SOUTHERN NEVADA HEALTH DISTRICT
ENVIRONMENTAL HEALTH DIVISION
POLICY AND PROCEDURE

DIVISION: Environmental Health (EH) **PROGRAM:** ***Legionella***	**NUMBER:** EH-097
TITLE: Investigation Procedure for Travel Associated Cases of Legionellosis	**EFFECTIVE DATE:** April 21, 2021
APPROVED BY DIVISION DIRECTOR: Chris Saxton, MPH-EH, REHS	**ORIGINATION DATE:** December 17, 2020
	LAST REVIEW/REVISION DATE: November 30, 2021

I. PURPOSE

The purpose of this procedure is to ensure a standardized operating procedure when investigating travel associated cases of Legionellosis that are reported to SNHD by the Centers for Disease Control and Prevention (CDC).

II. SCOPE

This policy applies to all EH staff that investigate travel associated cases of Legionellosis.

III. DEFINITIONS

Summary of abbreviations and acronyms used in this document	
EH	**Environmental Health**
EHS	**Environmental Health Specialist**
SNHD	**Southern Nevada Health District**
CDC	**Centers for Disease Control and Prevention**
DSC	**Office of Disease Surveillance and Control**
DIIS	**Disease Investigation & Intervention Specialist**
PPE	**Personal Protective Equipment**
ELITE	**Environmental *Legionella* Isolation Techniques Evaluation**
POC	**Point of Contact**
LEAF	***Legionella* Environmental Assessment Form**
SNPHL	**Southern Nevada Public Health Laboratory**

IV. POLICY:

It is the policy of SNHD for staff to consistently respond to travel associated with cases of Legionellosis upon DSC/CDC notification.

SNHD will activate its Emergency Operations Plan (EOP) and appropriate annex(es) as directed by the District Health Office (DHO) or designee, for any event that exceeds normal daily activities and/or when SNHD resources are expected to be exhausted and requests for additional resources will need to be made through the County Office of Emergency Management and Homeland Security from other local, state, federal, and/or private entities. The Community Health Division, including the DSC and the Office of Public Health Preparedness, and/or the EH Division may provide recommendations to the DHO or designee to activate the EOP and appropriate annex(es).

V. PROCEDURE

The initial facility contact and environmental investigation will occur within seven business days of EH being notified of the case. Water samples collected during the investigation will be delivered to the analytical lab within 24 hours and results will be provided to the facility within two business days of being reported to EH.

A. Case Notification and Site Visit Preparation

1. DSC notifies EH of a confirmed case of Legionellosis. A patient interview is conducted by the DSC DIIS to determine possible exposure sites during the incubation period.

2. Once EH receives the facility information from the DSC DIIS, the assigned EHS will contact the facility to schedule an initial site visit. A copy of the CDC LEAF is provided to the facility contact. EHS will request the following from facility management prior to or at the time of the investigation:
   a. A copy of their current water management program;
   b. Reasonable access to the facility; and
   c. Plans/diagrams of water supply lines or risers.

3. DSC will draft a notification of investigation letter to be delivered to the facility by DSC and EH.

4. EH will notify Southern Nevada Public Health Laboratory (SNPHL) of possible sample drop off.

B. Site Visit

1. EHS and DIIS will deliver the investigation notification letter to the facility when they arrive onsite.
2. DIIS will confirm if the patient stayed at the facility during the incubation period.

a. If the patient is determined to have been at the property during the incubation period, then the investigation continues with onsite *Legionella* sampling.

b. If the patient cannot be confirmed to have stayed at the facility, then the investigation concludes and EHS will write the SNHD *Legionella* Investigation Report offsite.

C. Onsite *Legionella* Sampling Protocol

1. EHS will don proper PPE for sampling that includes a N95 respirator that is fitted for EHS use and gloves. Gloves will need to be changed in between samples to prevent cross contamination.

2. EHS will collect water samples at the following locations:
   a. The available fixtures in the case room (or nearest available room based on the water supply plans).
   b. The available fixtures in the distal (furthest downstream) room on the same water supply line/loop as the case room.
   c. The hot water return for the water line/loop that services the case room.
   d. Any other possible points of exposure as determined by the patient interview such as: water features, hot tubs, cooling towers, and/or misters.
   e. EHS will sample a minimum of two (2) fixtures per room, targeting the fixtures that pose the greatest risk of exposure.

3. A 1L bulk water sample and biofilm swab are taken at each fixture or sample point (if possible) in accordance with the most current CDC Sampling Procedure and Potential Sampling Sites guide.

4. EHS will record the temperature and chlorine readings for each sample taken and log the data into the CDC Sample Data Sheet.

5. All sampling should be done on the hot water lines unless the EHS has reason to suspect that the cold-water supply poses a *Legionella* risk (>77°F).

6. More detailed procedures for sampling of various fixtures can be found in the CDC Sampling Procedure and Potential Sampling Sites guide.

D. Sample Processing and Handling

1. The collected samples are taken to the local ELITE certified laboratory on the same day of sampling.

2. A Chain of Custody form (lab specific) is filled out by the EHS.

3. EHS will order a *Legionella* serotyping and colony count test from the SNHD contracted laboratory.

E. Sampling Event Result Interpretation

1. Sample results are sent to the facility representative when they are received.
   a. If all samples are NON-DETECT for *Legionella* bacteria, then the investigation is closed and the facility is notified of the end of investigation via email in order to close out the investigation.

   b. If samples are POSITIVE for *Legionella* bacteria, the EHS will recommend that the water riser associated with the case room for permitted establishments, or water features be remediated, and the facility should test 1% of rooms in other risers/buildings. Positive sample results are stored on the H:/drive under the *Legionella* folder in accordance with the Records Retention policy and a copy of the positive isolates are stored at the SNPHL.

2. Positive Sampling Remediation and Monitoring Schedule
   a. The remediated water riser of the facility should be tested on the following three (3) schedules, in the sequence listed below:
      i. Bi-weekly for three sampling periods (6 weeks);
      ii. Monthly for three months; and
      iii. Quarterly for three quarters.

      [*e.g. – Start schedule 1 (biweekly) sampling; when schedule 1 is finished, then start schedule 2 (monthly) sampling and repeat until all the schedules are completed.*]
   b. If the facility receives any additional positive *Legionella* samples during their testing sequence (Schedules 1-3), then the facility would restart their testing sequence back at biweekly testing (Schedule 1).
   c. After the successful completion (or failure - should the facility decline to continue testing or wishes not to) of the monitoring schedule, the EH investigation is complete and the EHS will draft the SNHD *Legionella* Investigation Report.

F. SNHD *Legionella* Investigation Report

1. A final investigation report will be completed for each investigation that includes sample locations, sample results, remediation efforts, a summary of all sampling events and positive results, sampling schedule, and an end date for the investigation.

2. Copies of the Chain of Custody, Sample Results, and CDC Sample Data Sheet are stored on the H:/drive under the *Legionella* folder in accordance with the Records Retention policy.

VI. REFERENCES

A. CDC Environmental Investigation Resources
B. CDC Sampling Procedure and Potential Sampling Sites
C. CDC *Legionella* Environmental Assessment Form (LEAF)
D. CDC Toolkit

VII. ATTACHMENTS

A. CDC *Legionella* Environmental Assessment Form (LEAF)
B. CDC Sample Data Sheet
C. Introduction Letter from DSC
D. Sample SNHD *Legionella* Investigation Report
E. CDC Toolkit