FROM FRAMEWORK TO PROGRAM DESIGN

The Framework is just that….a structure to design a program. And one component – like Communication or Reporting and Surveillance - does not stand alone but fits into a bigger picture that is integrated and connected.

This section will demonstrate how to use the Framework to design and implement a program and how to measure its success. Using ducks in Vietnam as the example, let's design a plan.

Step 1. Biological Determinants

Epidemiology shows that ducks can be carriers of the H5N1 virus – however, ducks may be infected without manifesting signs of illness nor do they die rapidly.

Exposure to the virus can cause sudden and rapid death of poultry

Once we know the issue we need to know more about the situation or context in Vietnam….

Step 2. With awareness and understanding of the background context (economic, socio-cultural context)…

Duck flocks are important to the ecosystems of Vietnam and duck herders move their flocks through the countryside to eat leftover rice, insects, snails and weeds that damage rice crops. This movement–if the ducks are infected–carries the virus from one place to another and can infect domestic poultry. During these movements the ducks may come into contact with high pathogen concentrations from other flocks or from infected wild birds, and the virus can survive and spread in the soils and water in the path of the moving flocks

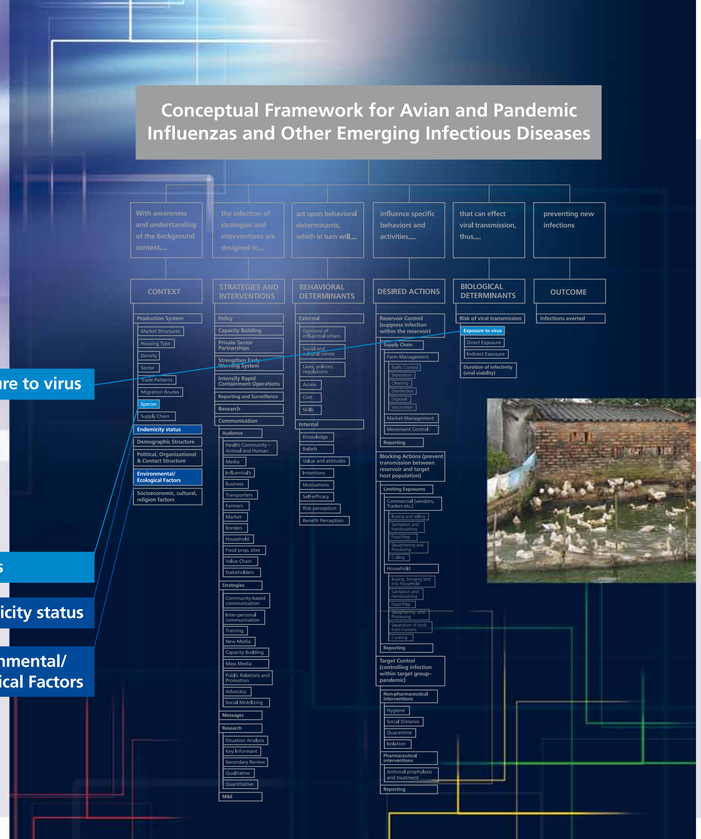
Added to its positive contribution to rice production, traditional free-ranging is economically advantageous for duck farmers. With the increased cost of feed, free-ranging saves up to 50% the cost of feed in the south and 20% the cost of feed in the north.

