Special Services refers to any studies performed outside of the physical examination of a decedent. These services include, but are not limited to, toxicology, histology, radiology, microbiology, and genetic testing. Information from these studies are interpreted by the Pathologist for use in determining the cause of death.

Toxicology

It shall be the policy of this office that certain biological specimens will be collected as a matter of routine in cases where autopsies are performed. Toxicology samples are collected on all cases classified as EX, CC, or BR. Standard samples are collected on each individual, if possible. Additional samples may be collected per Pathologist request.

Standard toxicology samples include blood (2 gray top tubes, 1 red top tube, 1 purple top tube), urine (1 red top tube), and vitreous (1 red top tube). Attempts to collect blood shall be made in the order they are listed below as the quality of blood and their value for toxicological testing depends on the source. Put blood in tubes with the following priority in mind: gray top, purple top, red top (saving 1 gray top for heart blood). All tubes shall be labelled appropriately with the source, Pathologist, and Path Tech. Blood tubes are packaged in a heat-seal bag, initialed and dated by the Path Tech.

- Blood
  - Femoral (Blf)- True femoral blood can be obtained only if the iliac artery is clamped to prevent the backflow of blood from the portal circulation into the femoral vessels. Identify the groove between the sartorius and adductor longus muscles. Stick into this groove aiming for the midpoint of the iliac crest.
  - Peripheral (Blp)
    - Femoral artery- Femoral blood is considered peripheral blood if the artery is not clamped.
    - Subclavian artery- Stick medially under the clavicle aiming for a point lying halfway to two-thirds on the clavicle.
  - Heart (Blh)
    - IVC- After the pericardial sac has been opened, locate the IVC by lifting the heart up.
    - Aorta- locate the aorta as it arises from the heart.
    - Pulmonary Artery (PA)- Locate either the right or left PA as they arise from the heart
    - Blood pooling in the pericardial sac is also considered heart blood

- Cavity (Blc)- Blood pooling above the diaphragm is best.

- Urine
  - Bladder- Estimate the total volume of urine in the bladder. Insert a syringe with an 18G needle into the bladder to collect.
  - Foley- Note the total volume of urine in the foley. Insert a syringe with an 18G needle into the foley to collect.
- Vitreous- Separate the eyelids. Insert a syringe with an 18G needle as posteriorly as possible. ***DO NOT DRAW VITREOUS IF THE DECEDENT IS A POSSIBLE OR CONFIRMED DONOR.***
  - Vitreous is not to be removed from infants until the Pathologist has determined no head trauma exists. If head trauma necessitates the enucleation of the infant's eyes, the vitreous may be collected after the eyes have been removed at the pathologist's discretion. Infant's eyes that have been enucleated will be instilled with formalin and placed in a histology specimen container.
- Blood will not be drawn from sites where artifacts may be produced that could potentially obscure pertinent autopsy findings (i.e. superior sagittal sinus in infants suspected of having head trauma).
- Additional samples may be collected per Pathologist request. Samples include, but are not limited to, Gastric, Liver, and Spleen. These are packaged in a 4oz sample cup, in a separate heat-seal bag from the blood tubes, initialed and dated by the Path Tech.

Once the specimens have been collected, it will be the responsibility of the Path Tech to ensure that the specimen containers are tightly closed to preclude the possibility of the loss of the specimen or specimen contamination. Once the containers have been properly closed, the outside of the container should be rinsed and dried to remove any biological specimen, which may have come in contact with it. At the conclusion of the autopsy, the Path Tech will place the samples in a heat-seal bag and in the refrigerator provided for storage of such samples. Care should be exercised to ensure that specimens are placed in the refrigerator with a label affixed to the outside of the plastic bag. These labels will indicate the coroner's case number, decedent's name, race, sex, and age. It will be the responsibility of the Path Tech packaging the biological specimens to date and initial atop the heat seal. Once the specimens have been properly sealed in a heat-seal bag and stored, it will be the responsibility of the Toxicology Department to collect the specimens from the Pathology Department in a timely manner.

Toxicology specimens taken during the examination are tracked in LIMS as outlined in the Evidence Collection and Handling Procedure.

A Toxicology Request Form needs to accompany all specimens submitted for toxicological testing or storage. It shall be the responsibility of the Path Tech to ensure the information has been entered into LIMS and the request form has been printed.

Biological specimens will be retained for a periods of twelve (12) months from the time the final toxicology report is submitted to the pathologist unless the Toxicology Supervisor has been notified in writing that the specimens need to be retained for a longer period. If such a letter is submitted, the Toxicology Department will retain the specimen until such time as the requestor notifies the Toxicology Supervisor that the specimens are no longer required.

