



National Newcastle Disease Control Plan

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National Newcastle Disease Control Plan Sri Lanka

Department of Animal Production and Health

Progressive Control Pathway - Newcastle Disease

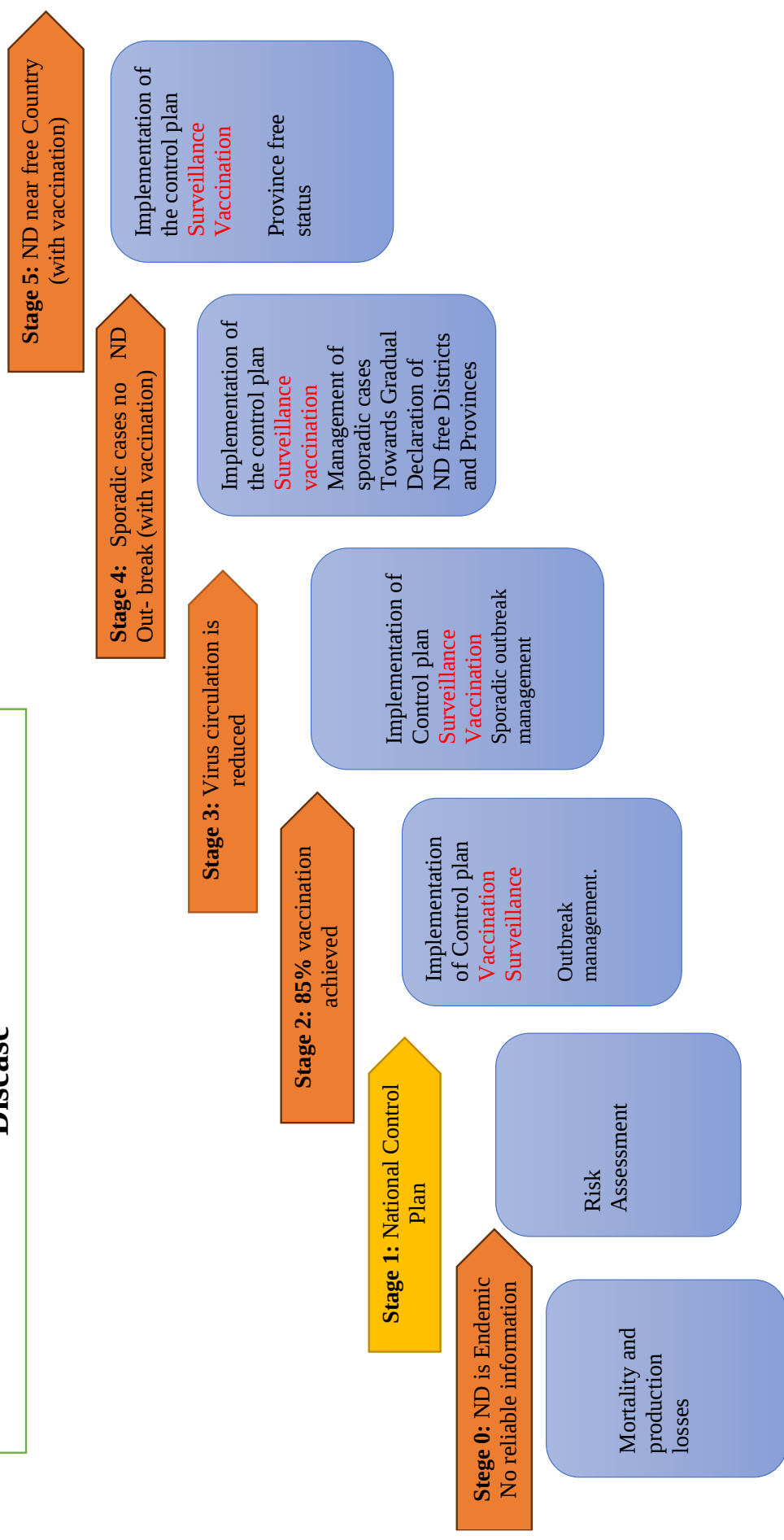


Table of Content		
Se. No.	Description	Page No.
1	Introduction	1
1.1	Situation analysis	2
1.1.1	World distribution of the disease	2
1.1.2	ND situation in Sri Lanka	3
1.2	Importance of a control plan	4
2	Objective of the Control Plan	5
3	National ND Control Plan	5
3.1	National surveillance	5
3.1.1	Active surveillance	5
3.1.2	Passive surveillance	7
3.1.3	Special surveillance in export establishments	8
3.1.4	Surveillance in imported birds	8
3.2	National ND control program	9
3.2.1	Vaccination	9
3.2.2	Biosecurity	10
3.2.3	Awareness programs	10
3.3	Monitoring program	10
3.4	Regulatory measures on import and export	12
3.4.1	Importation of poultry and poultry products	12
3.4.2	Exportation of poultry and poultry products	13
4	Disease Reporting, Investigation, Diagnosis, Outbreak Management and post-outbreak management	13
4.1	Disease reporting	13
4.2	Disease investigation	13
4.3	Disease diagnosis	14
4.3.1	Clinical disease diagnosis	14
4.3.2	Laboratory diagnosis	14
4.4	Outbreak management	14
4.4.1	Movement control	14
4.4.2	Carcass disposal	15
4.4.3	Special Vaccination Program	15
4.4.4	Outbreak management in export-oriented commercial layer, broiler farms and pet Birds (breeding/ collecting)	15
4.5	Post-outbreak management	16
5	Research and development	16

1. Introduction

Newcastle Disease (ND) is a WOA (World Organization of Animal Health) listed, immediately notifiable disease, which is highly contagious and distributed throughout the world, resulting in severe economic losses to the poultry industry.

Newcastle disease is an infection caused by, *avian paramyxovirus serotype-1*. (APMV-1). It has been reported in a wide range of domestic and wild bird species, with susceptibility varying considerably among them. Chickens are highly vulnerable, often developing severe disease, whereas turkeys usually exhibit milder signs. Game birds such as pheasants, partridges, quail, and guinea fowl, along with parrots, including cockatiels, show variable susceptibility. Disease has also been observed in young cormorants, ostriches, and pigeons, while raptors are usually resistant except for reported cases in bearded vultures, sea eagles, ospreys, and some falcons. Other species affected include gulls, owls, pelicans, penguins, passerine birds, and corvids such as crows and ravens.

The main clinical signs of Newcastle disease include respiratory signs (sneezing, coughing, gasping), nervous signs (tremor, paralysis, twisting neck, drooping wings), and digestive problems (diarrhoea, reduced appetite) and drop in egg production. The incubation period varies from 2 to 15 days. The mortality and morbidity rates can reach to 100% depending on the severity, strain of the virus, bird species, susceptibility of host and vaccination status. Affected flocks often present with sudden onset of high mortality, sometimes reaching 70–100% within 24–48 hours, or a marked drop in egg production exceeding >10% (short period, often 1–3 days). The lesions in post-mortem examination may include haemorrhages in the proventriculus, caecal tonsils, and intestinal mucosa, petechial haemorrhages in the trachea, congestion and haemorrhage of the spleen; necrosis of lymphoid tissues; and in some cases, non-specific signs such as emaciation or catarrhal enteritis. In layers, ovaritis and misshapen or shell-less eggs may be evident. The combination of these flock-level indicators, clinical signs, and characteristic gross lesions are used to establish a presumptive diagnosis of ND.

The clinical presentation of the disease depends on both the virulence of the viral strain and the susceptibility of the host species. Among the viral components, the haemagglutinin, neuraminidase and fusion proteins are critical, as they contribute not only to the pathogenic process but also to the virus's immunogenic characteristics. Newcastle disease virus (NDV) strains can be classified according to their level of pathogenicity into five main pathotypes: asymptomatic, lentogenic, mesogenic, neurotropic velogenic, and viscerotropic velogenic.

