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Laboratory Preparedness and Response Branch Biological Response Section Standard Operating Procedure

Guidelines for Submission of Food Samples for Bacteriological Analysis of Food Borne Disease Outbreaks

General Guidelines:

1. For samples to be analyzed on Oahu, call the Biological Response Section (BRS), Laboratory Preparedness and Response Branch (LPRB) BRS Supervisor or designee at 453-5984 or 453-6641. If BRS Supervisor or designee is not available, call LPRB Chief at 453-5993 or 554-9992). For samples to be analyzed on the neighbor islands, call the respective District Health Laboratory Administrator.
2. Prior to the submission of the samples, provide the laboratory with the following information:
 - a. Type of sample(s)
 - b. Number of samples to be submitted.
 - c. Type of analysis (indicate target organism: example Staphylococcal Enterotoxins, *Salmonella*)
 - d. If the sample is a “mixed plate”, indicate if the component foods are to be analyzed separately or if they may be commingled.
 - e. If the sample is an opened package, indicate if a parallel unopened package of the same lot will also be submitted.
 - f. If the sample is partially eaten, indicate if a parallel sampling of ingredients from the establishment will also be submitted. If so, indicate how many ingredients will be collected.
 - g. Indicate date and time of *expected* arrival in the laboratory.

Maui and Kauai District Health Laboratories have the capability to analyze for *Staphylococcus aureus* and *Bacillus cereus*. If necessary, the laboratory will remove the appropriate aliquot of the sample for analysis and forward the remainder to the State Laboratory Division (SLD) for additional analysis. All samples collected from Molokai and Lanai will be analyzed at the Maui District Health Laboratory for the organisms listed above. BRS will analyze all food samples collected on Oahu and perform analyses for analytes that are not available in the District Health Laboratories such as, *Salmonella* spp., Staphylococcal Enterotoxins (SET), *E.coli* O157:(H7), *Listeria monocytogenes*, and *Shigella* spp.

3. Use sterile technique for collecting bacteriological samples. Avoid unnecessary handling.

4. Mix and shake liquid food before a representative sample is taken.
5. Submit food in their original containers, if feasible.
 - a. Original containers will not be returned.
 - b. SLD can provide sterile sample containers (whirl pack bags or bottles) and collection utensils (spoons, forks, forceps, gauze swabs, disposable scoopers) upon request. Prior notice will be required.
6. Collect 200 – 500 grams (1/2 to 1 lb.) of solid sample or 200 – 500 ml (1/2 pint to 1 qt.) of liquid sample. A minimum of 25 grams is acceptable for food types implicated in an outbreak.
 - a. Ensure a sample representative of the entire lot in question is collected.
 - b. If the total available sample is less than that specified above, *collect all of the sample*.
 - c. The sample amounts specified above are needed *per agent*. If more agents are requested, a proportionately larger quantity of sample will be needed.
 - d. If the amount of sample is inadequate, call the LPRB/BRS at 453-5984 or 554-9992 (or neighbor island District Health Laboratory Administrator).
 - e. Samples recovered from the trash or are otherwise obviously compromised (such as those infested with roaches, ants or other insects) will not be accepted by the laboratory for bacteriological analysis as the results may not accurately indicate the causative agent of the illness. The laboratory reserves the right to reject any samples deemed unfit for bacteriological analysis.
 - f. If possible, the investigator should collect or supervise the collection of samples to ensure that the samples collected are appropriate for the analysis requested, the proper amount is collected and that the sample is collected properly (aseptically). If DOH personnel are unavailable for sample collection, these procedures should be thoroughly explained to the collector. In addition, the investigator should explain proper packaging and transport procedures and how to properly fill out the required paperwork, including the chain of custody.
7. Record all pertinent information.
 - a. If items in a sample are to be tested individually, each item should be identified individually.
 - b. Information on the condition of the food sample should be included (fresh, refrigerated (for how long?), frozen (for how long?) history of the food (example: refrigerated as soon as possible or left out at room temperature for several hours prior to refrigeration).
 - c. Information on the outbreak (how many people involved, incubation period, symptoms, etc.).
 - d. Whether or not clinical specimens will also be submitted to Medical Microbiology Branch (MMB).

