GEORGIA DEPARTMENT OF PUBLIC HEALTH

Kathleen E. Toomey, M.D., M.P.H., Commissioner / Brian Kemp, Governor

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dph.ga.gov

Health Alert: Measles Detection in Wastewater, October 31, 2025

ACTION STEPS:
District and County Health Departments: *Please forward to hospitals and clinics in your jurisdiction*.
Hospitals and clinics: *Please distribute to infectious disease doctors, infection preventionists, emergency department physicians, intensive care physicians, neurologists, radiologists, primary care providers, and pediatricians.*

SUMMARY

The Georgia Department of Health (DPH) is alerting healthcare providers to a detection of measles found in sewage samples through routine wastewater testing. The positive samples were collected on Monday October 27, 2025, from a wastewater treatment plant in the South Metro Atlanta Area, Georgia. Detection of measles in wastewater does not represent an official measles case and this comes at a time when no active measles infections have been reported in Georgia. However, DPH urges healthcare providers to maintain heightened awareness for patients with symptoms compatible with measles and continue to promote vaccination. This detection could mean that there was at least one person with a measles infection present or traveling through the South Metro Atlanta Area around the time of this detection. For further questions about wastewater data please see the attached frequently asked questions document "Frequently Asked Questions on WWSCAN Measurements of Measles RNA in Wastewater Solids."

CLINICAL PRESENTATION

Measles is a highly contagious illness and is spread primarily person-to-person via aerosolized droplets. The incubation period is typically 10 to 12 days but can range from 4 to 21 days. Measles typically begins with a prodrome of stepwise increasing fever (often as high as 104-105° F) accompanied by cough, coryza, and/or conjunctivitis. Koplik spots (tiny red spots with bluish-white centers on the buccal mucosa), which are diagnostic for measles, may appear 2-3 days before the rash and fade 1-2 days later. As fever peaks on day 4-5, a maculopapular rash typically appears on the face along the hairline and behind the ears, and then progresses downward to the chest, back, and extremities. Within 4-5 days, the rash fades in the same order that it appeared.

REPORTING

Measles is a notifiable disease, and suspect cases should be reported to the Georgia Department of Public Health (O.C.G.A. §31-12-2) immediately. Call your local District Health Office or the DPH Acute Disease Epidemiology Section at 404-657-2588 during business hours Monday through Friday, or 1-866-PUB-HLTH (1-866-782-4584) after-hours on evenings and weekends. Do not await laboratory results before reporting.

LABORATORY TESTING

The preferred method for confirming measles is by reverse transcriptase-polymerase chain reaction testing (RT-PCR). Collection of a throat swab (or nasopharyngeal swab) and urine sample for PCR testing is recommended. Measles may also be laboratory confirmed by the

presence of measles-specific IgM antibody or a significant rise in measles-specific IgG antibody titer between acute-and convalescent-phase serum specimens. Collect serum, throat, and urine specimens simultaneously for best results (note: suspect patients should be **isolated** immediately, see **Actions** below). Detailed specimen collection and shipping guidelines are available at the DPH measles website, and DPH epidemiologists will facilitate testing at the time of notification.

To coordinate specimen collection and laboratory submission, call your District Health Office or the DPH Acute Disease Epidemiology Section at 404-657-2588 during business hours Monday through Friday, or 1-866-PUB-HLTH (1-866-782-4584) afterhours on evenings and weekends. **Please do not send specimens directly to the Georgia Public Health Laboratory (GPHL) or the Centers for Disease Control and Prevention (CDC) without prior authorization**.

VACCINATION

Measles-containing vaccine (MMR) remains the most effective prevention against disease. Ensure that patients are up to date on their MMR vaccine. Vaccination is recommended for children at 12 to 15 months of age with a second dose at 4 to 6 years of age. Documentation of two MMR vaccinations or proof of immunity to measles is required to attend school in Georgia.

ACTIONS REQUESTED OF HEALTHCARE PROVIDERS:

- Consider measles in persons with febrile rash illness and clinically compatible symptoms (cough, coryza, and/or conjunctivitis) and a history of recent international or domestic travel, exposure to international travelers, or exposure to a possible measles case.
- **Isolate persons with suspected measles IMMEDIATELY (negative pressure room, if available). Patients should be managed in a manner that prevents disease spread in the healthcare setting.** https://www.cdc.gov/infectioncontrol/pdf/guidelines/isolation-guidelines-H.pdf
- Obtain appropriate clinical specimens. Laboratory testing for measles is required for confirmation. This includes throat swabs and urine for measles PCR and culture, and blood for serology testing (see Laboratory Testing section above)
- Report suspected cases of measles **IMMEDIATELY** by calling your local District Health Office or the DPH Acute Disease Epidemiology Section at 404-657-2588 during business hours Monday through Friday, or 1-866-PUB-HLTH (1-866-782-4584) after-hours on evenings and weekends.
- Ensure patients are up to date on their vaccinations according to CDC's recommended schedules for children and adults.

