



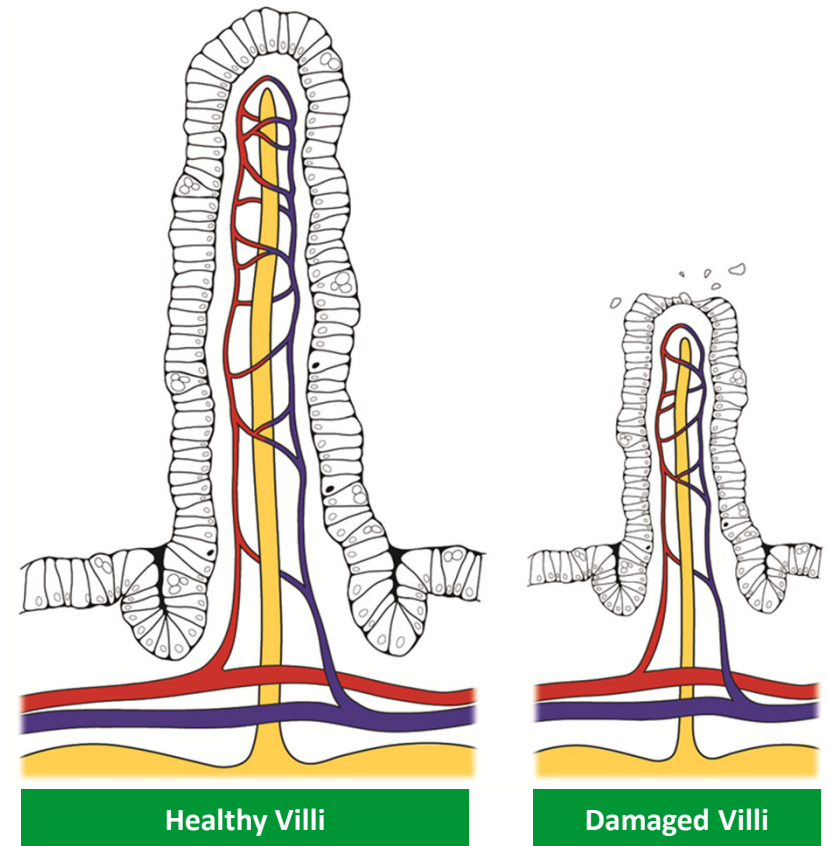
Swine Enteric Coronavirus Disease (SECD)

A Threat for Your Pigs

A Biosecurity Training Manual

How does SECD affect my pigs?

- The lining of the small intestine is damaged by SECD infections.
- The villi, or absorptive surfaces of the intestine, atrophy and can no longer absorb water and other nutrients.
- When the villi are damaged, piglets get dehydrated and die.
- The villi take 7-8 days to grow back after infection.
- Having piglets on milk will delay healing of the villi.
- Taking piglets off milk and supporting them with electrolytes will speed healing and possibly save their lives.



What are the clinical signs of SECD?

Clinical signs of SECD:

1. Acute diarrhea that spreads to pigs of all ages, and/or
 2. Vomiting and listlessness, and/or
 3. High mortality
- Morbidity (how many affected) can approach 100% in all ages.
 - Mortality (how many die) depends on the age of pig infected.
 - Baby pigs: 100%**
 - Nursery pigs: 5-15%**
 - Finisher Pigs: 1-2%**
 - Sows: <1% mortality, 5-10% abortions**
 - Initial outbreak can spread within 24 hours of exposure.
 - Signs continue for 7-28 days depending on farm management.
 - If SECD becomes endemic in a herd, there can be low levels of diarrhea throughout the herd.

How does SECD spread?

- Spread of the virus is by the **fecal-oral** route.
- Pigs must ingest the virus from infected feces to become infected.
- The virus is shed in large amounts in the feces of infected pigs.
- Any object that is contaminated with pig manure (vehicle, people, clothing, shoes, shovels, animals) can be a source of infection.
- One gram of feces contains 1 to 10 trillion viruses.
- SECD is highly contagious and only a small amount of infected feces (50 to 60 viruses), less than the size of a pin head, is needed to start an infection in an entire herd.



SECD survives in the environment for a long time.

SECD survives in the following:

- Fresh feces at 100°F to 140°F for 7 days
- Manure Slurry
 - Frozen - 28 days
 - 40°F for 28 days
 - Room temperature for 7 days
- Water for 7 days
- Wet feed for 28 days at room temperature
- Dry feed for one week at room temperature



SECD survival is enhanced by:

- Low temperatures
- Moderate humidity (50%)
- Neutral or mildly acid pH (6.5)



How is SECD diagnosed?