8. Label each container, package, or tube appropriately.
9. Pack each sample appropriately for transport to the laboratory. Transport in a cooler on blue ice. If shipment via commercial air carrier is required, ensure that the samples are properly packaged and labeled.
10. Enclose the original Sample Collection Report Form.
 - a. Form should be completely and correctly filled out by authorized DOH personnel.
 - b. For chain of custody purposes, all signatures must be made on the original form. Everyone gaining physical custody of the sample must sign, date and document the time on the chain of custody form upon sample receipt and upon relinquishment.
 - c. If additional forms are submitted to the laboratory to provide supplemental information related to the case, the form should be labeled as an addendum or amendment to the case reference (Epi Log) number to avoid any confusion.
 - d. If the sample is to be split between laboratories, the original chain of custody (Sample Submission Form) will accompany the sample. If a laboratory is to remove an aliquot of the sample and forward the remainder to another laboratory, the forwarding laboratory's final report will be submitted on a separate sheet referencing the Epi Log number.
11. Samples analyzed on Oahu should be delivered directly to the BRS laboratory and physically relinquished to BRS laboratory personnel. Samples should not be left unattended and should not be left at the Medical Microbiology Branch receiving area.
12. All Enteric isolates recovered from food borne outbreaks analyzed on Oahu will be submitted for sequencing analysis. Isolates from the neighbor island laboratories will be handled on a case by case basis and will be coordinated amongst the submitting laboratory, the BRS laboratory and DOCD investigator. Requests for sequencing analysis by must be made at the time of sample submission.
13. After analysis, all food samples will be kept by the laboratory for a maximum of one month subsequent to the submission of the final report, after which they will be discarded.

Some Comments:

In some instances, SLD has been requested to test a single sample (a single food type) during the initial call, but upon arrival at the laboratory, the sample contains multiple food items which the investigator later requests to be analyzed individually. It is IMPORTANT to determine whether a sample is to be tested individually or may be tested as a single unit prior to shipment to the laboratory, as the number of samples will determine the amount of media and reagents will be needed.

It is the policy of the SLD, LPRB/BRS to adhere to proper chain of custody protocol. This means that everyone gaining physical custody of the sample from initial collection to final delivery to the laboratory (BRS) must sign the sample into custody (with the date and time) and must sign upon relinquishment (with date and time). As a general rule, all signatures should be made on the original form. No original signatures should be made on a copy of the original form. A faxed copy of the "Specimen for Examination form" (which is also being used as the chain of custody form) does not constitute proper chain of custody.

Oahu samples are NOT to be left unattended at the MMB receiving area or the SLD reception desk. All food samples must be delivered directly to BRS. If a courier service is to be used, the courier shall be instructed to deliver the samples directly to BRS or shall ask the SLD receptionist to call the BRS food laboratory to retrieve the sample. The courier shall wait for laboratory personnel to receive the sample and sign it into custody. Occasionally, samples are left at MMB specimen receiving area. This is not acceptable, and samples submitted maybe rejected for testing since the chain of custody is no longer valid. Chain of custody protocol requires that anyone gaining physical custody of the sample (including the courier) sign the sample into custody when receiving the sample and signs off when the sample is relinquished. The receiver must sign the sample into custody (someone must physically take possession of the sample).

The neighbor island District Health Laboratories will analyze samples for *Bacillus* and *Staphylococcus aureus* from their respective jurisdictions. The appropriate aliquot will be removed for analysis by that laboratory before the sample is forwarded to SLD, if necessary, for other analyses. Staph Enterotoxin analysis will be performed at BRS; however, the Staph isolation and culture will be performed by the appropriate District Health Laboratory.

If necessary, Sanitation and Food and Drug Branches should be consulted for proper sample collection methods.

The laboratory results are only as good as the samples that are submitted. If there are any questions regarding sample submissions, please ask the laboratory.

Revision History:

January 6, 2020

1. Updated contact information.
2. Updated testing capabilities for District Health Laboratories.
3. Removed references to the PFGE lab and replaced with BRS.
4. Removed references for PFGE analysis and replaced with sequencing analysis.
5. Emphasized the need to determine testing request before shipment to the laboratory.
6. Updated LPRP with LPRB.
7. Updated signatories due to change in management

REVIEW/REVISION LOG
Guidelines for Submission of Food Samples for
Bacteriological Analysis of Food Borne Disease Outbreaks

	SIGNATURE	PRINTED NAME	DATE
Revised by:	<i>Remedios B. Gose</i>	Remedios Gose, MSPH, RM(NRCM)	1/6/20
Validated by:	<i>Cheryl-Lynn Daquip</i>	Cheryl-Lynn Daquip, M(ASCP) ^{CM} Microbiologist V	1/6/20
Approved by:	<i>Edward P. Desmond</i>	Edward Desmond, Ph.D. SLD Laboratory Director	1/7/20

Effective date:	V1: 5/26/17	V2:		
Retirement date:				
Replaced by procedure/date:				

Circle one	SIGNATURE	DATE	DESCRIPTION OF CHANGE*
Reviewed/Revised	Remedios Gose, MSPH, RM (NRCM) LPRB Chief		
Reviewed/Revised	Edward Desmond, Ph.D. SLD Laboratory Director		
Reviewed/Revised			

*Indicate "annual review, no changes" if appropriate.