Histology

Tissue samples are saved in formalin for Histology from all autopsies. The Pathologist is responsible for collecting samples to be saved in the Histology cups and samples to be saved in a stock bag. Rare exceptions may be made at the discretion of the attending Pathologist (i.e. religious objection to the unnecessary retention of tissue). The sections for histology are taken at the discretion of the Pathologist but in general should include at least the organ system likely to be involved in the cause of death. Histology cups shall be labeled with the initials of the Pathologist and whether slides are requested. If the brain is being held to examine after fixing in formalin, "brain saved" shall also be written on the cup. Histology samples collected during the examination are tracked in LIMS as outlined in the Evidence Collection and Handling Procedure.

The Histology Technician (HT) will prepare the requested slides according to established procedures and accepted practices. The cup is collected by the HT and the tissue is preserved in paraffin blocks. Paraffin blocks and microscopic slides for cases classified as a homicide or undetermined will be stored indefinitely. In all other cases, paraffin blocks will be stored for ten (10) years and microscopic slides for twenty-five (25) years. The stock bag is saved by the Pathology Department to be destroyed after 6 months. After 6 months, the stock bags are collected and sent for cremation.

It may be necessary to fix a Decedent's brain in formalin before dissecting it. Brains may be saved on Decedents received who meet the following criteria, but not limited to:

- Homicides with blunt force injuries of the head with brain injury
- Unexpected death with seizure disorder and no clear COD
- Baby deaths with no clear COD

- Any case the Pathologist feels Neuropathology is necessary

In these cases, the Path Tech will prepare a bucket with 10% formalin to completely submerge the brain. The Pathologist will assist in storing the brain in the bucket. The outside of the bucket will be labelled with the case label, the fixed date, and the ready date (2 weeks later). The formalin shall be changed out after 1 week. When the Pathologist is ready to cut the brain, they will let the Morgue Staff know so the brain can be rinsed. The bucket is placed in a free autopsy sink and ***COLD*** water is run gently into the bucket (a stream roughly the diameter of a No2 pencil). Once rinsed, cut, and sections are taken for Histology, the brain is stored in 20% formalin until the doctor gives permission to cremate.

A Pathologist may deem it necessary to remove the eyes of a Decedent for further examination. In these cases, the Path Tech will prepare two 4oz sample cups with 20% formalin. The Pathologist will remove the eyes and the Photographer will take photos of the eyes before placing them in the cups. The outside of the cups and lids will be labelled with a case label and "L eye" or "R eye". These cups will be placed in a small heat-seal bag with a case label affixed. The Pathologist will dissect the eyes when they are ready. Once cut, the Photographer will take photos showing any positive or negative findings and the eyes will be placed back in their respective containers until the doctor gives permission to cremate.

A "Request" entry will be entered into LIMS to track the progress of these specimens. This request will be updated when the specimens are processed. After the specimens are processed, slides will be sent to Histology as requested by the Pathologist. Remaining specimens will be packaged in formalin and labeled with a case label, as well as writing the case number on the bag. These bags will be stored in the Evidence closet. The Pathologists will periodically be asked if their specimens may be destroyed. The LIMS Request will be updated when the specimens are destroyed.

Whole Organ Retention

Pathologists will retain only those tissues required for potential diagnostic examination and/or testing purposes. In the event the duty pathologist determines a whole organ must be retained for further studies to establish final cause of death, that organ will be fixed in a formaldehyde solution until examination/testing is complete. NOK will not be customarily notified that an organ has been retained for additional study. At completion of the necessary testing, the organ will be disposed of in accordance with ORC 313.123.

Radiology

Use of radiology equipment is covered in full in the Radiology Procedure.

Compunet

Blood cultures and swabs may be requested through Compunet laboratories per Pathologist request. Collection methods vary based upon the type of sample collected and testing requested.

Types of Submissions

- Aerobic blood cultures
- Anaerobic blood cultures
- Pediatric blood cultures
- Bacterial swabs (green top on shelf)
- Viral swabs (red top in fridge)
- CSF for viral and/or bacterial cultures
  *The Pathologist will advise what type of culture they wish to submit.