Asymptomatic strains are avirulent and replicate primarily in the intestinal tract without showing any clinical signs. However, the virus is shed in faeces and contributes to the transmission of the disease. Lentogenic strains are low virulent and mainly cause mild respiratory disease and affected birds show mild coughing, sneezing, slight drop in production and rare mortality. Mesogenic strains show intermediate virulence, and primarily affect the respiratory and nervous systems. Velogenic strains are highly virulent. Neurotropic velogenic NDV infection is characterized by severe respiratory distress and neurological signs such as torticollis, paralysis, depression and opisthotonos, whereas viscerotropic velogenic NDV causes haemorrhages in the gastrointestinal tract and necrotic lesions in liver, spleen and intestinal lymphoid tissue.

Importantly, wild birds act as natural reservoirs of NDV, typically showing little or no clinical disease, but their ability to migrate long distances contributes significantly to the global spread of the virus within natural ecosystems. Waterfowl and other wild birds may carry the virus without obvious illness, although certain viral genotypes have caused large-scale outbreaks in these species. Ducks are recognized as an important host species in the epidemiology of ND. They may harbor the virus without showing overt clinical signs, which contribute to undetected virus circulation and is also capable of shedding the virus for longer periods. hereby owing to this role as a potential reservoir and silent spreader.

Wet markets are also recognized as critical points for the maintenance and spread of ND, as they bring together birds from multiple sources, including pet birds, across different species and management systems, often under crowded and stressful conditions. These factors make wet markets a significant risk for virus amplification and cross-species transmission.

Although ND primarily affects birds, humans can occasionally develop conjunctivitis-like symptoms characterized by eye redness, tearing, eyelid swelling, and, in some cases, subconjunctival haemorrhage following exposure.

1.1 Situation Analysis

1.1.1 World Distribution of the Disease

ND is a global issue that poses a significant threat to poultry production worldwide. In many countries, the disease remains endemic, while in others it appears only sporadically. ND was first observed in the Indonesian island of Java in 1926 and later spread to Newcastle in the United Kingdom, where it was recognized as a distinct disease from fowl plague (highly pathogenic avian influenza). During the 1980s and 1990s, outbreaks occurred across Europe, including the United Kingdom. NDV is now endemic in many regions, including Africa, South

America, and Eurasia, and continues to experience significant economic losses. Despite the widespread circulation of NDV, some countries, including the United States, Canada, and Western European nations, have effectively controlled the disease through strict vaccination and surveillance programs. Australia remains free from notifiable ND, maintaining its status without vaccination.

In South Asia, the most prevalent NDV genotypes are VII and XIII, which are responsible for repeated outbreaks in poultry, with genotype VII being the dominant strain across South Asian countries including India, Pakistan, Bangladesh, and Bhutan, while genotype XIII is more common in Nepal and parts of India. Genotype II, derived from vaccine strains such as LaSota, B1, and F is widely present in South Asian countries but is not a major field outbreak genotype, although it is frequently detected in surveillance. Genotype XXI has recently emerged in some countries, mainly in Columbiformes, with occasional spill over to poultry, while genotype VI (pigeon paramyxovirus-1) circulates sporadically in wild and domestic pigeons and may occasionally infect chickens. Overall, genotypes VII and XIII pose the greatest economic threat to the poultry industry in the region.

1.1.2 ND Situation in Sri Lanka

The poultry population in millions is as follows: broiler grandparent 0.05, broiler parent 1.80, layer parent 0.15, poultry commercial broiler 15.42, commercial layer 15.40 and backyard poultry 2.70 (*DAPH, statistical bulletin, 2024*). A substantial proportion of the poultry population is concentrated in the Western and North Western Provinces, with together account for approximately 37% of the poultry population in Sri Lanka. ND is a Notifiable disease in the country according to the Animal Diseases Act, No. 59 of 1992. The disease was first reported in Sri Lanka in 1927(*Samal SK, Current Research and Future Trends, Avian Virology, 5th edition, 2019*) Both genotype II and genotype VII have been detected, A study on molecular characterisation and phylogenetic analysis of the Sri Lankan Newcastle Disease virus in chickens (study on” *Molecular Characterisation and Phylogenetic Analysis of the Sri Lankan Newcastle Disease Virus in Chickens*” Prabhashini NGW et al., 2017, (*Research Gate*).” indicating the coexistence of vaccine-related and circulating field strains. Although ND was an endemic infection in Sri Lanka, at present, the situation is relatively stable with a low number of cases reported due to control with vaccination and biosecurity measures. Vaccination against ND is routinely practiced in poultry breeder farms, commercial layer, commercial broiler, backyard, and pet bird breeder farms across the country. This has significantly reduced the impact of the disease, and the mortality. Severe disease outbreaks with high mortality or

widespread outbreaks of virulent ND have not been reported recently in the country. Currently it is noticed, that only the sporadic cases are reported. The majority of them are often associated with small-scale or backyard poultry with low mortality. Only avirulent (lentogenic) strains of NDV is detected in both commercial and backyard poultry populations in current national surveillance.

The current ND control program in Sri Lanka relies on three main strategies: surveillance, biosecurity, and vaccination. Surveillance is conducted continuously to monitor virus circulation in poultry breeder farms, commercial layer, commercial broiler, backyard, wet market and wild bird populations. Biosecurity measures are applied across breeding establishments, commercial farms and backyard farms to minimize the risk of introduction of the virus to farms and spreading. Vaccination is widely practiced throughout the country. Locally produced ND vaccines were issued free of charge to farmers with up to 10,000 birds previously. Since 2022, free vaccines have been provided to farmers with <1,000 birds/farm in North Western Province (NWP) and Western Province (WP) where the high density of the commercial population exists, and <400/farm birds in other provinces. In addition, imported vaccines are used to control the disease in commercial layer, commercial broiler, and breeder farms. These measures form the foundation of ND control. However, they currently lack full integration into a standardized, systematic national program.

1.2 Importance of a control plan

Despite ongoing efforts, several gaps remain in the current ND control program. Coordination between provincial and national levels is insufficient, leading to fragmented implementation and inconsistent disease reporting. Biosecurity compliance varies widely, in commercial poultry, especially in backyard and small-scale commercial farms. The vaccination is considered as a main control measure, but a precise approach to vaccination monitoring is essential. Therefore, full integration of surveillance, biosecurity, and vaccination into a standardized, systematic national program is required to ensure effective and sustainable ND control in Sri Lanka. Its primary purpose is to safeguard poultry health, ensure food security, support the long-term sustainability of the poultry industry and reduce production losses of chicken, meat and eggs in the country as it is considered one of the major protein sources for Sri Lankans. Further, ND control facilitates international trade, which is critical to expanding poultry exports and improving access to global markets. The majority of importers require assurance of poultry and poultry products originate from ND-free populations. Further, with the rapid expansion of the commercial poultry sector, increasing bird densities, a dynamic and

adaptive approach is necessary for the management of diseases. Considering all these factors, the national ND control plan was developed for a systematic approach to controlling ND in the country.

2. Objective of the Control Plan

The main objective of the control plan is to reduce the prevalence of ND near zero level in the country.

Specific Objectives

1. To monitor the prevalence of ND through systematic surveillance and reporting
2. To achieve 85% vaccination coverage in the country
3. To declare ND free status in areas to facilitate exportation

3. National ND Control Plan

The national control plan outlines a comprehensive framework that integrates three main components; surveillance, control programs and monitoring programs. These measures reduce the risk of ND introduction, ensure early detection, and prevent and control of the disease in the country.

3.1 National Surveillance

The Surveillance provides information on the occurrence, spread, and potential emergence of ND in the country. The surveillance includes active surveillance, passive surveillance, special surveillance in the export establishments and imported birds.

