

New World Screwworm Update for Illinois Clinicians and Health Departments

Summary and Action Items

1. Human myiasis is rare in the United States and can be caused by several species of flies. [New World Screwworm \(NWS\)](#) flies are of particular concern because they can invade and feed on living tissue. These flies have occasionally entered the southern United States following northward migration from South and Central America, and they are also present in Africa and the Caribbean.
2. IDPH urges clinicians to review [CDC clinical guidance on NWS](#) including information on relevant [geography of spread](#), risk factors, specimen collection and maggot disposal.
3. Clinicians who suspect NWS should immediately call their [local health department \(LHD\)](#) for information on how to confirm an NWS diagnosis. NWS infestation in a human is immediately reportable.
4. Local health departments should review information on the IDPH Sharepoint site for NWS.

Background

Human myiasis is an infestation of human tissue by fly larvae (maggots). One form of myiasis is caused by the New World Screwworm (NWS) fly, *Cochliomyia hominivorax*. The adult NWS fly is a metallic blue blow fly with three distinct dark stripes on the thorax, located just behind its head, which features prominent orange eyes. The larvae can burrow into living tissue, open wounds, and natural body cavities of humans and other warm-blooded animals. NWS infestations occur in regions where the fly is endemic, including Central and South America, Africa, and the Caribbean Islands. However, its range has been expanding northward and now includes parts of the southern United States. NWS can infest many species of animals as well as humans.

Other types of blowflies can also affect humans but can only burrow into dead tissue. Myiasis of any type is uncommon in humans in the United States. Most people diagnosed with myiasis due to NWS in the U.S. have traveled to tropical areas where the disease is more common.

New World Screwworm was eradicated from the U.S. in the 1960s. Currently in the U.S. there have been NWS cases in domestic animals in New Mexico and Texas. The United States Department of Agriculture (USDA), Animal Plant and Health Inspection Service (APHIS) [posts the location](#) of the NWS in U.S. animals.

Clinical features and Reporting

If a case of human myiasis is suspected in Illinois, the affected person should be asked about relevant travel to areas where the NWS is circulating especially if they have additional [risk factors](#) for infection (existing wounds, sleeping outdoors, certain medical conditions).

Consider NWS in patients who:

- Report recent travel to regions where NWS is present.
- Have visible larvae or egg masses in a wound, ears, eyes, nose, mouth, or other body orifice.
- Have rapidly progressing and painful wounds with foul odor, bloody discharge, and swelling in otherwise healthy tissue.
- Report sensation of movement in wounds or body orifices

New World Screwworm is immediately reportable in the state of Illinois under the heading of "Any unusual case or cluster of disease." Reports should be made to the [local health department](#) of residence of the suspected case.

Treatment:

Treatment is removing ALL the larvae (maggots) from the wound. In some cases, surgical removal may be necessary since larvae can burrow deep into wounds.

- All larvae (maggots) should be put intact into a leakproof container with 70% ethanol which both neutralizes and preserves them for confirmatory diagnostic examination. If that is not available, 70% (or greater) isopropanol or 5-10% formalin are alternatives but are not preferred.
- **Do not throw any live maggots in the trash or outside** as this could result in establishment of NWS populations in the local area.
- Re-examine treated lesions after 24 to 48 hours to confirm no live larvae remain.

It is important to properly collect the larvae (maggots) for identification purposes.

Specimen Handling and Larvae (Maggot) Disposal:

Submission of intact larvae is critical for speciation of the insect which relies upon identifying morphologic features that distinguish NWS from other fly species.

- IDPH laboratories may submit both larvae and high-quality photographs to the CDC for diagnostic evaluation.
 - Photograph submission is the preferred first step, as it may allow for a rapid preliminary rule-in/rule-out assessment. However, the CDC may request physical larvae to complete a final confirmatory diagnosis.
 - Submitted photographs must be taken using a high-quality dissection microscope. Images should be high resolution and capture multiple angles of the specimen, including both ends of the worm, with particular emphasis on the spiracular plates and tracheal tubes.
- Collect the larvae for submission in a leakproof container with 70% ethanol and contact your local health department for submission approval and shipping instructions.
 - Larvae submitted for identification should be collected from different depths within the wound, when possible.
- Collect remaining larvae and place them into a separate leakproof container with 70% ethanol. Please save these larvae until it is known they are not needed for identification purposes before disposing into medical waste.

Do not dispose of extracted larvae or eggs in the trash or outside without first killing them.

Prevention:

Clinicians should communicate and share [prevention instructions](#) for IL residents who are planning to travel to areas infested with NWS.

For Animal Infestations:

- The Illinois State Veterinary Medical Association (ISVMA) in conjunction with IL Dept of Ag has issued information to veterinarians through the Illinois Beef association, Illinois Pork Association and Illinois Farm Bureau.
- The Illinois Department of Agriculture in conjunction with USDA APHIS handles NWS concerns in all the warm-blooded mammals including pets, except for wildlife.
- The [USDA website](#) contains information on management of animals with NWS:
- [USDA playbook](#) for NWS