Collection Methods

- COVID- viral swab of nasopharyngeal
- Meningitis- Heat a new scalpel blade and press against area of collection to sterilize. Cut into brain and swab with a bacterial swab.
- Meningitis in sick infants- Pathologist will collect CSF from the spine prior to autopsy with a sterile needle and syringe. Submit in a red top tube.
- Inner ear swabs- After opening the inner ear canal, use a bacterial or viral swab, as directed by the Pathologist, to swab the canal.
- Exposures- Collect a purple top tube and an extra red top tube if possible of heart or peripheral blood. If extra is not available, submit our tube. Spin down and separate serum as soon as possible.
- Blood cultures- Collect blood using a sterile needle and syringe. Fill blood culture vial with amount of blood listed on the side of the vial. Aerobic and anaerobic should both be collected and submitted for adults.
- Lung cultures- Heat a new scalpel blade and press against area of collection to sterilize. Cut into lung and swab with a swab of the Pathologist's choice.

All Compunet submissions are to be labelled with the case number, last name, date/time, and source. The sample is sealed in a small heat-seal bag then placed in a second, larger bag with the requisition form. Each sample will be packaged separately. Viral swabs are stored in the tox fridge and all other samples are stored in the Compunet lockbox.

Tests are ordered via the online portal.

- Create new patient
  - [Patients]→[New Patient]
  - All yellow boxes are required:
    - Billing Type: Account
    - Name: Case # Last Name
    - DOB
    - SEX
    - [Auto Assign ID]
    - [Save]
- Create new order
  - Fill in collection date
  - [Continue]
- Test order
  - Select test from the short list. If requested test is not a common test or there's a question of what is included, details can be found in [Compunet DOS]
  - Common tests:
    - COVID only — COVD19
    - Respiratory panel plus COVID — COMPRE & COVD19
    - Respiratory panel only — COMPRE
    - Exposures — SPP4
    - Viral swab (brain) — TSPCR
    - Viral swab (lung) — COMPRE
    - Blood culture — CULBLD
- Diagnosis Codes
  - We don't use diagnostic codes. Skip this step.
- Questions
  - Select [Unknown] for all questions.

Print requisition form & save as a PDF with the confirmation number on the Morgue drive.

Call Compunet (937-297-8262) for pickup:

- Account number D1581
- Stat pickup for exposures
- Routine pickup for all others

For test code questions: 937-297-2220

For supplies: 937-297-8260

Axis Tox Kits

Wayne County Coroner's Office (WCCO) sends their own toxicology kit to be completed and shipped. The Requisition Form Demographic information (shown in pink) is to be filled out by WCCO before sending the kit. MCCO is responsible for filling in the Pathologist and specimen information (shown in green). The MCCO Photographer is responsible for photographing the shipping label with the case number.

Included in the kit are 2 gray top tubes, 1 yellow top tube, and 1 plastic vial. These items are labeled with MCCO labels as normal, as well as a barcoded specimen label (located on the Requisition Form).

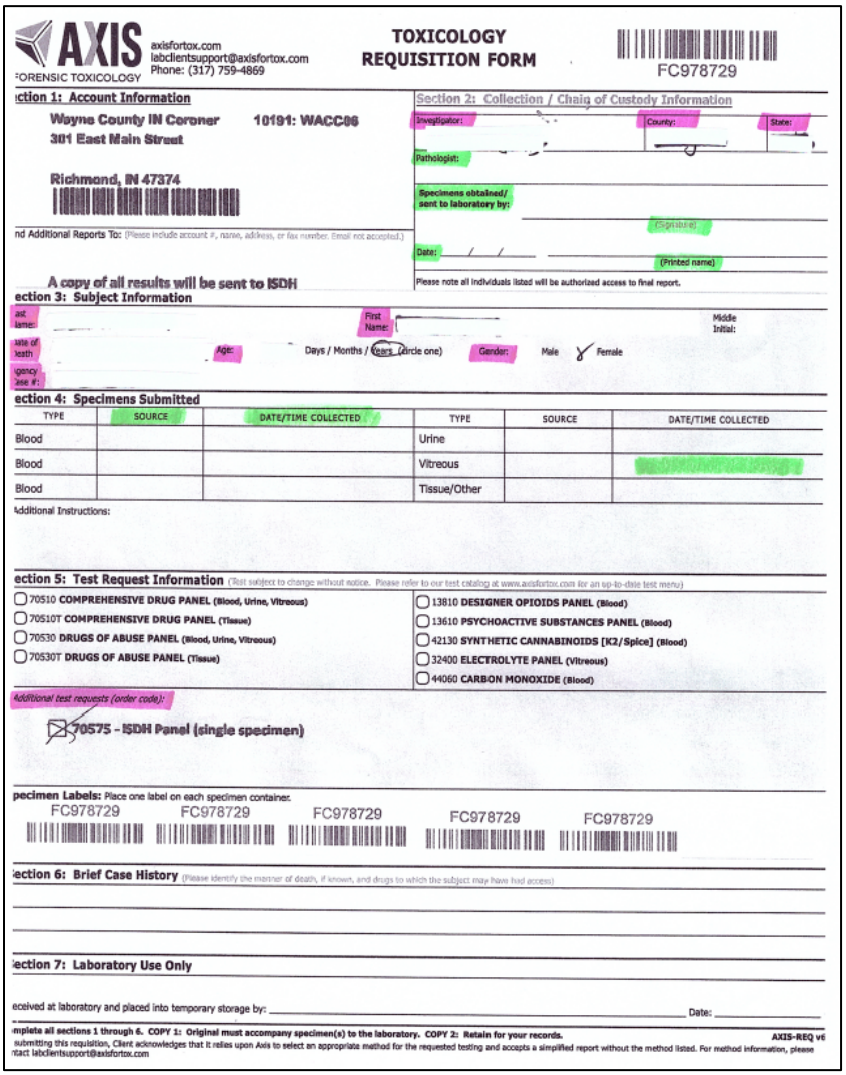
The yellow top tube is used for vitreous. The rest of the containers are used for blood (if possible, saving 1 gray top tube for heart blood).