3.1.1 Active surveillance

Active surveillance, the proactive and systematic collection of samples representing all types of bird populations, is implemented through a structured sampling framework designed to maximize early detection and provide representative data on ND prevalence.

Active surveillance is conducted in poultry breeder farms, commercial layer farms, commercial broilers (poultry processing establishments), backyard poultry, ducks, wet markets (live bird market and pet shops, pigeons), pet bird breeder farms/ pet bird collectors, and wild birds (resident and migratory species).

The active surveillance is carried out by the Department of Animal Production and Health (DAPH). The Veterinary Investigation Officers (VIO) of Veterinary Investigation Centers (VIC) in each district are involved in sample collection. The collected samples are dispatched to the Veterinary Research Institute (VRI), DAPH, who is responsible for laboratory testing. The surveillance data are analysed in Animal Health Division (AHD), DAPH.

The active surveillance system focuses on the following populations:

a. Poultry breeder farms

In Sri Lanka, all the poultry breeder farms are registered with the DAPH. Active surveillance is conducted on all these poultry breeder farms. Sampling is carried out bi-annually at each location. Cloacal swabs are collected with five samples combined into each pool. A total of six pooled samples (5 swabs pool, $5 \times 6 = 30$ swabs) are collected per farm from randomly selected poultry houses (only from the flocks which are not vaccinated within 2 weeks) (refer 1.1 in annexure 1- ND surveillance program: sample collection)

b. Commercial layer farms

The surveillance is conducted in randomly selected commercial layer farms across the country. The number of farms is determined to detect a 1% prevalence with 95% confidence (total of 300 farms). The sample number from each district is based on the poultry population. Sampling is carried out annually and collection is done throughout the year. Three pooled samples (cloacal swabs) are collected per farm from randomly selected poultry houses and five cloacal swabs are pooled in each sample ($3 \times 5 = 15$ swabs/farm). The samples are collected only from the flocks which are not vaccinated for 2 weeks (refer 1.2 in annexure 1- ND surveillance program: sample collection).

c. Commercial broilers (poultry processing establishments):

The surveillance on commercial broilers is conducted through poultry processing plant. The surveillance is conducted in all registered poultry processing plants across the country. Sampling is carried out bi-annually and sample collection is done throughout the year. A total of 30 samples are collected per processing plant. Six pooled samples (cloacal swabs) are collected from randomly selected batches of broilers and five cloacal swabs are pooled in each sample ($5 \times 6 = 30$ /processing plant/6 month) (refer 1.3 in annexure 1- ND surveillance program: sample collection)

d. Backyard poultry:

The surveillance is conducted in backyard poultry flocks located near migratory bird habitats (hot spots), as these birds are at risk of direct or indirect contact with exotic and wild birds and are managed under low-biosecurity conditions and additionally includes sampling from ND risk areas where such hot spots are not present. The types of birds include all types of poultry; chickens, ducks, turkeys, quail, guinea fowl, and geese, kept under extensive management systems. Sampling is carried out in villages within a 3 km radius of identified migratory bird sites/hot spots. Five villages are selected surrounding one hot spot and each village is considered as one location. Five swabs are pooled in one sample and a total of 15 pooled samples are collected per location ($5 \times 3 = 15$ /location, $15 \times 5 = 75$ samples/hot spot). Sampling is

conducted twice a year (January to May and September to December) (refer 1.4 in annexure 1- ND surveillance program: sample collection)

e. Ducks:

The surveillance is conducted in randomly selected duck farms throughout the country. Sampling is conducted annually, throughout the year. A total of 15 swab samples are collected per location (one village or adjacent village) (3 to 5 swabs pool in one sample). Sixty locations are identified based on the duck population in the country (refer. 1.5 in annexure 1- ND surveillance program: sample collection).

f. Wet markets/pet birds:

The surveillance is conducted in wet markets located in major towns and cities across the country. The samples are collected from all the wet market identified in the country. Wet droppings are collected from chickens, pets, and game birds, with five samples combined into each pool. A total of three pooled samples are collected per site ($5 \times 3 = 15/\text{site}$). (refer 1.6 in annexure 1- ND surveillance program: sample collection)

h. Wild birds (resident and migratory species):

The surveillance is conducted on wild and migratory birds at all 79 identified hotspots across the country, in collaboration with wildlife authorities. Considering to detect a 2% prevalence with 95% confidence, 150 pooled samples per year ($75 \times 2\text{visit}$) are collected from five selected places within each hotspot. A total of 15 pooled samples are collected per hotspot (5 samples pooled). Sampling is carried out twice a year (January to May and September to December) at each location. Cloacal and tracheal swabs, as well as wet droppings, are collected from wild and migratory bird species (refer 1.7 in annexure 1- ND surveillance program: sample collection).

3.1.2 Passive surveillance

Passive surveillance is based on the complaints of poultry farmers, the Department of wildlife conservation or the public about bird sickness or mortality. Passive surveillance is performed by GVS and VIO. The suspected cases are initially received by the Government Veterinary Surgeon (GVS) and very few of them are received VIO. The details of passive surveillance are received on an AHD daily basis via disease information hotline from VIOs, monthly in Monthly Return format from Government Veterinary Surgeon (GVS) of 337 Veterinary ranges distributed throughout the country. Further, the VIO sends detail report to AHD on the epidemiological investigation of passively received cases to GVS or directly to them.

Additionally, private laboratories inform DAPH upon obtaining any positive results for ND. All the data are available in AHD.

3.1.3 Special surveillance in the export establishments

The surveillance focuses on routine sampling of populations to monitor the disease status of export establishments, ensuring that they are negative for ND and are fit for domestic trade and export purposes.

Layer

Sampling is carried out twice a year at each farm. The samples number is decided to detect 5% prevalence with 95% confidence. A total average of 12 pooled samples of cloacal swabs are collected from layer birds, with five swabs pooled into one sample ($5 \times 12 = 60$ birds/house) collected per poultry house by VIOs (refer 2.2 in annexure 1- ND surveillance program: sample collection)

Broiler

The surveillance in export-oriented broiler farms is conducted in processing plants (ref. 3. annexure 1- commercial broiler - ND surveillance program: sample collection).

Pet birds (breeding or collecting centers)

The surveillance in export-oriented pet bird farms are conducted bi-annually in each location. Wet droppings cloacal swabs are collected from pet birds, with five samples are pooled into one sample. A total of three pooled samples are collected per location ($5 \times 3 = 15$) (ref. 2.1 of annexure 1-Pet birds - ND surveillance program: sample collection).

If ND virus is isolated from any of the surveillance samples, the decision of exporting is based on the importing country requirement and the virulence of the isolated ND virus. If virulent strain of ND is isolated from surveillance samples, with or without any clinical picture, it is not allowed to export. The exportation is ceased and the period is determined base on the health requirements of importing country.

3.1.4 Surveillance of imported birds

The surveillance samples are collected from all import consignments of day-old chicks (DOC) and pet birds. The samples are collected two times; at arrival and at the end of the quarantine period (before 30 days of quarantine period). Wet droppings are collected with five swabs into each pool. A total of 6 pooled samples are collected from each consignment ($5 \times 6 = 30$) (refer 1.7 in annexure 1- ND surveillance program: sample collection)

3.2 National ND control Program

The program integrates three core strategies: vaccination, adapting strict biosecurity measures, and awareness initiatives.

