

CHARACTERISTICS

Synonym or Cross Reference	NDV, velogenic Newcastle disease (VND)
Disease	It primarily affects the respiratory system of birds, but nervous system and enteric (or viscerotropic) forms occur. In humans, Newcastle Disease virus causes mild fever and conjunctivitis, but the condition is generally very mild and self limiting.
Morphology	Enveloped virus with two outer-membrane proteins-haemagglutinin-neuraminidase (HN) and fusion protein (F)-that induce neutralizing antibodies. NDV belongs to serotype 1 of the avian paramyxoviruses.
Zoonosis	Newcastle disease is a minor zoonosis and can cause conjunctivitis in humans.

RISK GROUP & CONTAINMENT REQUIREMENTS

ABSL-2	For all procedures utilizing infected animals.
BSL-2/BSL-2+	For all procedures involving suspected or known infectious specimen or cultures, work in a BSC unless otherwise approved and stated in lab-specific manual.
Risk Group 2	Risk Group 2

LABORATORY HAZARDS

Primary Hazards	Direct skin contact with infected animals or Newcastle Disease virus or vector. In laboratory settings, Newcastle Disease virus causes mild fever and conjunctivitis. but the condition is generally very mild and self limiting.
Sources	Samples described in IBC protocol.
Lab Acquired Infections (LAIs)	One reported Infection where the infection was acquired by droplet exposure to the eye while grinding infected chicken in the laboratory.

PERSONAL PROTECTIVE EQUIPMENT

Additional Precautions	Additional PPE may be required depending on lab-specific SOPs and IBC Protocol.
Minimum PPE Requirements	Lab coat, disposable gloves, safety glasses, closed toed shoes, long pants.

SPILL PROCEDURES

Large	Immediately notify all lab personnel and clear the area. Remove any contaminated PPE/clothing before exiting the lab. Lock all entry doors, post warning signage, and deny entry. Call DPS (213-740-4321) and ask to notify EH&S. Inform the PI and/or Lab Manager/Supervisor as soon as possible.
Small	Notify all lab personnel lab. Remove contaminated PPE and don new PPE. Cover spill area with absorbent material and add fresh 1:10 bleach:water. Allow 20 minutes (or as directed) contact time. After 20 minutes, clean up and dispose of materials.

VIABILITY

Disinfection	Use 10 % dilution of household bleach (minimum 0.3% sodium hypochlorite) for 20 to 30 minutes, or an acceptable time approved by IBC and EH&S.
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VIABILITY

Survival Outside Host	NDV can survive for several weeks in the environment, especially during cool weather. NDV is generally shed during the incubation period and for a short time during recovery. Birds in the pigeon family can shed the virus intermittently for a year or more.
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HEALTH HAZARDS

Host Range	Shed in respiratory secretions and feces of birds.
Incubation Period	24 hours following eye exposure.
Infectious Dose	Highest titers were recorded at day 4 post inoculation when titers of virus were 10(6) median egg infectious doses (EID50)/g in the heart/kidney/spleen pool, 10(4.2) EID50/g in the leg muscle and 10(4) EID50/g in the breast muscle and feces
Modes of Transmission	Direct skin contact with infected animals or Newcastle Disease virus or vector. Direct contact with Newcastle Disease virus, including through droplets. Mucous membrane exposure: splash to eye(s), nose or mouth. Inhalation. Ingestion.
Signs and Symptoms	Self-limited conjunctivitis with tearing and pain that may develop within hours. Headache and flu-like symptoms can occur.

EXPOSURE PROCEDURES

Medical Follow-up	Visit USC’s designated healthcare provider. Bring a copy of this PSDS.
Mucous Membrane	Flush eyes for 5-10 minutes at eyewash station.
Other Exposures	Immediately wash affected area with soap and water for 15 minutes.
Reporting	Immediately report incident to supervisor, notify EH&S, and complete Manager’s Report.

MEDICAL PRECAUTIONS/TREATMENT

Prophylaxis	None
Surveillance	Monitor for symptoms of infection. Confirmation by identification of conjunctivitis, isolation of virus, serology.
Treatment	Support treatment for viral conjunctivitis.
USC Requirements	Immediately report any exposures to Environmental Health & Safety.
Vaccines	No vaccine available

REFERENCES

BMBL http://tiny.cc/cdc-bmb1	CDC https://www.cdc.gov/
NIH Guidelines http://tiny.cc/nih-bio-secure	Boston University http://tiny.cc/bu-ndv
WOAH http://tiny.cc/woah-ndv	