After all the specimens are collected and the paperwork completed, the Axis tubes are sealed in the enclosed bag and placed in the box. The seal is initialed and placed over the opening of the box and the box is sealed in the enclosed shipping bag. The MCCO Toxicology Requisition Form is taped to the shipping bag before being placed in the tox fridge, to be sent out by the Toxicology Department.

Additional samples are retained by MCCO, ideally a gray top tube and a red top tube. These samples are labeled for MCCO as storage only, unless otherwise specified by the pathologist.

If an Axis kit is not received with the Decedent with the necessary information on the Requisition Form, toxicology will be collected for MCCO and submitted for testing as requested

by the pathologist. This information is to be included on the MCCO Toxicology Requisition Form printed from LIMS.



AXIS FORENSIC TOXICOLOGY
axisfortox.com
labclientsupport@axisfortox.com
Phone: (317) 759-4869

TOXICOLOGY REQUISITION FORM

FC978729

ction 1: Account Information

Wayne County IN Coroner 10191: WACC06
301 East Main Street
Richmond, IN 47374

nd Additional Reports To: (Please include account #, name, address, or fax number. Email not accepted.)

A copy of all results will be sent to ISDH

Section 2: Collection / Chain of Custody Information

Investigator: County: State:
Pathologist:
Specimens obtained/ sent to laboratory by:
(Signature)
Date: / /
(Printed name)
Please note all individuals listed will be authorized access to final report.

ection 3: Subject Information

ast lame: First Name: Middle Initial:
ate of leath Age: Days / Months / Years (circle one) Gender: Male ✓ Female
gency ase #:

ection 4: Specimens Submitted

TYPE	SOURCE	DATE/TIME COLLECTED	TYPE	SOURCE	DATE/TIME COLLECTED
Blood			Urine		
Blood			Vitreous		
Blood			Tissue/Other		

Additional Instructions:

ection 5: Test Request Information (Test subject to change without notice. Please refer to our test catalog at www.axisfortox.com for an up-to-date test menu)

- ☐ 70510 **COMPREHENSIVE DRUG PANEL** (Blood, Urine, Vitreous)
- ☐ 70510T **COMPREHENSIVE DRUG PANEL** (Tissue)
- ☐ 70530 **DRUGS OF ABUSE PANEL** (Blood, Urine, Vitreous)
- ☐ 70530T **DRUGS OF ABUSE PANEL** (Tissue)
- ☐ 13810 **DESIGNER OPIOIDS PANEL** (Blood)
- ☐ 13610 **PSYCHOACTIVE SUBSTANCES PANEL** (Blood)
- ☐ 42130 **SYNTHETIC CANNABINOIDS [K2/Spice]** (Blood)
- ☐ 32400 **ELECTROLYTE PANEL** (Vitreous)
- ☐ 44060 **CARBON MONOXIDE** (Blood)