CONTACT INFORMATION

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Frequently Asked Questions on WWSCAN Measurements of Measles RNA in Wastewater Solids

The following individuals contributed in whole or in part to this FAQ: Ali Boehm, Marlene Wolfe, Amanda Bidwell Abby Paulos, and Alessandro Zulli

This FAQ document is for WWSCAN Public Health and Utility partners

About Measles

What is measles?

Measles (rubeola) is a virus that causes a rash and fever at a minimum. However, it can cause serious complications in some people, especially children under 5 (CDC). Measles symptoms usually appear 7 to 14 days after contact with the virus. Anyone who is not protected against the measles is at risk. Measles is a vaccine-preventable disease, and the vaccination is typically given to children. One dose of the vaccine is 93% effective at preventing disease, and two doses are 97% effective. The measles vaccine is estimated to have prevented over 60 million deaths between 2000 and 2023. However, the global proportion of children receiving the measles vaccine decreased from 86% in 2019 to 83% in 2023 (CDC).

The measles virus is a single-stranded, negative-sense, enveloped RNA virus with a 15.9kb genome. It ranges from 100-300 nm in size.

How is measles transmitted?

Measles is a **highly contagious** virus that spreads person-to-person by contact with infected nasal or throat secretions (coughing or sneezing), by breathing the air that was breathed by someone with measles, or by touching surfaces contaminated with nasal or throat secretions of a person infected with measles (WHO). Humans are the only known host of the measles virus, meaning that animals cannot catch or transmit measles.

Data Interpretation

Why is WWSCAN measuring measles RNA in wastewater?

Previous work suggests that measles virus that sheds from an individual preferentially binds to solids in wastewater and can persist for days to weeks in wastewater (Wu et al, 2024). Research in Belgium and Canada have illustrated that measles RNA can be detected in wastewater. In Belgium, measles RNA was detected during a large, local outbreak of the disease (Rector et al, 2025). In Canada, it was detected after a vaccination campaign using an assay that detected both WT and VA measles (Tomalty et al, 2025).

What does it mean if we detect or do not detect measles in wastewater?

Detection of measles RNA in wastewater means that one or more individuals in the community contributing excretions (feces, urine, saliva, etc) to the wastewater is shedding measles RNA in

those excretions. Measles RNA can come from various sources, including measles natural infection (“wild type” or “WT”) and measles vaccination. The assay used does not detect vaccine strains of measles, and only detects wild type measles. This means that detections of measles RNA from WastewaterSCAN would only be from measles cases, not vaccinated individuals.

Methods

What are you testing for?

Measles RNA is measured in the solid phase of wastewater. Research suggests that measles RNA associates with the solids in wastewater where it can be found in higher concentrations, on a per mass basis, compared to liquid (Tomalty et al, 2025). Droplet digital reverse transcription polymerase chain reaction (ddRT-PCR) is used to measure concentrations of measlesRNA. We use a new assay that is specific to wild type measles: the “modified Roy et al.” assay. The assay targets the 3′ region of the measles N gene and only detects wild type measles and not the measles vaccine (Table 1).

Probe	CATGATGATCCAAGTAGTAGTGA
Forward Primer	AGGATGAGGCGGACCARTACTT
Reverse Primer	CRATATCTGAGATTTCCTTGTTCTC

Table 1. Modified Roy et al. assay for wild type measles.

For more information on the methods we are using please see **this Methods write up**.

Is the assay that you are using “validated”?

We have tested the sensitivity and specificity of the assay using in silico and in vitro approaches. In silico, we confirmed that the assay will detect wild type strains of measles, and the assay will not detect other targets including measle vaccine sequences. The in vitro work confirms the assay does not cross react with a broad range of respiratory targets. Please see this document for more information on assay validation.

Safety

Are there any safety concerns for operators associated with detection of measles in wastewater?

The risk of getting measles from wastewater is extremely low. Measles virus spreads through the air and close contact with an infected person. While small amounts of measles RNA may be found in urine, there is no evidence that it spreads this way.

Resources on Measles Research in Wastewater

Scientific Peer-Reviewed Publications:

- Rapid Identification of Measles Virus Vaccine Genotype by Real-Time PCR
- Multiplexed Detection, Partitioning, and Persistence of Wild-Type and Vaccine Strains of Measles, Mumps, and Rubella Viruses in Wastewater
- Detection of Measles Virus Genotype A in a Non-Endemic Wastewater Setting: Insights from Measles Wastewater and Environmental Monitoring in Canada's Capital Region
- Detection of Measles Virus Genotype D8 in Wastewater of the Brussels Capital Region, Belgium