

## TOXICOLOGY LABORATORY DIVISION

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## PREFACE

In July 1999, the Washington State Toxicology Laboratory became a division within the newly formed Forensic Laboratory Services Bureau of the Washington State Patrol. The Washington State Patrol Crime Laboratory formed another division within the same bureau. It is important the user recognize that each Laboratory Division performs distinct services for the State of Washington and that the appropriate guidelines and requests forms be used for each.

The Toxicology Laboratory Division handbook is organized to provide the following:

- A description of services provided by the Toxicology Laboratory
- General guidelines for the collection, preservation, and packaging of physical evidence
- The procedure for submitting physical evidence

It is not possible for any handbook to be comprehensive for every type of case. The Toxicology Laboratory staff are available to advise you on any specific or unusual case. You can reach a forensic scientist to answer any questions you have by contacting the Laboratory.

## INTRODUCTION

The Toxicology Laboratory Division provides toxicological services to all medical examiners, coroners and law enforcement agencies within the state. Forensic toxicology answers the question: “Did drug or alcohol use contribute to or cause an individual’s death or suspected intoxication?” In support of that effort, the Toxicology Laboratory provides the following services:

- Performs toxicological examinations of blood, urine and/or other tissues collected during a death investigation; or from living individuals who were either the victim of a crime or were suspected of committing a crime in which drugs and/or alcohol may have played a role. This includes suspected driving under the influence (DUI) of alcohol and/or drugs, victims of suspected drug facilitated sexual assault (DFSA), and miscellaneous drug related incidents or crimes. The Toxicology Laboratory reserves the right to decide which method(s) to use in the detection of alcohol and drugs in submitted casework.
- Provides consultation and interpretation for medical examiners and coroners on the results of toxicology analyses in death investigation cases.
- Provides consultation and interpretation for law enforcement agencies and attorneys on the results of toxicology analyses in driving and drug-facilitated crime related cases.
- Provides expert testimony in court trials, hearings, and depositions.

## SAMPLE SUBMISSION

The Toxicology Laboratory provides forensic toxicology services for all law enforcement agencies, coroners and medical examiners within the State of Washington. The laboratory analyzes blood, urine, and other biological tissues or fluids for the presence of alcohol and/or drugs.

### Sample Collection Kits

The Toxicology Laboratory may provide user agencies with kits for sample collection. To order any materials, please call or email the laboratory.

NEVER submit the vacutainer collection needle or any other needle with the samples. Asking the nurse or phlebotomist to resheath the needle is subjecting him/her person to unnecessary risks and is against OSHA regulations. The Toxicology Laboratory will not accept any case that includes a needle or a syringe with the needle attached. Similarly, do not submit the betadine wipes or gauze – these are discarded upon receipt.

*NOTE: The cutting or shearing of a needle from a syringe is prohibited by federal and state regulations. [WAC 296-823-14010]*

## Collection and Submission to the Laboratory

Tubes should be completely filled, whenever possible. Submitting partially filled tubes, or using smaller tubes, may result in partial or incomplete testing. Each assay performed requires a minimum volume of blood and the laboratory may not be able to confirm the presence of drugs if insufficient sample is submitted.

**All samples should be labeled with the subject's name and/or agency case number.** It is important that, when labeling the blood tubes, the printing on the manufacturer's label should not be covered. In addition, the Toxicology Laboratory maintains quality assurance certificates from the manufacturer for specific lot numbers and, if tubes from another source are used, the laboratory may not be able to provide a certificate.

Not only should the proper collection tube be used but it should also be **inverted** after collection to dissolve the container additives within the sample. The additives serve to preserve the sample and to prevent its coagulation; both being requirements under Washington Administrative Code 448-14-020: (<http://apps.leg.wa.gov/wac/default.aspx?cite=448-14-020>).

Once the sample has been collected, place the evidence tape over the top of the tubes/containers. The initials or other identification of the person creating the seal should be placed on the seal or across the seal onto the container.