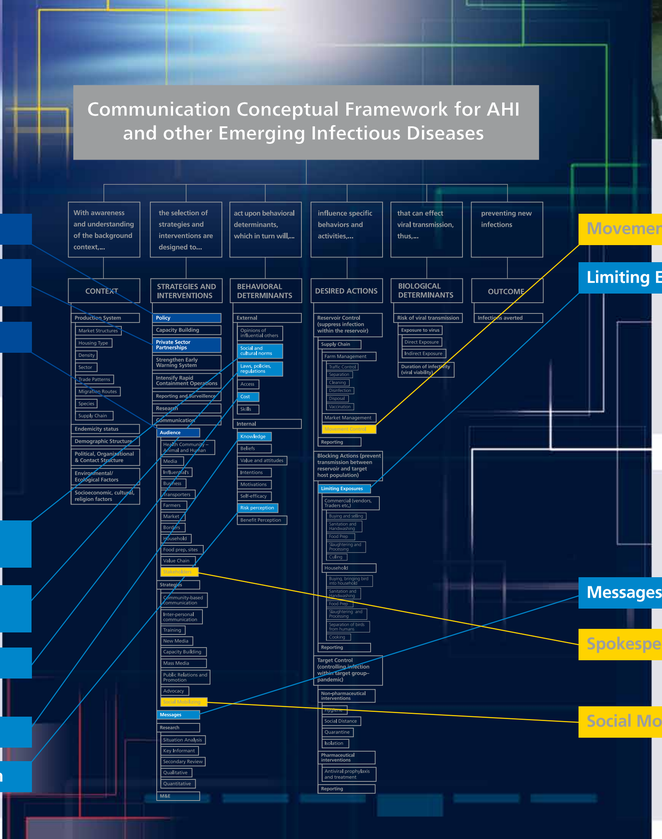
The government of Vietnam embarked on a mass vaccination policy to protect poultry from catching HPAI which causes avian flu. Vaccination for ducks, unlike for chickens, requires two doses of the vaccine 28 days apart. Research shows that many duck farmers are unaware of the required two doses. Ducks also should be vaccinated from 15 days or older. However, many duck farmers think that vaccination is harmful to young ducks resulting in their reducing the vaccine dosage.

Species – Ducks

Endemicity status – Systemic in ducks

Environmental/Ecological factors – Ducks are critical part of ecology balance and healthy rice production





Step 3. Selection of strategies and interventions are designed to…

Policy – Vietnam has instituted policy to vaccination poultry which has expanded to include ducks.

Public-Private Partnerships – Work with the Vietnam Poultry Association and Duck Herders to assure implementation of the policy

Communication

Audience – Farmer/Duck Herders

Stakeholders

Step 4. …act upon behavioral determinants, which in turn will…

External

Laws, policies, regulations – Duck vaccination is new policy
Cost – income and expenditures to enact the policy
Social and Cultural Norms – Duck herders moving ducks through rice farms of Vietnam has been the practice for centuries

Internal

Knowledge - about the virus and how it is transmitted is low
Risk perception is low because this is how they have done it for years and ducks die but doesn't infect them

Step 5. Influence specific behaviors and activities (desired actions)

Movement Control – Realistically will ducks not move? No, so emphasis on **Blocking Actions**

Because of its economic benefits both to rice producers and duck raisers, the control of free-ranging has been unsuccessful. A more realistic action is to ensure that ducks which are vaccinated correctly. Many provinces, for example, require that duck farmers show a certificate of vaccination before their flocks can be allowed to free-range.

Limiting Exposures

Step 6. Back to Strategies and Interventions

What do we do to reach our **Audience**

Messages – what resonates with farmers
Materials – low-literacy guides of **Spokespeople** – Who do they believe or trust for information

Strategies – *Interpersonal communication* via duck herders, agriculture workers and veterinarian volunteers to increase knowledge and explain risk and introduce the vaccination policy

Social mobilization

Monitoring and Evaluation to measure awareness and number of vaccination and the effectiveness of the campaign

Communication. Policy. Surveillance. Service Delivery. All of these are critical in addressing infectious disease outbreaks. To achieve desired results – prevention and effective response to minimize deaths – these and other program elements must work as part of a comprehensive, logical approach in which the intervention strategies selected can be expected to have a clear and direct impact on specific audiences or market segments. The AI.COMM Project has worked with USAID to design a conceptual framework for planning communication and other types of interventions to control avian and human influenzas and other emerging infectious diseases. The framework illustrates the broad array of factors which influence disease outbreaks and the interconnectivity of these factors – the pathways that need to be followed to ensure that program strategies will lead to risk reduction and disease control.

The framework focuses special attention on the substantial role that human behavior plays in the transmission of infectious diseases, and illustrates how communication programs are one of the essential strategies for ensuring that efforts to prevent and control emerging infectious diseases are more effetive.

The "Conceptual Framework for Avian and Pandemic Influenzas and Other Emerging Infectious Diseases" is based on a six-part premise that:
1) With awareness and understanding of the background context, 2) the selection of strategies and interventions are designed to 3) act upon behavioral determinants, which in turn will 4) influence specific behaviors and activities, 5) that can affect viral transmission, thus 6) preventing new infections. In each step, users of the framework can select an array of choices for the context (e.g., production systems, political and organizational structure, endemicity, socioeconomic factors); strategies and interventions (e.g., communication, policy, capacity building, private sector partnerships, reporting and surveillance); behavioral determinants (e.g., external or internal); desired actions (e.g., reservoir control, blocking actions, preventing infection within the target group); biological determinants (e.g., risk of viral transmission); and outcomes (e.g., infections averted).