3.2.1 Vaccination

The main objectives of vaccination are protection against viral infection, alleviation of morbidity, mortality and reduction of the shedding and spreading of the virus. All poultry and pet birds in the country are vaccinated against ND. In North Western and Western Provinces, the vaccine is provided freely to farms with <1,000 birds/farm, while in the rest of the provinces, it is distributed to farms with <400 birds/farm. These farmers are provided a vaccination schedule by VRI/DAPH (annexure 4 - vaccination schedule and guideline for locally produced vaccine). These vaccines are produced by VRI/DAPH. Further, commercially available vaccines are available in the country and vaccination schedule is followed according to the manufacturer's recommendations.

a. Vaccination in commercial layers

Recommended vaccination schedule for commercial layers

Vaccination should be done according to the vaccination schedule provided by the breeder's farm of origin or day 1 with 7-14 days booster. In addition, vaccination again with live vaccine and killed vaccine at pre-lay are recommended. However, the vaccine schedule of each farm varies based on regional outbreak situations, farm-specific risk factors, and measured antibody titre levels. It is recommended to follow the guidance of a qualified veterinarian to avoid unnecessary vaccinations.

Post-Vaccination Monitoring: Post-vaccination monitoring is compulsory in export-oriented commercial layer farms and, optional in farms producing for the local market. The initial sero-monitoring of the flock is recommended the secondary (live vaccine) vaccination. The next sero-monitoring is recommenced three to four weeks after administration of the killed ND vaccine during the pre-lay period. Additionally, mid-lay sero monitoring is recommended to assess the maintenance of immunity throughout the production cycle in areas where poultry farms are concentrated. Sero-monitoring of flocks is compulsory for export-oriented farms as mentioned above.

b. Vaccination in commercial broilers

Birds should be vaccinated according to the vaccination schedule provided by the breeder's farm of origin or guide commercial broiler farmers for Day 1 with a 7–14 days booster.

c. Vaccination in poultry breeder farms:

Primary vaccination during the rearing stage, followed by secondary or booster vaccination. Administration of a killed vaccine during the pre-lay stage. A mid-lay vaccination is optional. The post-vaccination monitoring program is compulsory.

Post-vaccination monitoring: The initial sero-monitoring is essential after primary or secondary (live vaccine) vaccination. The next sero-monitoring is recommenced three to four weeks after administration of the killed ND vaccine during the pre-lay period. Additionally, mid-lay sero monitoring is recommended to assess the maintenance of immunity to confirm a satisfactory humoral immune response. Additional sero-monitoring/s can be decided by the veterinarian of the farm. Representative sampling of DOC is checked for maternal antibody levels, allowing adjustment of vaccination schedules.

3.2.2 Biosecurity

Biosecurity guidelines are provided for poultry breeder farms and hatcheries, commercial layers, commercial broilers, export-oriented poultry farms and poultry breeder farms, and pet bird breeding centers and backyard poultry by the DAPH. These guidelines include site selection, biosecurity measures, health, vaccination, vaccination monitoring and management practices etc...

3.2.3 Awareness Programms

A training program to update knowledge for veterinary surgeons (government and private) and VIO has been identified. The other supportive staff of the DAPH, poultry industrial personnel, poultry entrepreneurs and farmers have also been included as the separate teams for the awareness program (refer, Annexure 6: Schedule for awareness programmers).

3. 3 Monitoring Program

The monitoring program includes farm registration, biosecurity monitoring with a checklist, providing recommendations to improve the farm management and health status.

a. Poultry breeder and hatchery

Poultry breeder farms and hatcheries are monitored by the Division of Animal Health Division (AHD), Department of Animal Production and Health. They are provided with biosecurity guidelines which include site selection, biosecurity health measures, vaccination, and vaccination monitoring etc... The breeder farms and hatcheries are inspected by a DAPH appointed team with a checklist. Based on the inspected team recommendations, the Director/Animal Health/DAPH recommends of the poultry breeder farm and the Director of Veterinary Regulatory Affairs (DVRA) division register the farm in VRA division. The

registration is renewed annually by the same procedure. In addition, other than an annual visit for renewal of registration, all the breeder farms and hatcheries are monitored through the bi-annual inspection by the VIO under 'Biosecurity monitoring program' conducted by AHD/DAPH. The farms and hatcheries are inspected with a checklist for biosecurity. Their report is submitted to AHD/DAPH and with the recommendation, DAPH recommend the biosecurity status of the relevant farm to DVRA division. All the breeder farms and hatcheries are audited by a team appointed by DAPH every 3 yrs. Further, the ND surveillance program is monitored by the Animal Health Division.

b. Back yard poultry, commercial poultry farms and pet bird breeding centres

All backyard, commercial poultry farms and pet bird breeding centers are monitored by the GVS of the area. All poultry farms located within a Government Veterinary Division are registered with the relevant Veterinary Office. The GVS of the area conducts a formal on-site inspection and registers in the veterinary office.

c. Export-oriented layer farms/broiler farms and pet bird establishments/pet bird collectors.

Layer farms

Export-oriented poultry layer farms are registered with the Division of Veterinary Regulatory Affairs (VRA), DAPH. They are provided with biosecurity guidelines which include site selection, biosecurity measures, Health, vaccination, and vaccination monitoring etc... These farms are inspected with a checklist prior to registration in DAPH by an appointed team. With the recommendation of Director Animal Health/DAPH based on the inspection team recommendations, Director VRA registered the farm. The registration is renewed annually with same procedure. Further, all the export-oriented layer farms are inspected bi-annually for biosecurity, combine with the ND surveillance program implemented by VIO. Based on their report, Director Animal Health recommend for biosecurity status of the farm to VRA division. All the export-oriented layer farms are audited by a team appointed by DAPH in every 3 yrs. All backyard, commercial poultry farms and pet bird breeding centers are monitored by the GVS of the area. All poultry farms located within a Government Veterinary Division are registered with the relevant Veterinary Office. The GVS of the area conduct a formal on-site inspection and register in the Veterinary office.

Broiler farms

Export oriented poultry broiler farms are registered under the commercial farm registration program in the Government Veterinary Office. They issue registration certificate and the certificate is checked by poultry processing plant inspection team during the poultry processing

plant biosecurity monitoring program. In addition, the own farm (own breeder farm/company) origin export-oriented broiler farms are monitored by the veterinary surgeon of the breeder farm/company. They provide a report on the biosecurity, health status, vaccination to the poultry processing plant inspection team during their visit under poultry processing plant biosecurity monitoring program. Further, ND surveillance program is monitored by the Animal Health division. All the export-oriented broiler farms are audited by a team appointed by DAPH in every 3 yrs.

Pet breeder establishments/pet breeder collecting points

Pet breeder establishments/ pet breeder collecting points are registered with the Division of VRA, DAPH. They are provided with biosecurity guidelines and are inspected with a checklist prior to registration in DAPH by an appointed team. With the recommendation of DAH/DAPH based on the inspected team recommendations, Director VRA register the farms. The registration is renewed annually by the same procedure. Further, the ND surveillance program in is monitored by the AHD. All the export-oriented layer farms are audited by a team appointed by DAPH in every 3 years

3.4 Regulatory measures on Imports and export

3.4.1 Importation of poultry and poultry products

Any person/ organization intending to import poultry and poultry products obtain prior approval from the DAPH. All the regulations stipulated in the Animal Disease Act, No.59 of 1992 and the procedures implemented by the DAPH have to be followed strictly.

According to the DAPH requirements for importation of pet birds to Sri Lanka, the birds are imported from a country of zone free for ND. The farm should be free for a period of 6 months immediately prior to date of exportation of birds and is registered with the relevant government authority of the exporting country. Further, they are under the regular inspection of the relevant government veterinary authority.

According to the DAPH requirements for importation of a DOC parent/grandparent to Sri Lanka, DOC should be imported from a country of zone free for ND. The farm of origin should be free for a period of one year immediately before export. Further, it is registered and be under regular inspection of the state veterinary authority.