If urine is collected, please ensure the urine cup cap is sealed correctly to prevent leaking in shipment. This is a commonly encountered and may lead to the loss of the entire sample. **Label the specimen cup with the subject's name and/or agency case number.**

Complete the appropriate Toxicology Laboratory Request for Analysis form and submit along with the samples. Current forms are available online at: <http://www.wsp.wa.gov/forensics/toxicology.htm>. **Do not submit the Crime Lab RFLE forms.** The more information you provide in your request, the more thorough analysis the laboratory can perform. A telephone number and/or email address should be provided should any question arise during analysis. Please note the column on the far right-hand side of the Request for Analysis form is for *laboratory use only*. If the sample is a DRE, a copy of the DRE Face Sheet should also be sent with the completed request form.

**Verify that the subject's first and last name on the request form and the samples are the same.** When there is a discrepancy between the request form and the sample tubes, it is the Laboratory's policy to use the name on the sample tubes.

The request form should be packaged on the outside of the box containing evidence. This allows the Property and Evidence Custodian to access the request form without handling the specimen itself. All specimens should be refrigerated until sent. Specimens may be shipped to the laboratory or hand delivered Monday through Friday during business hours.

## **CASE TYPES**

There are four main case types submitted to the Toxicology Laboratory: Driving Under the Influence (DUI)/Drug Recognition Expert (DRE) cases; Death Investigation cases; Drug Facilitated Sexual Assault (DFSA) cases; and Drug Investigation cases. Use the appropriate form for each type of case: <http://www.wsp.wa.gov/forensics/toxicology.htm>. If you have questions about which form to use, contact our office.

### Driving Under the Influence (DUI)/Drug Recognition Expert (DRE)

Only blood/breath alcohol and blood THC test results are admissible in court as *per se* evidence of intoxication, so when alcohol is suspected and a legal breath test is not conducted, obtain a blood sample and not urine.

### Death Investigation

For deceased subjects, blood is typically the most valuable sample for postmortem toxicological testing. Since peripheral blood is less susceptible to postmortem changes, it is the specimen of choice and is considered the most reliable for interpretation of toxicological testing.

Where available, vitreous humor fluid should be routinely collected (all available fluid should be collected, typically 3-5 mL in each eyeball). It is more than 98% water, and any drugs present in the blood will eventually equilibrate in the vitreous. Vitreous is a particularly useful sample for testing for alcohol to distinguish between postmortem production of alcohol and alcohol ingestion, since the eye as an enclosed organ is generally more resilient to microorganism infestation than other tissues.

Urine, liver, cerebrospinal fluid, gastric contents, other tissues and maggots may also be useful specimens for analysis depending upon the circumstances of the case.

Whenever a death may involve unusual circumstances or unusual drug(s), it is advisable to contact the Toxicology Laboratory for guidance in sample collection.

### Drug Facilitated Sexual Assault (DFSA)

Urine is typically the specimen of choice for drug facilitated sexual assault testing because it provides the longest window of detection. For the best toxicological interpretation, a urine specimen should be obtained within 120 hours of incident.

Blood should additionally be collected if the patient presents within 48 hours of the alleged incident or if the patient appears sedated and/or intoxicated.

Ensure all specimen containers are properly documented and labeled with the victim's name, date and time of collection, and approximate time after the alleged assault.

### Drug Investigation

Non-driving related cases on living subjects where drugs are suspected (i.e. homicide suspect) are considered Drug Investigations. It is important to collect two full gray-top vacutainer tubes of blood whenever possible as drug testing consumes more sample than alcohol testing.

If there is a significant delay between the incident and the blood collection (> 2 hours), a urine specimen may also be useful in Drug Investigation cases. In general, blood provides better evidence of drug influence than urine, but drugs will be detected for a longer time in urine than blood.

## TOXICOLOGY LABORATORY FORMS

Current Toxicology Laboratory Request for Analysis forms can be obtained electronically at <http://www.wsp.wa.gov/forensics/toxicology.htm> or by emailing your request to [toxlab@wsp.wa.gov](mailto:toxlab@wsp.wa.gov). DO NOT SUBMIT CRIME LAB FORMS. Please note that the column on the right hand side of the form is for "Laboratory Use Only". Forms include:

Driving Under the Influence/DRE – Request for Analysis

Death Investigation – Request for Analysis

Drug Facilitated Sexual Assault – Request for Analysis

L.C.B/Drug Investigation – Request for Analysis

## TOXICOLOGY LABORATORY DRUG SCOPE

A list of drugs the laboratory tests for can also be found at <http://www.wsp.wa.gov/forensics/toxicology.htm> This list may change as additional methods are developed.