State of California—Health and Human Services Agency
California Department of Public Health

TOMÁS J. ARAGÓN, MD, DrPH
Director and State Public Health Officer

GAVIN NEWSOM
Governor

Service Update Announcement
Salmonella Serotyping by Whole Genome Sequencing
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Effective September 25, 2023, the California Department of Public Health, Microbial Diseases Laboratory (MDL) will began to transition routine *Salmonella* serotyping utilizing traditional methods to whole genome sequencing (WGS) methods for your jurisdiction(s). Limited staffing resources at MDL to perform traditional *Salmonella* serotyping have resulted in backlogs; this transition is an effort to reduce duplicative testing and better utilize available resources so that actionable public health test results can be available to the local health department as soon as possible.

MDL currently performs traditional serotyping on all *Salmonella* isolates and WGS on *Salmonella* isolates that meet the criteria for CDC's PulseNet surveillance testing. MDL has validated WGS for *Salmonella* serotype prediction (including antigenic formula) and species identification utilizing PulseNet procedures and will report these results to local health departments *for epidemiologic purposes only* via CalREDIE.

Changes to Testing and Reporting:

Effective September 25, most *Salmonella* isolates from stool submitted to MDL for public health testing from your jurisdiction will serotyped by WGS only. The final report for these *Salmonella* isolates will indicate the result as "**Serotyped for epidemiologic purposes only**". No additional test results will be reported. The following comment will be included with this result and can be reported to the original submitting laboratory:

> "The Microbial Diseases Laboratory (MDL) performs whole genome sequencing (WGS) of *Salmonella* for epidemiologic purposes only. The *Salmonella* species, serotype, and antigenic formula determined by WGS are reported directly to the local health department through the California Reportable Disease Information Exchange (CalREDIE). *Salmonella* WGS is not performed on isolates submitted from the same patient and same source collected within 3 months. Please contact your local public health laboratory or the MDL at MDL.Submissions@cdph.ca.gov for additional information or inquiries."

Traditional *Salmonella* serology testing results that may be important and/or requested for clinical purposes will continue to be reported as detailed below in "Instructions for Submission".

Instructions for Submission:

In order to route bacterial isolates accordingly, please follow the guidance summarized in the table below:

Isolate ID status	Test Request	Additional Information to Include on Requisition	Reporting Information
Salmonella isolates that have been identified as Salmonella species and serogrouped.	***Salmonella* ID and Serotyping**	*Salmonella* ID and serogroup If serotyping is being requested by a provider for clinical purposes, please indicate this on the submission form.	1. For most isolates from stool, the final report will indicate the isolate has been tested for **epidemiologic purposes only** with a reportable comment describing public health reporting. WGS species ID confirmation, serotype and antigenic formula will be reported back to the specific Local Health Department or Public Health Laboratory only. 2. A clinical report will be issued for traditional serotyping test results for *Salmonella* isolates from sterile sources, presumptive or confirmed *S. typi* or *S. paratyphi*, or by special request. Results from both traditional testing and WGS will be reported to the applicable Local Health Department.
Salmonella isolates that have been identified as *Salmonella* species but not serogrouped.	***Salmonella* Serogrouping**	Salmonella ID, method used, and any other relevant test results.	*Salmonella* serogrouping will be performed by traditional methods and reported back to the lab submitter. *Salmonella* serotyping will be performed for isolates from sterile sites or presumptive or confirmed *S .typhi* or *S. paratyphi*. WGS species confirmation, serotype and antigenic formula will be reported back to the specific Local Health Department only.

Presumptive *Salmonella* isolates with inconclusive laboratory ID results requiring confirmation, and no serogroup performed or available.	***Salmonella* Identification (ID) and Serogroup**	Presumptive *Salmonella* ID, method used, and any relevant test results	*Salmonella* ID by MALDI-TOF or biochemical methods and serogrouping by traditional methods will be reported to the lab submitter. *Salmonella* ID and serotyping will be performed by traditional methods and reported back to lab submitters for isolates from sterile sites and presumptive or confirmed *S. typhi* or *S. paratyphi*. WGS species confirmation, serotype and antigenic formula will be reported back to the specific Local Health Department only.

For public health laboratory submitters, MDL will issue a monthly summary report of WGS results for *Salmonella* isolates submitted. These epidemiologic WGS results should not be added to a patient's medical record or to LIMS if providers have direct access to LIMS (results may be included in LIMS if reporting to providers can be suppressed). This summary report will include: Submitter Sample ID, ID confirmation, serotype, antigenic formula, and NCBI SAMN Identifier for isolates meeting the criteria for upload to the PulseNet National Database.

Additional Submission Criteria:

1. Ensure that the isolate tube is labeled with two identifiers: patient full name and specimen accession number.
2. Isolates should be subcultured prior to submission on nonselective nutrient agar (e.g., trypticase soy or heart infusion slant) in a tube with leak-proof screw cap closure.
3. Cultures that are mixed (not pure) may be rejected.
4. Duplicate isolates submitted from stool specimens from the same patient that have been collected less than 3 months apart will not be tested unless approved in advance. If approved, phenotypic serotyping will be performed; WGS will not be performed in these cases.

Please contact the MDL general inbox at MDL.Submissions@cdph.ca.gov, or Zenda Berrada, MDL Chief, at Zenda.Berrada@cdph.ca.gov, if you have any additional questions or concerns.