Imported birds are kept under farm quarantine for 30 days and frequently observed for any signs of clinical disease and behavioural changes. Samples are collected and tested (refer, 3.1.4 Surveillance in imported birds)

3.4.2 Exportation of poultry and poultry product

The export of poultry and poultry products from Sri Lanka is regulated to ensure biosecurity, animal health, and compliance with importing country requirements. Only registered farms and export establishments that meet biosecurity standards are eligible for export. Flocks must be disease-free and monitored for notifiable diseases such as ND and Avian Influenza, and Salmonellosis.

4. Disease Reporting, Investigation, Diagnosis, Outbreak Management and post outbreak management

4.1 Disease Reporting

If any Veterinary Officer finds birds with symptoms suspected of ND in their Veterinary Division, the officer should immediately attend the case and if he/she still suspects ND, communicate with the relevant VIO for investigation. He/she informs the suspicious case to the Provincial Director at the same time. The VIO diagnosed tentatively ND after the investigation of the case and reports to DAH/DAPH, via call, fax, or email. In addition, the VIO informed VRI to get ready to receive samples for the lab diagnosis. DAH informs the situation to DG/DAPH.

4.2 Disease Investigation

With the complaint of the farmer and after the initial diagnosis as suspected ND with or without post-mortem, the GVS of the area visited the farm/farm to investigate. If the GVS further suspects based on the case definition and the post-mortem finding during the investigation, he/she will request the VIO of the area for investigation. If the VIO suspects ND, use a Rapid Antigen Test kit to screen for ND. Further, the VIO performs post-mortem, samples are collected and sent to the VRI for confirmation (refer, annexure 7 - guidelines for government veterinary surgeon in ND suspected case). After the confirmation of the disease, VIO reports the disease situation immediately to the relevant authorities (refer, annexure 5 - disease reporting network). A duly complete Epidemiology Initial Investigation Report (annexure 9 - Epidemiology Initial Investigation Report format FA/OH/32) is submitted immediately to the Provincial Director (PD) and DAH/DAPH by GVS. VIO sends a disease investigation report (refer, annexure 11- Disease investigation report format) to DAH.

If the GVS and VIO come across the same clinical picture with the suspicion of ND in surrounding farms, immediately inform the disease situation to DAH and the provincial director (refer. Annexure 8- Guidelines for VIO in ND suspected case).

Alerts on new reporting cases/data are submitted to the Animal Health Division via the Weekly Epidemiology Report (refer, annexure 10: Weekly Epidemiology Report format FA/OH/33) by GVS (refer, annexure 5 – Disease reporting network and annexure 7- Guidelines for government veterinarians in ND suspected case)

4.3 Disease diagnosis

Newcastle disease diagnosis is based on a clinical picture including clinical signs, mortality and morbidity pattern and using a rapid diagnostic test kit in the field and, laboratory diagnosis at Veterinary Research Institute.

4.3.1 Clinical disease diagnosis

Case definition for New castle Disease

- *Any flocks with high mortality (up to 70%, 100%) within 24 to 48 hours,*
Or/ and
- *marked production drop (> 10%).*
Or/ and
- *Any flocks with specific signs of ND like respiratory signs, nervous signs together with diarrhea.*

In addition to the case definition for suspected cases, clinical disease diagnosis of ND is based on both flock-level observations and individual bird examination.

4.3.2 Laboratory Diagnosis

The samples received to the Animal Virus Laboratory, VRI are tested by PCR and virus isolation. The confirmatory report is submitted to the DAH and to the relevant VIO within 3-5 working days.

4.4 Outbreak management

Outbreak management includes mainly movement control, proper disposal of carcass and vaccination.

4.4.1. Movement control

The movement control is the immediate action to be taken once the birds are diagnosed clinically or using a Rapid diagnostic test kit. In such a situation, the movement of birds from the farm are temporarily stopped until the confirmed results of the samples submitted to the VRI are received. The GVS makes sure not to transport sick or any apparently healthy birds from the infected farm. In a situation of an outbreak in an area, the farm premises should be sealed by obtaining Magistrate's Orders (in terms of Section 4 of the Animal Diseases Act, No. 59 of 1992).

4.4.2 Carcass disposal

All dead birds in an infected farm are disposed of properly as per the guidelines (Annexure 13: Guidelines for Disposal of Dead Birds in ND Suspected or Confirmed Farms). The effective disposal methods, such as incineration and deep burial, according to the guidelines for disposal of dead birds reduce environmental contamination and break the disease transmission cycle.

4.4.3 Special vaccination program

The relevant Government Veterinary Surgeon of the infected area immediately take steps to implement a special vaccination program to prevent disease spreading in uninfected farms including pet bird breeding establishments. However, the decision is based on the previous vaccination program, the severity of the disease (virus strain) and poultry density of the area by the GVS/VIO and Provincial Director/Director Animal Health. It is recommended vaccinate around the 3km radius of the infected farm/s even with previous vaccination against ND. The type of vaccine depends on the previous vaccination, the severity of the disease. Outbreak management includes mainly movement control, proper disposal of carcass and vaccination.

4.4.4. Out-break management in export oriented commercial layer, broiler farms and pet birds (breeding / collecting centers)

Layer farms

If the whole farm is affected or more than 90% are affected, it is recommended to cull all the birds in the farm. Vaccinate non-infected birds in non-infected houses using a recommended vaccine based on vaccination program practiced and antibody titer. However, make sure not to vaccinate birds in the incubation period or sick birds or any suspicion of the initial stage of the disease, such as reducing feed intake and water intake etc... The farm authority is supposed to communicate with the veterinary surgeon of the farm, GVS and VIO for the decision of vaccination after the disease is confirmed in a farm

Broiler farms

If the farm is confirmed positive for ND, all birds in infected houses and those more than 30 days old are culled. Non-infected birds in non-infected houses can be vaccinated. However, culling and vaccination are based on the management practices and general health status of the birds in other houses.

Pet birds (breeding / collecting)

The new birds should not be introduced to infected locations. The movement of the any of the

birds, either sick or apparently healthy from the infected establishment, are stopped. The vaccination is recommended based on the biosecurity and management practices by GVS and VIO.

If ND virus is isolated from any of the farms, the export is ceased from the relevant farm.

4.5 Post -outbreak management

In the post-outbreak of ND, cleaning/disinfection, restocking and strict monitoring of suspicious cases are practiced. After the disposal of dead birds and litter, the houses and the farm environment are cleaned properly. The houses are subjected to disinfection using recommended disinfection. A minimum of 3-month resting period is necessary for restocking. Strict attention is given to the surrounding 3 km radius of the infected farm to detect any possible spread of the disease. All suspicious cases are investigated immediately, and appropriate samples are collected for laboratory confirmation. Weekly outbreak monitoring reports are sent by the GVS until 4 consecutive negative results to DAH.

Following an ND outbreak, restocking or introduction of new birds should only be permitted after thorough cleaning and disinfection of the affected premises. New birds should be introduced no earlier than three months after depopulation and final disinfection, allowing sufficient time for environmental virus inactivation.

Export oriented farms

If all the birds are culled, clean and disinfect the farm and rest for 3 months before the introduction of new batch. If vaccinated non -infected birds remain in the farm, a special cleaning and disinfection procedure should be adapted. The introduction of birds for the cleaned infected pens is ready for the introduction of new birds after 3 months.

In export-oriented layer farms, pet birds re-gain negative status 1 year after the culling of an infected flock. The birds with representative samples are tested by VIO, and confirmed negative. In export- oriented, broiler farms are considered negative 3 months later after testing of a representative sample collected by a VIO and confirmed negative. However, the re-gain of exportation after an outbreak depends on the importing country requirement.

5. Research and Development

Molecular characterization of the ND virus in Sri Lanka is mandated by the ND control plan. It is required for the selection of effective vaccines to control the disease and for the risk analysis in the importation of poultry and poultry products. In positive cases, selected samples should be subjected to gene sequencing and phylogenetic analysis. Continued research should

be conducted on the virus (genotypes) and ND vaccines. This enables evidence-based decision-making, facilitates effective vaccine selection.