- SECD **cannot** be diagnosed based on clinical signs alone.
- SECD can look similar to other gastroenteritis diseases:
 - Viral – Transmissible gastroenteritis (TGE), rotavirus, circovirus
 - Bacterial – *Clostridium spp.*, *E. Coli*, *Salmonella*, *Enterococcus* and *Lawsonia*
 - Parasitic – *Coccidia*, *Cryptosporidium* and Nematodes
- **Laboratory testing is the only way to confirm SECD.**
- The New Jersey Animal Health Diagnostic Laboratory can help if you or your veterinarian suspects SECD.
- Information about the test can be found on the NJ Animal Health Diagnostic Laboratory's website (<http://jerseyvetlab.nj.gov>) or by calling the laboratory (609) 406-6999.
- Intestines, feces, fecal swabs, oral fluids and environmental samples are appropriate diagnostic samples for SECD testing.

Does exposure provide immunity for my pigs?

- Exposure to the SECD viruses provides immunity to the disease for 3-6 months.
- Targeted feedback, which is the intentional feeding of virus contaminated material, allows the sows to develop immunity which is passed to her piglets in colostrum.
- The stress of weaning and declining antibody levels can cause pigs to become susceptible to the virus and get sick.
- Vaccines against PEDV, one of the two disease agents, are available that can be used in sows prior to farrowing.
- Vaccine use is recommended in either endemic herd or herds that previously had PEDV infections.

Targeted feedback and vaccines should be used under veterinary supervision.

How do you treat SECD?

Supportive and symptomatic treatment is used:

- Piglets: 7-21 days remove from the sow and support with electrolytes until recovered
- Nursery Pigs: electrolytes and anti-inflammatory medicine
- Finishing Pigs: anti-inflammatory medicine
- Pregnant Sows: anti-inflammatory medicine

Follow your veterinarian's recommendations when using these products.



What should I do if I have a positive sample for SECD?

- A Federal Order issued on June 5, 2014 **requires SECD to be reported to the State Veterinarian (609) 671-6400 or USDA-APHIS-VS (609) 259-5260.**
- Once a herd is considered positive (having both the signs of SECD and a positive test result) the State and USDA-VS veterinarians will work cooperatively with you and your veterinarian to develop a Herd/Premises Management Plan.
- Ask if federal funding is available to help with the Herd/Premises Management Plan development, biosecurity implementation and testing for SECD.



Herd/Premises Management Plan

- The goal of the Herd/Premises Management Plan is to decrease the shedding and spread of SECD.
- The Herd/Premises Management Plan will follow the best management and disease control practices known to date.
- Producers submitting samples for diagnostic testing must include the Premises Identification Number (PIN) for the site where the pigs are located. In order to get the PIN, complete the premise registration form <http://www.nj.gov/agriculture/pdf/PremiseRegForm.pdf> or call (609) 671-6400.
- Producers will be required to maintain up-to-date records of animal movement onto and off of their premises.
- Records of animal movement need to be accessible to animal health officials when needed.
- Producers who follow a Herd/Premises Management Plan have no restrictions placed on movements of animals off their premises.

Line of separation

- The Line of Separation is the line between the area that is to be used by outsiders and the area to be used by farm personnel.
- It is important that you, your family, your employees, and haulers are aware of the Line of Separation at all times.
- When unloading pigs, ensure haulers do not cross the Line of Separation.
- There are multiple areas on the farm that a Line of Separation can exist:
 1. Cab of the truck
 2. Back of a trailer
 3. Farm entrance
 4. Building entrance



How do I prevent SECD from coming onto my farm?

By focusing on five key areas of farm biosecurity:

1. Incoming animals
2. Vehicle and transport
3. People
4. Fomites
5. Contaminated Feed

Fomites = any agent (clothing, shoes, bedding) that is capable of carrying and transmitting SECD virus.



1. Incoming animals

- Herd replacements can bring the SECD viruses onto your farm.
- Recommendations for outside replacements:
 1. Buy from known negative herds.
 - Buying pigs at shows can be risky since pigs may have SECD or they could have picked it up at the event.
 2. Isolate new additions for a minimum of one week.
 - Strict biosecurity should be practiced.
 - Assume animals are positive.
 - Closely monitor the animal for signs of diarrhea or vomiting.
 3. Test animals of unknown SECD status before they enter your herd.



2. Vehicle and transportation biosecurity

- Vehicles entering your farm from another infected farm can carry the virus on the wheels and undercarriage.
- Restrict vehicle access to your farm and limit the areas of traffic.
- Haulers should come with a clean and disinfected truck to pick up pigs.
- Once the haulers/truckers are on your farm, do not let them enter your barn.
- If a hauler cannot come with a clean truck, create a Line of Separation that must not be crossed.



2.1 Clean and disinfect trucks and vehicles

- Proper cleaning and disinfection is a critical step to prevent the spread of the SECD viruses.
- After hauling pigs to markets, sales or auction barns, wash and disinfect vehicles before returning to your farm.
- Be sure to clean the undercarriage and tires.
- The truck and trailer must be thoroughly cleaned, washed, disinfected and completely dry before using again.



