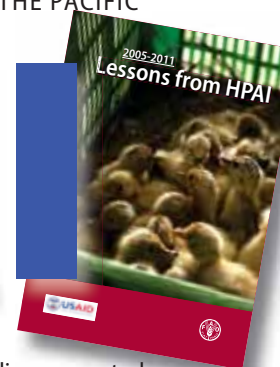




LESSONS LEARNED *from* HPAI



Seven years of working to control and prevent highly pathogenic avian influenza (H5N1 HPAI) may not have put an end to the virus, but at the Emergency Centre for Transboundary Animal Diseases Regional office for Asia and the Pacific (ECTAD-RAP), the virus has been a teacher. In coordinating governments, agencies and donors to put up a regional

response to the threat of a pandemic, ECTAD-RAP has gleaned deep understanding of what works and what does not. As the emphasis broadens now from H5N1 HPAI to include a range of high impact infectious diseases, ECTAD-RAP takes stock of the work of the last seven years to identify, among other things, what the lessons were. This edition of ECTAD-RAP News departs from our usual format to present some of the most telling of these lessons learned from HPAI.

POLICY

Legislation that cannot be enforced is usually counter-productive.

UNENFORCEABLE LEGISLATION WHICH goes against the grain of age-old but economically sound trading practices is counter-productive, as communities and stakeholders will continue with the *status quo* and resist health inspection and other assurances of disease-free status. An assessment of regulatory capacity should be part of developing policies that require enforcement.

An example is the Nepal law that bans the direct import of poultry, eggs and other poultry products across the highly porous 800 kms border with India. The legislation, which runs counter to economic good sense as

these products are significantly cheaper on the Indian side, has effectively turned cross-border trade into a clandestine activity. This has also reduced opportunities for authorities to inspect poultry and poultry products imported thus.



COORDINATION

Understanding developmental issues is critical—even in an emergency response.

BY MAINTAINING A development perspective while working in emergency modality, FAO has helped transform the scope and

perspective of disease control, widening the focus to include livelihoods and socioeconomic factors, nutrition and other development aspects. This has in turn helped foster a spirit of professional partnership and collaboration between FAO, donors and governments, based on an acknowledgment of comparative advantages.

SURVEILLANCE

Targeted surveillance needs more work; passive surveillance is unreliable.

TARGETED SURVEILLANCE CAN be useful for detecting the virus in healthy birds, but systems of tracing to source are not yet reliable. More effort is required to understand how to monitor virus levels in the population to measure either the impact of control measures or to get early warning of a possible upsurge in the level of virus activity.

Passive surveillance can be unreliable especially when commercial operators conceal outbreaks because the compensation offered is not adequate to fully cover their economic losses. Proxy indicators of disease outbreaks such as market prices also need to be monitored to detect hidden problems.

EPIDEMIOLOGY

It is important to regularly isolate and characterize viruses.

THE IMPORTANCE OF regularly isolating and characterizing viruses



from field outbreaks has been well recognized in Indonesia. The early problem with poor vaccine efficacy in Indonesia was recently rectified by incorporating the appropriate virus strain compatible with the circulating viruses in the field.

Monitoring and characterising field virus isolates for changes in behaviour may assist in signalling vaccine failure, and possible spread and new outbreaks of disease. For example, the genetic subgroup of H5N1 Clade 2.3.2.1 was able to break through the vaccine used in Viet Nam. The increased susceptibility of wild birds to this genetic sub-group is associated with the spread of the virus to Bangladesh, Bhutan, China, India, Japan, the Republic of Korea, Lao, Myanmar and Nepal.

LABORATORY CAPACITY

The secret recipe for developing capacity is backstopping.

ESTABLISHING TECHNICAL WORKING relationships with national



laboratory staff and offering backstopping support has been an important feature of the FAO strategy for strengthening labo-

ratory performance and developing viable and active laboratory networks. This has involved visiting laboratories, helping with on-site solutions to problems, liaising with regional organisations, developing standardised approaches for diagnosis and conducting workshops.

The global OIE/FAO Network of Expertise on Animal Influenza (OFFLU) has had a strong technical engagement in the region, which has helped spread technical advances and strengthened linkages between national laboratories and the global network. The close linkages have also improved the submission of viruses to international reference laboratories, leading to deeper understanding of viral strains in circulation.

Laboratory experts must be made available when needed to help national staff set up equipment, establish diagnostic tests and prepare Standard Operating Procedures (SOPs). On-site training was greatly facilitated by experts 'in-residence' who helped speedily introduce new technology into laboratory systems. In several countries, a national level network that linked laboratory scientists to field epidemiologists helped improve the outcomes of diagnostic efforts.

BIOSECURITY

Local solutions work better than imported ones.

CONSIDERING THE COMPLEXITY and variation within the commercial poultry industry throughout the region, solutions developed locally through direct engagement with stakeholders have been more effective than those 'imported' from other regions.

Training and capacity building exercises in cleaning and disinfection practices were most



effectively delivered by trainers with practical experience in adult learning methodologies as well as cleaning and disinfection rather than trainers provided by an equipment vendor or other sources.

SOCIOECONOMICS

Socioeconomics must be integrated into any disease control project for it to be effective.

DISEASE CONTROL FAILS and leads to non-compliance when it does not take socioeconomic factors into account. Stakeholders' reasons for non-compliance should be understood and economic data collected in real time in an integrated way as part of any disease control measures. Interventions should be linked to or integrated with the needs of disease control authorities to make outputs useful to those who make decisions and policies.

The response should be proportionate to the risk.

DISEASE CONTROL INTERVENTIONS should be assessed for likely animal and public health benefits against potential negative socioeconomic impact and the response adopted should be proportionate to the assessed risks. Over-reaching or over-reaction can distance stakeholders and set up barriers that can take a long time to break down. For example, global concerns about H5N1's pandemic potential were not shared by producers whose livelihoods depended on the output from small flocks.