Additional test requests (order code):
☒ 70575 - ISDH Panel (single specimen)

pecimen Labels: Place one label on each specimen container.
FC978729 FC978729 FC978729 FC978729 FC978729

ection 6: Brief Case History (Please identify the manner of death, if known, and drugs to which the subject may have had access)

ection 7: Laboratory Use Only

eceived at laboratory and placed into temporary storage by: _____ Date: _____

mplete all sections 1 through 6. COPY 1: Original must accompany specimen(s) to the laboratory. COPY 2: Retain for your records. AXIS-REQ v6
ubmitting this requisition, Client acknowledges that it relies upon Axis to select an appropriate method for the requested testing and accepts a simplified report without the method listed. For method information, please ntact labclientsupport@axisfortox.com

FAA Kits

On occasion, a Decedent involved in an aircraft crash will be transported to MCCO for examination. In these cases, the Federal Aviation Administration (FAA) collects additional data from the incident. Contracting counties are responsible for sending an FAA kit with the Decedent. Investigations will give a verbal reminder of this when the case is originally called in. Kits for Montgomery County cases will be kept by the Morgue. Replacements can be requested from the FAA.

TOXICOLOGY FOR MCCO TAKES PRECEDENCE OVER THAT FOR THE FAA.

During autopsy, Morgue Staff is responsible for collecting and submitting additional toxicology samples for the FAA.

Detailed instructions for the collection, packaging, and submission of FAA samples are included in each kit. In these cases, all types of samples may not be available, depending on the condition of the Decedent. The kit will be completed as much as possible with any empty containers being sent back with the kit.

Invitae Kits

In cases where the Pathologist believes a genetic factor may have played a role in a Decedent's death, blood samples may be sent for further testing to Invitae. During autopsy, an extra purple top tube of blood is collected for submission. The blood tube is labeled with the Decedent's first and last name, date of birth, and date of collection. It is packaged in the provided box and FedEx mailer. The package is then taken to the Front Office to be stored in the fridge until it is sent out. The confirmation code from the card provided in the box is entered into LIMS and the card is given to the ordering Pathologist.

In some instances, the Pathologist is unsure if the sample will be sent. In these cases, the blood tube will be labeled and packaged as if it is being submitted. A note will be placed on the outside of the box with the name, case number, date of collection and Pathologist and the box will be stored in the drawer of the Toxicology fridge in the Morgue. If after 6 weeks, the sample has not been submitted, the Pathologist will be

informed the sample is still available. If the Pathologist allows the sample to be destroyed, the blood tube will be placed in a sharps container, the rest of the packaging will be saved, and the sample will be marked destroyed in LIMS.

In order for the samples to be processed, Next of Kin (NOK) must give written permission and any known family history. For Montgomery County cases, the Investigator will contact NOK directly for this information. For Contract County cases, the Investigator will contact that county coroner's office to obtain this information. Once gathered, this consent form will be uploaded to the Invitae portal.

The Pathologist is responsible for periodically checking for a report on the Invitae portal.

Cardiac Consultation

The Pathologist may request the heart to be sent to a cardiac expert for additional study. These samples are sent via UPS or FedEx 2nd day shipping (overnight/express not required). Keep in mind that the office is closed on the weekends.

Jesse E. Edwards Registry of Cardiovascular Disease
333 North Smith Avenue
Room 4625
Saint Paul, MN 55102

Prepare the heart as follows:

- Rinse heart and remove as much postmortem clot as possible This may mean opening the atria and/or partially cutting off the ventricular apex. This is most important in infant specimens.
- Fix heart in formalin.
- Wrap heart in formalin-soaked paper towels to prevent drying out. Place in heat-sealed bag. Seal in a second bag.
- Place bag in shipping box with sufficient packaging material.
- Include a cover letter with the following information:
  - Doctor contact information
  - Summary of the history, pertinent autopsy findings and question for consultants OR preliminary autopsy report/investigators report.
  - ****Name, height, weight, sex and age of decedent**** (This is critical.)
  - Billing information including this email address: CCLbilling@mcohio.org

Jesse Edwards may be contacted with any questions at 651-241-5568.

Entomology

The Pathologist may request maggots to be sent to an entomologist for additional study. These samples are sent via Overnight mail to the following address:

Office of the Chief Medical Examiner
State of Maryland
Attn: Bill Rodriguez
900 West Baltimore Street
Baltimore, MD 21223

Include the following specimens:

- One specimen container (with 50% isopropyl alcohol and 50% water) containing maggots and flies
- One Styrofoam cup with lid taped down containing only maggots
  - Inside the Styrofoam cup, the maggots should be loosely contained within aluminum foil along with some meal (i.e.- beef liver)
  - Outside of the aluminum foil and inside of the Styrofoam cup, arrange tissues or paper towels as padding to protect the maggots

Bill Rodriguez may be contacted with any questions at 301-520-8973.