2.2. Which disinfectants are effective?

SECD is killed by products that contain the following compounds*:

- Phenols (some examples are One-Stroke[®], Tek-trol[®], Environ[®])
- Peroxygen (an example is Virkon[®]-S)
- Chlorine (an example is Chlorox[®])
- Combination or glutaraldehyde (an example is Synergize[®])

SECD is not killed by products that contain the following compounds*:

- Chlorhexidine (examples are Nolvasan[®] and Virosan[®])
- Quaternary Ammonium (an example is Roccal[®]-D)

Follow label directions for mixing and use at all times when using any disinfectants.

*The above are examples of commercially available products. There may be other products on the market that contain the same compounds. Mention of commercial products names does not imply recommendations or endorsements by the NJDA or USDA over products or brands not mentioned.

2.3 Five steps for vehicle cleaning and disinfecting

1. Remove all manure and bedding.
2. Wash with soap to remove any organic material and rinse.
3. Apply an appropriate disinfectant, per label directions, to all exterior and interior surfaces (including panels, gates, crowd bars and shovels).
4. Clean and disinfect the inside of the cab, including pedals, floor of the cab, steering wheel, door handles and dashboard.
5. Dry the vehicle.
 - Park vehicle on an incline to drain and dry.
 - Use a dryer or have a minimum of two days downtime.



3. People, including you, can bring SECD onto your farm

For visitors to your farm:

- Limit visitations to your farm.
- Ask visitors if they have been to other pig farms within the past 24 hours.
- It is best to maintain at minimum one overnight period of downtime between farm visits.
- All visitors should put on clean coveralls and boots prior to crossing the Line of Separation and entering your barn.
- If boots or disposable boots are not available, have visitors disinfect their boots immediately prior to and after crossing the Line of Separation.



Downtime = the time away from other pigs including fairs, shows, sale barns, or any other location that houses swine. A minimum of one day of down time is recommended between exposures.

3.1. Create a clean crossing

If market personnel, live-haulers or other transporters and visitors need to cross the Line of Separation, create a Clean Crossing.

1. Cover-up

- Have them wear new disposable boots and coveralls as soon as they get out of their vehicle.

2. Contain

- Used disposable boots, coveralls and other objects should be removed and placed in a clean trash bag.

3. Clean up

- Have them wash/sanitize their hands and disinfect all contaminated supplies that cannot be thrown in a trash bag.



Create a Clean Crossing for yourself to prevent you from introducing SECD to your farm

3.2. When visiting other swine premises

1. Follow adequate downtime between farm visits.
2. Be prepared.
 - Carry a set of clean or disposable coveralls and boots to use.
3. Upon arrival:
 - Park in a designated parking spot.
 - If no parking area exists, park away from the livestock areas.
 - Avoid going through muddy areas.
 - Perform indoor work first, followed by outdoor tasks.
4. Prior to leaving the premises:
 - Remove disposable footwear and place in a trash bag and leave on the farm. For non-disposable footwear, disinfect and remove them prior to leaving the farm. Remove coveralls and place them in a trash bag to be washed later.
 - Wash and disinfect your vehicle and shoes prior to returning to your farm.

4. Birds, pets and wildlife can bring SECD onto your farm

- Keep pets such as dogs and cats away from the pig areas.
- Prevent rodents and other pests, including wildlife and birds, from entering your buildings.



5. Feed can also bring the SECD viruses on to your farm

- Contaminated feed can carry the virus.
- Avoid last minute deliveries.
- Holding feed for two weeks before feeding provides adequate time to kill the virus and prevent transmission.



Important actions to take if SECD is diagnosed at your farm

1. Report it to the NJ Department of Agriculture (609) 671-6400 or USDA-APHIS-VS (609) 259-5260.
2. Ensure the Line of Separation is strictly enforced to prevent spread of the viruses.
3. Notify any pig farms within two miles of your premises.
4. Contact feed mills, semen suppliers, mortality pick up and any other transporters to let them know your herd is positive so they can adjust delivery schedules to your premises.
5. Establish herd immunity quickly by assuring all animals are exposed and infected as soon as possible. Use of feedback procedures as directed by your veterinarian.
6. In the early stages of an outbreak, consider weaning piglets at 10 days, in particular piglets not exhibiting clinical signs.
7. Implement and practice sound biosecurity measures.

Important actions to take if SECD is diagnosed at your farm

New Jersey Department of Agriculture

Phone: (609) 671-6400, Fax: (609) 671-6413

Email: state.veterinarian@ag.state.nj.us

www.nj.gov/agriculture



New Jersey Animal Health Diagnostic Laboratory

Phone: (609) 406-6999, Fax: (609) 671-6414

www.jerseyvetlab.nj.gov

USDA-APHIS-VS Office

Phone: (609) 259-5260, Fax: (609) 259-2477

Other sources of SECD information:

NJDA Swine information: <http://bit.ly/1bQ0Mcv>



National Pork Board: <http://bit.ly/1IBzBzd>

USDA APHIS website: <http://1.usa.gov/1F7MM8K>



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