The goal of influencing behavioral determinants is to see a direct influence on a desired action of interest. In this application of the framework, these actions relate to the suppression of infection within avian populations, the prevention of transmission from birds to humans, and the control of infection from person to person. Beyond avian influenza, the framework is conceived on the principle that such actions have a direct effect on the biological transmission of emerging infectious diseases, particularly through direct or indirect exposure to the virus. The ultimate goal of our strategies and interventions, working through the pathways described, is to avert future infections.

The framework is composed of six columns that link the social, economic and demographic context on the left-hand side with the biological system on the right-hand side. This background context (production, political, demographic and environmental systems) influences the selection of strategies and interventions that are appropriate for the planned response. A range of strategies are available to policy makers, government officials, private sector and non-governmental organizations, academics and others that design and implement interventions and research projects.

The strategies selected operate on and influence a range of behavioral determinants, both external and internal. Understanding which determinants are important for a particular intervention comes from situation analyses, literature reviews, and formative research conducted at the beginning of the process.

The AI.COMM framework is built around three major strategies for controlling avian and human influenzas: Reservoir Control (suppressing infection within the reservoir); Blocking Actions (preventing transmission between reservoir and target host populations); and Target Control (controlling infection within the target group). This structure is designed to help planners identify specific program interventions that will have maximum impact in support of these three strategies.

Strategies and Determinants

The conceptual framework recognizes a number of possible strategies that can be used in designing a response. Besides communication strategies, interventions can draw up on designs that use policy, capacity building, private sector partnerships, surveillance and research, and others to affect change.

In the planning and use of AI communication strategies and messages, intended audiences are systematically targeted according to perceptions of their external and internal **behavioral determinants** of risk and consequence of infection. External determinants include the opinions of others, social mores, laws and regulations, and issues of access and cost. Research assists in understanding internal determinants such as perceptions of self-risk, motivations, benefits, and self-efficacy, among others.

The process of combining communication tools with audience needs and perceptions is important in affecting the behaviors that will reduce susceptibilities and exposures to infection. The framework increases the transparency of the pathways by which the components of an intervention can be effective, by targeting behavioral determinants, and underscores the limited utility of program outcomes, such as increased knowledge of transmission, if an accompanying change in any of the desired actions does not occur.

Desired action

This conceptual framework relies on the supposition that a series of desired actions are necessary to prevent exposure to AHI infection. The framework proposes three means of controlling infection in a target reservoir system: 1) reservoir control, which suppresses infection within the reservoir (an animal population, and in the case of H5N1, prevention of bird to bird infection; 2) blocking tactics, to prevent transmission between the reservoir (birds) and target host population (humans); and 3) target control, which is aimed at controlling infection within the target population, such as between humans to control a pandemic event. These three control strategies correspond to reducing the within—and between species transmission rates of infection. The benefits of each approach will vary according to the relative contributions different transmission processes make to the overall prevalence; processes which are still indeterminate and are dependent upon further research.

In this case, the optimal control strategy to **prevent reservoir infection** depends upon desired actions at supply chain sites such as farms, markets and within transportation systems. These actions may include separation, cleaning, disinfection, disposal and vaccination. Additionally, the reporting of outbreaks is vital in suppressing further spread.

Blocking control, which would prevent transmission from the reservoir to the target host, depends on limiting exposures to humans in commercial and household settings through the strengthening of sanitation practices, and the buying, selling, slaughtering, processing and food preparation of poultry products.

Target control and the actions required to control a pandemic situation require pharmaceutical interventions, if feasible, but a much more likely scenario is the roll-out of non-pharmaceutical interventions such as improved hygiene, social distance techniques, quarantine and isolation.

Affecting change on these desired actions will result in the planned outcomes of reduced viral transmission and infections averted.

Conceptual Framework for Avian and Pandemic Influenzas and Other Emerging Infectious Diseases

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For further information or copies, please contact:
AI.COMM
AED
1825 Connecticut Avenue, NW
Washington, DC 20009
Tel: 202.884.8000

www.avianflu.aed.org
www.pandemicpreparedness.org

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