List of Abbreviations

AHD – Animal Health Division
AQO- Animal Quarantine Officer
APMV-1 – Avian Paramyxovirus Serotype - 1
DAH- Director of Animal Health
DAPH – Department of Animal Production and Health
DVS – District Veterinary Surgeon
GVS – Government Veterinary Surgeon
DOC – Day-Old Chick
ELISA – Enzyme-Linked Immunosorbent Assay
END- Exotic Newcastle Disease
GVS – Government Veterinary Surgeon
HA – Haemagglutination
HI – Haemagglutination Inhibition
ND – Newcastle Disease
NDV – Newcastle Disease Virus
WOAH – World Organisation for Animal Health
PCR – Polymerase Chain Reaction
PD – Provincial Director
PM – Post Mortem
RT-PCR – Reverse Transcriptase Polymerase Chain Reaction
VIC – Veterinary Investigation Centre
VIO – Veterinary Investigation Officer
VRA – Veterinary Regulatory Affairs
VRI – Veterinary Research Institute
VS – Veterinary Surgeon

Annexures

- I. Annexure 1: Newcastle Disease (ND) Surveillance Program: Sample Collection
- II. Annexure 2: Sample submission format (surveillance)
- III. Annexure 3: Post mortem sample submission format (clinical disease)
- IV. Annexure 4: Vaccination schedule and guidelines for locally produced vaccine
- V. Annexure 5: Disease Reporting Network
- VI. Annexure 6: Schedule for awareness programs
- VII. Annexure 7: Guidelines for government veterinary surgeon in ND suspected case
- VIII. Annexure 8 : Guideline for Veterinary Investigation Officers in ND suspected case.
- IX. Annexure 9: Initial Investigation Report format (FA/OH/32)
- X. Annexure 10: Weekly Epidemiology Report format (FA/OH/33)
- XI. Annexure 11: Disease Investigation Report format
- X11. Annexure 12: Guideline for sample collection storing and dispatching
- XIII. Annexure 13: Guidelines for Disposal of Dead Birds in ND Suspected or Confirmed Farms

Annexure 1 – Newcastle Disease (ND) Surveillance Program: Sample Collection

No.	Surveillance Activity	Sampling Location	Sample Unit	Sampling Period	Type of Birds	Type of Sample	Sampling By	Sample Size (5 samples in each pool)	Sampling Frequency	Laboratory Test
1. Targeted Surveillance										
1.1	Poultry breeder farms	All registered breeder farms in Sri Lanka	Poultry houses	Throughout the year	Parent birds	Cloacal swabs	VIO	6 pools/farm /randomly selected houses	Twice/year/location	Virus isolation / rRT-PCR, followed by HI
1.2	Commercial Layer farms	Randomly selected commercial layer farms	Poultry houses	Throughout the year	Commercial layer	Cloacal swabs	VIO	3 pools /farm	Once/year/location	Virus isolation / rRT-PCR, followed by HI
1.3	Commercial Broiler-Poultry processing plants	All registered plants	Processing plant	Throughout the year	Broilers	Cloacal swabs	VIO	6 pools of 5/plant	Bi-annually /location	Virus isolation / rRT-PCR, followed by HI
1.4	Backyard poultry (near migratory bird sites)	Villages around hot spots	Backyard flocks	Janu-May and Sep to Dec	Chicken, duck, turkey, quail, guinea fowl	Cloacal swabs	VIO	15 pools/location	Twice/year/location	Virus isolation / rRT-PCR, followed by HI
1.5	Ducks (high-risk)	Throughout the country	Duck farms	Throughout the year	Ducks/Geese	Cloacal swabs	VIO	15 swabs/location	Once/year/farm	Virus isolation / rRT-PCR, followed by HI
1.6	Wet markets	Throughout the country	Market/shop unit	Throughout the year	Chickens, pet/game birds	Wet droppings, cloacal swabs	VIO	3 pools/one site	twice/year/market	Virus isolation / rRT-PCR, followed by HI
1.7	Wild & migratory birds	Identified hot spots	Hot spot locations	Sep - May	Wild birds, Migratory species	Cloacal/tracheal swabs, wet droppings	VIO & Wild life VS	15 pools/ hotspot	Twice/year/location	Virus isolation / rRT-PCR, followed by HI
2. Surveillance in Export Establishments										
2.1	Pet birds	Throughout the country	Breeder establishment/collecting center	Throughout the year	Pet & exotic birds	Wet droppings, oropharyngeal swabs	VIO	3 pools/ establishment	twice/year/farm	Virus isolation / rRT-PCR, followed by HI
2.2	layer	Throughout the country	Poultry house	Throughout the year	Commercial layer	Cloacal swabs	VIO	12 pools / house	twice/year/farm	Virus isolation / rRT-PCR, followed by HI
3. Surveillance of Imported Birds										
3.1	DOC (parent & grandparent)	At import & end of quarantine (30 days)	Each consignment	At arrival & day 30	Parent & grandparent DOC	Wet droppings	Quarantine staff	6 pools/consignment	Once/consignment	Virus isolation / rRT-PCR, followed by HI
3.2	Imported pet birds	At import & end of quarantine (30 days)	Each consignment	At arrival & day 30	Pet & exotic birds	cloacal swabs	Quarantine staff	As per shipment size	Once/consignment	Virus isolation / rRT-PCR, followed by HI

Annexure 2

Sample Submission Format (surveillance)

1. Name of the VIC:

Type of Specimen	Date of collection	VS range	Location*	VIC Reference No.	Quantity
Serum – Commercial layers)					
Swabs of Fresh Droppings - Hot Spots (Pooled samples)					
Cloacal Swabs - Back yard chicken (Pooled samples)					
Cage Swabs - Wet market (Pooled samples)					
Cloacal Swabs - Poultry processing establishments (pooled samples)					
Cloacal Swabs - Pet birds breeding establishments (pooled samples)					
Serum (duck)					
Cloacal swabs - duck (Pooled samples)					
Other (Specify)					

*** Name of the Hot spot / Name and address of the farm, Wet market, Poultry Processing Establishment, Pet bird breeding establishment**

Signature of the VIO:

.....

Submission of samples

Date:

Submitted by:

Received by:

Annexure 3

Post mortem sample submission format (clinical disease)

1. **Government Veterinary Range:**
2. **Relevant Veterinary Investigation Center:**
3. **Date of collection:**
4. **Date of submission:**
5. **Type of bird:** Backyard/ Commercial Layers/ Commercial Broilers/ Broiler Breeders/
Layer Breeders/ Grandparents / Other (specify).....
6. **Age of Birds:**
7. **History and clinical signs:**
8. **Post-mortem lesions:**
9. **Differential Diagnosis:**
10. **Details of samples:**

Type of Sample	Sample No.

.....

Veterinary Investigation Officer

Annexure 4

Vaccination guidelines and vaccination protocol for locally produced vaccine

Details of the vaccine

Primary vaccine for ND: Newcastle disease primary vaccine is a live attenuated freeze-dried vaccine produced by an avirulent strain.

Booster vaccine for ND: Newcastle disease Booster vaccine is a live attenuated freeze-dried vaccine produced by a lentogenic strain

Diluent: distilled water, deionized water, RO treated water

Shelf Life: one year from the date of production

Transport: In Rigid form box/cool box with ice or special designed coolant

Storage: 4 ° C to 8 ° C (refrigerator)

Cold chain should properly maintain during transportation of vaccines to the field

Administration:

- Vaccinate only healthy birds.
- Vaccination should be done during the morning hours.
- Remove any disinfectant or sanitizer from the drinking water for 24 hours, before and after vaccination.
- Clean all waterers with clean water prior to vaccination.
- It is advisable to deprive the birds with drinking water for 1-2 hours prior to vaccination.
- The vaccine should be diluted in adequate quantity of final drinking water which consume within 1-2 hours after dissolving the vaccine in water considering number and age of the birds and climatic condition.
- Use entire content of the vial when first opened.