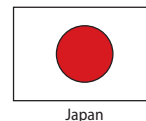
Compensation should reflect the economic value of poultry.

WHERE CULLING IS used for control, compensation for slaughter must reflect the market value of the relevant class of poultry. However financial resources for compensation schemes are difficult to obtain, and without control practices and the cooperation of stakeholders, compensation alone might not improve control. Incentives for compliance are not always as expected.

Financial incentives coupled with financial risk minimization are key drivers for change. Interventions that bring such benefits should communicate them effectively and credibly to those



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who are expected to comply with the changes proposed.

COMMUNICATION

Awareness alone does not change behaviour or practices.

AWARENESS CAMPAIGNS HAVE generally produced no evidence of behaviour change in communities or traders, who remained unconvinced of the risks and were principally guided by economic factors.

For instance, in Nepal, a country where HPAI communication largely failed to bring about behavior change, messages lost their credibility through over-emphasizing the threat of human fatalities. In addition, the initial emphasis on the negative aspects of HPAI rather than the benefits of adopting hygiene-based measures like cooking at high temperatures alienated commercial producers, who saw their livelihoods threatened by the messages.

The motivations of communities and producers to adopt safe production practices are still not well understood due to limited analysis of socioeconomic and cultural realities. Communication specialists should compile their knowledge of target audiences through diverse tools including predictive modelling, socioeconomic research, supply chain and market chain analyses, cross-border studies, Knowledge-Attitude-Practice (KAP) studies and participatory research. Communication campaigns developed on such a rich understanding are less likely to alienate audiences who are at risk from highly pathogenic and emerging diseases.

Participatory approaches work better.

PARTICIPATORY APPROACHES SUCH as those used in the Field Epidemiology Training Programme for Veterinarians (FETPV) and the Participatory Disease Surveillance and Response (PDSR) programme in Indonesia have

VACCINATION

Need to develop planning tools for vaccination

IN SEVERAL COUNTRIES vaccination was implemented once the virus had become well established in the poultry population. Field strains are evolving as predicted, making it necessary to check the suitability of vaccines regularly. National authorities want the capability to check vaccine efficacy.

Mass vaccination campaigns for small-holder poultry have been difficult to apply effectively as owner cooperation is not assured, free range poultry are difficult to catch, vaccinators quickly tire of the task, and flock immunity levels wane quickly because of the rapid turnover in flocks. In addition, different vaccines would be required for different poultry production systems.

Risk reduction

Vaccination programmes that interfere with production cycles such as broiler and meat duck production have a smaller chance of being implemented and so vulnerable populations build up in low biosecurity systems. Risk reduction has to arise either from strengthened exclusion measures or improved vaccines. Often vaccination is seen as a substitute for good poultry farming practices and biosecurity.

Duck farmers tend to be less interested in HPAI prevention and vaccination as there is limited discernible clinical disease and mortality from infections. On the other hand, commercial operators are not forthcoming about their problems with vaccination programmes. Despite the information available about the proper application of vaccine regimens, some commercial operators do not follow instructions, which sometimes leads to vaccine failures.

There has been a tendency for post vaccination monitoring to be biased toward vaccinated groups and so these expensive surveys do not give an accurate indication of vaccination coverage and efficacy at the population level. As this monitoring is generally conducted by the responsible jurisdiction, there is also no incentive to change to more population-representative sampling. Advocacy is needed to promote epidemiologically sound practices.

The notion of an exit strategy is confusing for authorities who recognize both that the virus is endemic in some populations and that for the



present there is a large risk in stopping vaccination. FAO understands that it may be some years before the virus circulation is reduced to the point where vaccination may be discontinued. Moves to change vaccine programmes are best done in steps and reiteratively at country level.

Optimum vaccination

The ideal vaccination protocols for modified vaccines is to use two vaccinations for meat birds and three to four vaccinations for breeder and layer birds with currently available vaccines. The use of a single vaccination for meat ducks does not provide consistent immunity and protection, especially in the presence of maternal antibodies. New vaccines are needed to overcome technical, economic and logistical challenges and to provide incentives for producers to use them.

Vaccines for HPAI are relatively new to the poultry field and many questions arise that require better evidence than has been available for determining policy. There is still no systematic guidance based on sound theory and proven practices for countries regarding vaccination policies. FAO is currently developing a vaccination planning tool for decision-makers and this will be made available once it has undergone due processes of testing and validation.

The success stories, challenges and lessons learned from seven years of concerted programming in the region are helping inform future programming against HPAI and other emerging infectious diseases



demonstrated that outcomes improve when relationships are established with communities.

Field veterinarians have participated well in surveillance and outbreak control activities,

but need to be trained in basic epidemiology and the proper collection, storage and submission of samples. In the case of PDSR, there was an increase in passive surveillance and self-re-

porting when communities were brought in participatively.

Establish cross-sectoral collaboration early.

COHERENT MESSAGES ACROSS sectors reinforce those messages within the community. It is important to establish the cross-sectoral approach at the beginning of the project as it is more difficult to do once the different sectors have become set in their thinking and operational modalities.

Building government capacity is key.

THE LACK OF communication capacity within Ministries of Agriculture and Departments of Livestock Services to respond

effectively to HPAI at the beginning of the crisis created significant imbalance in the effort to control the disease and engage communities. Communication capacity needs to be enhanced at these levels.

From a disease control and prevention perspective, different government sectors should be equally competent in communication, and doors to inter-sectoral communication need to stay open at all times.

Also, building commercial poultry health competency within local government veterinary services is necessary for improved communication and trust between local government and commercial poultry farmers.

