1 then was tested for acceptance, practicability, expected effectiveness and appropriateness by criticism and discussion within stakeholders focus groups; 2 groups from each province. Opinion and idea were again collected and analysed for design of Model-Draft 2. Then the Model-Draft 2 was subjected to be scrutinized again within the last focus group, comprising of all stakeholders from both study provinces. The opinion and idea were considered and used for improvement of the second draft, resulting in the final proposed Model.

Study results revealed that people were lack of **knowledge** in Avian Influenza; and LG played no role in surveillance and passive role in disease control.

Risk communication was well done in distributing information and awareness within villages through the existing announcing amplifier from village headmen or from tambon administrations (LG)s. There were however lack of communication to neighboring villages in order to stimulate preparedness for outbreak response and prevention. Conventional mass media such as radio and television were very effective in widely distributing news from central government to villagers. Mass media professionals both from private and public sectors revealed that transparency in public relation will create more confidence and compliance of disease control measures. Reportable risk should be practicably defined.

Control measures: In existing system in some area, farmers were told to report any chicken death. After reporting there were many times no response, which led to no more report from farmer. Therefore the definition of reportable case should be not in every death chicken, but when there were occurrence of chicken plague. People managed to dispose chicken or duck carcass by burial; but they did not well protect themselves from being contracted the virus. Public campaign on this issue should continue. Villagers were satisfied with the disinfection measure and believed it could prevent outbreak. Anyhow there was obviously no practical plan where, when and how disinfection procedure should be followed. The practicing measures did not comply with general principle of disinfection. The failure determinants of animal movement control laid on its objective which was depopulation of the whole poultry in the area rather than a real movement control. Farmers in general disagreed that their chickens were sick and should be culled, resulting in avoidance of the measure. To use only law enforcement without acceptance from villagers in this regard, the expected achievement could hardly be reached. Villagers demanded laboratory diagnosis before applying culling measure; and would like to shorten the diagnosis time. At least veterinary investigation should be conducted before culling animals. If necessary the depopulation radius should be most limited. This could be substituted by closely monitoring and cooperative movement control. Compensation for culled poultry was obviously helpful and supportive to getting cooperation from villagers with the measure, even they felt compensation was lower than real price. Commercial farm owners were fully agreed with closed rearing system. The backyard chicken and ducks could in contrary not use that system. Workload and feeding cost were major factors. It was obviously seen that government could not achieve its goal to prohibit raising ducks in rice field. In deed the temporally “closed” during an outbreak should be adopted and would be acceptable as well as practicable. Villagers could perform stable with bamboo or nylon net.

Organization and working culture: There were several official organizations involving in various aspects of disease control, which mixed up their roles. When outbreak occurred LGs were reluctant to work and waited for request. They had also not enough qualified personnels. There was almost no veterinarian working at field level. Only villager volunteers were available. No liquidity in human resource management. LGs did not have strategic plan, action plan and budgeting plan preparing for AI control. In comparison, LG could play more roles in managing to solve immediate problem than village headman could do. This due to LG has its own budget and manpower as well as materials and equipment. Anyway village headman plays an important role in communicating with villagers. They were respective to villagers. Avian influenza control mission should be now transferred to LG. Central government shall support them with budget, public health and veterinary public health personnel.

Model for participatory surveillance, risk communication and emergency management for avian influenza in village: Principle of the proposed model laid to 2 key community organs namely Moobaan and Tambon, which should have duty to perform clinical surveillance, report disease and do risk communication as well as conduct emergency response to halt disease outbreak and spreading with full support from former regional governmental authorities. Village headman and LG president are key persons at Moobaan and Tambon respectively; they should be assisted by an AI committee at each level, which has an authority to decide to deploy emergency response as planned for countering disease outbreak. To increase sensitivity of this surveillance system the definition of reportable clinical cases is any form of poultry plague, which is familiar to villagers. To accelerate the reporting and counter check with clear responsibility, the report chain comprises of 2 parallel channels, a formal and informal up report to 2 superiors in the chain. In action - when there is an outbreak fitted to definition, villager should immediately report to Moobann Volunteer (MV). MV formally reports to MV leader and informally to Village headman, as well as take immediate action at the outbreak spot. MV leader reports formally to Village headman and informally to Tambon Public Health Officer. Village headman formally reports to LG and informally to District Livestock Officer, and call for emergency meeting to decide whether to use MooBann Contingency Plan. Simultaneously Moo Baan is alerted waiting Tambom order of emergency response complying with Tambon Contingency Plan. Immediately after getting report from Moo Baan the president of LG shall report to AI Center at District Office, and call a meeting of Tambon AI committee to decide to use Tambon Poultry Plague Contingency Plan. Tambon has full authority to take action

independently without any delay to stop outbreak and communicate risk to adjacent villages. This model changes key actors from district office to LG. Regional governmental offices shall have duty to technically support LGs, laboratory diagnosis, risk communication at district level, report to province, monitoring effectiveness of epizootic surveillance schemes practicing by LGs and transferring central government policy to LGs.

Model's outcome: This participatory approach brings villagers to manage their own interest, preventing loss of their poultry from contagious diseases. Acceptance and cooperation with their own emergency response including culling and temporally raising poultry in closed system can be expected. Community responsibility and development can be strengthened with self reliance. AI surveillance, risk communication and risk management are systemically implemented with clear duty, responsibility, timely action and completely area coverage. Economic impact can be expected from growth in village poultry population. The backyard system can be strengthened with possibility to verify its organic pathogen free product. Backyard chicken is then high value product for rural people, because it needs low investment but gives high income. Human AI can be efficiently prevented when source of infection in poultry is immediately eliminated. The model ensures sensitive surveillance with rapid response supported from LG, who can decide to implement emergency action within 3 hours after outbreak occurs. This will prevent high loss in economic with very low cost. The model can be modified to monitor other zoonoses as well as agricultural hazards in rural area.

Key words: avian influenza control, poultry plague, model of participatory community based surveillance, local government, village headman, risk communication, emergency management, backyard poultry.