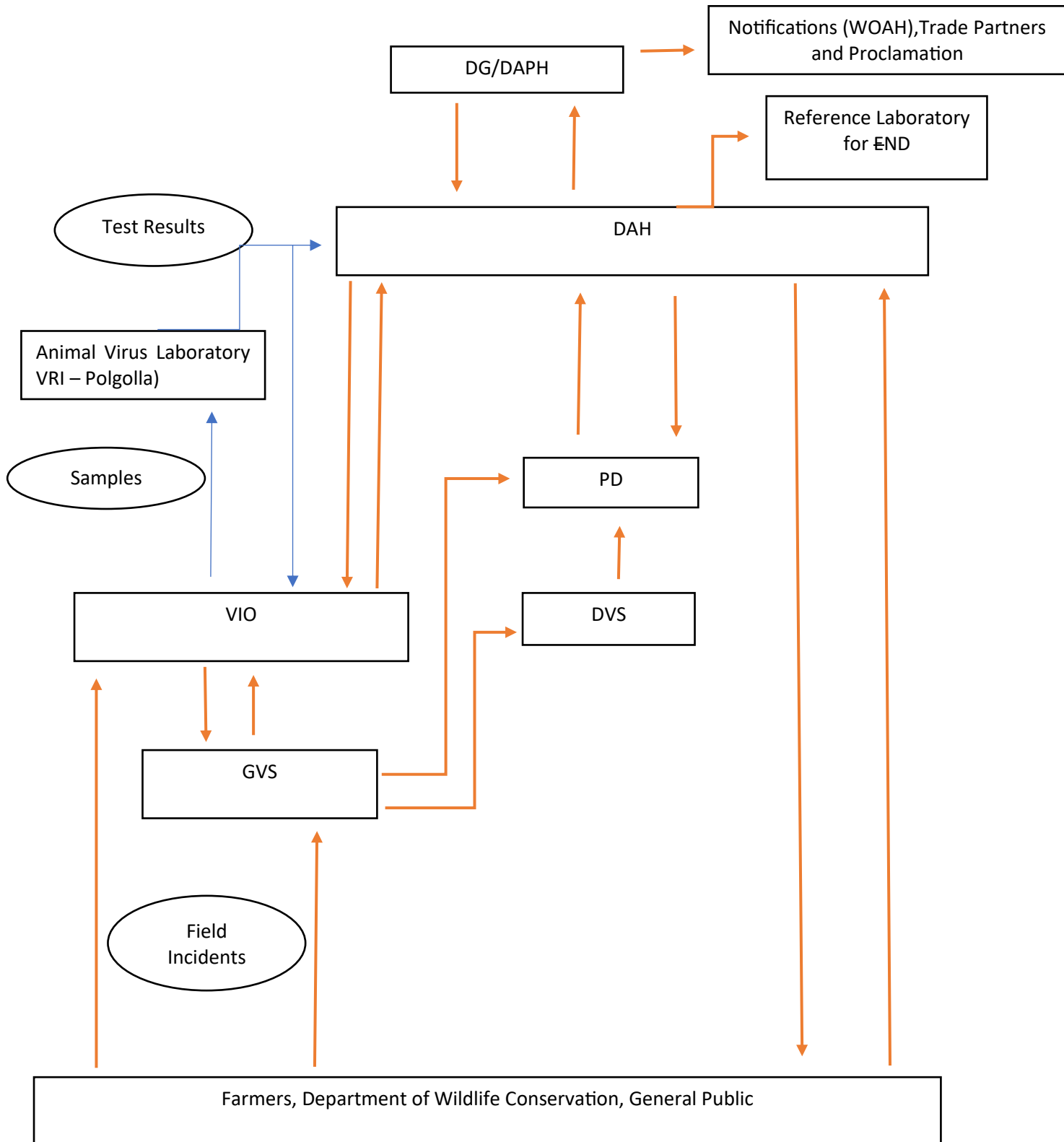
Vaccination Schedule:

Type of Vaccine	Age of Birds	Route of Administration	Method
Newcastle Disease Primary Vaccine	14 days	Oral (drinking water)	200 doses/vial Reconstitute the vaccine with 2ml of distilled water and presented to be with desired amount of drinking water which

			enough to drink by 200 birds within 1-2 hours.
Newcastle Disease Secondary Vaccine	12 weeks	Oral (drinking water)	200 doses/ vial Reconstitute the vaccine with 2ml of distilled water and presented to be with desired amount of drinking water which enough to drink by 200 birds within 1-2 hours.
Boost the immunity with ND primary vaccine	Every 3 month (depending on the disease incidence)	Oral (drinking water)	200 doses/ vial Reconstitute the vaccine with 2ml of distilled water and presented to be with desired amount of drinking water which enough to drink by 200 birds within 1-2 hours.

Annexure 5

Disease Reporting Network



Annexure 6

Schedule for awareness programmes

No.	Trainee	Training topics	Frequency	Conducted by
1	VIOs	vaccination, bio security measures and ND control program, individual responsibilities, outbreak investigation, collection and dispatching of samples, and epidemiology of ND in the country.	All newly appointed VIO should undergo the training	DAPH
2	Field VSs	vaccination, bio security measures and ND control program, individual responsibilities, outbreak investigation, collection and dispatching of samples, and epidemiology of ND in the country.	Once per /year	VIO
3	Supportive staff in the VS office	vaccination, General information on identification of the diseases, and immediate actions to be taken		GVS
4	Farmers			
4.1	Breeder farmers and export-oriented farmers	bio security measures and ND control program, individual responsibilities	Once /two years	DAPH/VIO
4.2	Local market - oriented farms	bio security measures, General information on identification of the diseases, and immediate actions to be taken	continuous	VS
5	Wildlife staff	General information on identification of the diseases and immediate actions to be taken	continuous	Wildlife VSs
6	General public	General information on identification of the diseases and immediate actions to be taken	continuous	DAPH

Annexure 7

Guidelines for government Veterinary Surgeons in ND Suspected Case

1. The Government Veterinary Surgeon receives information on a suspected disease case from farmers, officers of the Department of Wildlife Conservation, or the general public.
2. If Newcastle Disease (ND) is suspected based on the case definition/post-mortem lesions, rapid antigen test is performed. If not, the relevant VIO is informed for rapid antigen test.
3. Advise the farmer to stop the movements of poultry and poultry products from the suspected farm and to ensure proper disposal of dead birds and farm wastes.
4. Preliminary investigation is carried out immediately, and perform post- mortem
5. VS inform VIO the suspicious of the disease (differential diagnosis) for investigation
6. VS support VIO to perform the investigation and screen using rapid antigen test.
7. If ND still suspected VS support VIO on sample collection and dispatch of samples to VRI
8. VS make sure not to transport of any bird from the farm.
9. The samples should be accompanied by the sample submission form (refer, Annexure -3 post-mortem sample submission format) and Preliminary Investigation Format (refer, Annexure 9 - Initial Investigation Report format- FA/OH/32) to VRI
10. Additionally, copies of preliminary investigation reports should be sent to the DAH and the relevant Provincial Director.
11. The farm premises should be sealed by obtaining Magistrate's Orders according to Section 4 of the Animal Diseases Act, No. 59 of 1992, after confirmation.
12. Veterinarians in the adjacent ranges should be informed and vaccination campaigns should be started in the farms within 3 km radius of the infected farm.
13. The VS should be alert for any new cases in the area, and weekly epidemiological reports (refer, annexure 10: Weekly Epidemiology Report format - FA/OH/33) are submitted continuously until four consecutive nil reports are achieved.
14. If the disease shows signs of spreading to nearby farms or new localities, the VIO must be informed immediately, and a detailed epidemiological investigation should be initiated in collaboration with the VIO.

Annexure 8

Guidelines for Veterinary Investigation Officers in ND Suspected Case

1. Collect information on the preliminary investigation carried out by the GVS (Government Veterinary Surgeon) of the area.
2. VIO perform an epidemiological investigation with the support of relevant GVS. Screen of birds using the ND rapid diagnostic test kit.
3. Irrespective of the rapid diagnostic test kit results (test positive or negative), if clinically suspected ND, perform post-mortem for fresh carcasses and collect the samples
4. Inform Director Animal Health via hotline or telephone call.
5. The samples are dispatched to the lab according to the guidelines provided (refer annexure 12 Guideline for sample collection storing and dispatching). The sample submission form should be accompanied by the samples (refer, annexure 3 post-mortem sample submission form)
6. The VIO should submit the epidemiological investigation report (refer, annexure 9 - initial investigation report) to DAH after the initial investigation.
7. Inform AVL (Animal Virus Laboratory), VRI to be ready to receive samples of suspected ND and send the samples to AVL.
8. Aware VSs on the laboratory confirmatory of ND and support in ND vaccination program.

Annexure 9

PRELIMINARY DATA ON OUTBREAK OF NOTIFIABLE DISEASES (FO/AH/32)

Name of Disease: _____ Date: _____ Month: _____ Year: _____

I . Location

Province:	District:
Veterinary Range:	Div. Secretary Division (s) affected:

Boundaries of the D.S .Division (S) affected:	
North:	East:
South:	West:

2. Source of infected suggested

Possible date of first case:	Introduction of Animals:	☐
Spread of infection from adjoining area: ☐	Return of Animals from Jungle:	☐
Endemic foci: ☐	Unknown:	☐

3. Particulars of disease outbreak:

Name of Infected Village	Species	No. of susceptible Population (approx.)	No. of cases from the beginning of outbreak	No. of deaths from the beginning of outbreak

Date of previous outbreak in the VS range: disease:	Date of last vaccination against this
Date of Index case:	
Ongoing disease control activities any:	Locality of Index case:

4. Clinical Signs:

5. Major Post Mortem Findings:

6. Samples submission for laboratory confirmation: Yes/No

Nature of sample:

Date of collection:

Collected by: VS, VIO, VRI Staff

Date of submission:

Sample submitted to: VRI, VIC, Dvs, PD

Lab findings:

7. Vaccine stock against the suspected disease

No of doses available:

Date of Expiry:

Batch No:

Date:

Name & Signature:

Veterinary Surgeon/Veterinary Investigation Officer

Note: This form shall be filled in triplicate and send to Director Animal Health, Department of Animal Production & Health, P.O Box 13, Gatamber. Peradeniya and Provincial Director, DAPH. This form shall be submitted for all the notifiable disease outbreaks occurring in your area. Thereafter weekly reports should be submitted until 5 weeks after the occurrence of the last clinical case.

In addition disease outbreak shall be informed immediately to Director Animal Health by phone or telegram for prompt action. T.P: 0812388317, Fax: 0812388317

Annexure 10

WEEKLY ANIMAL DISEASE OUTBREAK RETURN

(FO/AH/33)

District: -

Name of Disease: -

VS Range: -

Reporting Period:- From..... to

[illegible]

.....

Government Veterinary Surgeon

Annexure 11

Disease Investigation Report

Epidemiological Investigation Report

1. Administrative Information

- a. Investigation Reference No -
- b. Date and Time of Investigation -
- c. Reporting Officer -
- d. Veterinary Investigation Centre -
- e. Veterinary Range -

2. Event Notification Details

- a. Source of Notification -
- b. Date Notified -
- c. Complaint -
- d. Reason for Investigation -

3. Investigation Team (name /designation/Institution)

4. Geographic and Epidemiological Location

- a. Province and district -
- b. Divisional Secretariat Division -
- c. Grame Niladari Division -
- d. Village -

e. Farms GPS Coordinates:

- Latitude -
- Longitude -

f. Farm Boundaries / Nearby Landmarks: (Surrounding GN and Vs rangers):

g. Map sketch attached: Yes / No

5. Farm Identification and Ownership

Name of the Farmer/s name/ address/ Contact No	Farm registration No	Farm type(Cattle/Buffalo /Poultry/Swine/ Goat/Backyard	Purpose of rearing

6. Animal Population Details:

Species	Breed	Total Population	Age	Sex	
				Male	Female

7. Investigation findings

a History (Past and Present)

(include clinical history/clinical course No affected/index case/onset of signs/No at risk)

b. Farm management assessment

- Management (housing/feed/ water)
- Biosecurity status
- Waste disposal method

c. Animal movement and risk factors

- Recent animal introduction (Date / Number / Source / Health status)
- Contact with neighboring animals
- Exposure to wildlife

d. Vaccination History/vaccination record:

e Findings at date of investigation (describe investigation findings in detail including morbidity rate/mortality rate case fatality rate etc..)

8. Postmortem examination findings

- Postmortem conducted: Yes / No
- Macroscopic finding (gross) :
- Photographs sent: Yes / No

09. Sample collection

Animal ID	Sample type	Sample no	No. of samples	Test requested

a. Any field tests conducted:

10 Samples Submitted to Laboratory

a. Test performed in VIC

b. Samples dispatch to VRI

11. Differential diagnosis

12. Tentative diagnosis

13. Immediate action taken with tentative diagnosis

14. Laboratory Results

15. Confirmatory diagnosis

16. Conclusion and Recommendations

17. Follow-up Plan /visit

.....

Veterinary Investigation Officer:

Date:

Annexure 12

Guideline for sample collection storing and dispatching

Any disease event complies the case definition of Newcastle disease must be sampled and reported as follows:

- Collect oropharyngeal swabs from 10 -15birds.
- Put swabs from five birds into each vial of viral transport medium (VTM).
- Collect cloacal swabs from the same 10 birds.
- Put cloacal swabs from five birds into each vial of VTM. Do not mix oropharyngeal and cloacal swabs in the same vial.
- If there are dead birds collect trachea, lungs, liver, spleen, kidney and intestine.
- Label samples with farm name and date.
- Complete a Newcastle disease surveillance laboratory submission form (refer, Annexure 3 – post-mortem sample submission format (clinical disease)
- All the samples need to be transported in cool boxes to AVL as soon as possible with the completed submission form.

Annexure 13

Guidelines for disposal of dead birds in ND suspected or confirmed farms

Safe, disposal of carcasses is crucial in preventing the spread of Newcastle Disease (ND) in a confirmed or suspected outbreak situations.

- Carcasses must be disposed within 24 hours of death or detection.
- Should not throw carcasses into open fields, water bodies, or garbage pits.
- Do not use dead birds as feed for other animals.
- Selling, giving away, or moving dead birds off the farm is strictly prohibited.

Recommended Methods for Disposal

1. Deep burial (for small & medium farms)

- The site of disposal should be 50 meters away from water sources, public access and should be located within the farm boundary.
- The pit should be at least 1.5–2 meters deep and 1 meter wide.
- The bottom of the pit should be lined with lime.
- Place carcasses in the pit and add another layer of lime.
- Cover with soil and compact to seal the pit to prevent scavenger access.
- Mark burial sites clearly with date and number of carcasses).
- Use a rotational burial area system to prevent environmental contamination and overloading of one spot. Length of the time gap depends on number of birds buried.

Time gaps should be maintained as follows

< 200 birds – at least 6 months

> 200 birds – at least 1 year

2. Incineration (for large farms)

Should reach >800°C for proper destruction.

Ashes should be buried after the incineration process.

additional bio security measures

Should wear gloves, masks, and boots while handling dead birds.

All the tools and hands should be disinfected after the process.