# APPENDIX A

## APPENDIX A. POLICIES AND PROCEDURES FOR DIOXIN BLOOD COLLECTION AND PROCESSING

This appendix contains the following Scripps Clinic Policies and Procedures documents:

1. Dioxin Blood Collection
2. Dioxin Blood Processing
3. Dioxin Mailouts.

# POLICIES AND PROCEDURES

Scripps Clinic
Department of Pathology
10666 N. Torrey Pines Road
La Jolla CA 92037

LABORATORY SECTION: **PHLEBOTOMY**
TITLE: **AFHS - DIOXIN BLOOD COLLECTION**
P.P. NUMBER: ISSUE DATE: 3/92 REVISION DATE:

## 1.0 PURPOSE

1.1 To collect blood sample for dioxin testing in accordance with Center for Disease Control standards.

## 2.0 SCOPE

2.1 Applies to designated Air Force Health Study participants.

## 3.0 MATERIALS

3.1 Blood - pack unit without anticoagulant - 600ml.
3.2 Alcohol swabs
3.3 PDI duo swabs
3.4 Sterile gauze
3.5 Adhesive tape
3.6 Gloves
3.7 Coban
3.8 Unit holders

## 4.0 PROCEDURE

4.1 On day 2, blood is drawn from designated participants with a 15 gauge needle into a blood pack unit without anticoagulant.
4.1.1 Blood pack units have been previously tested by the CDC for dioxin contamination.
4.2 Participants will have 280ml of blood drawn.
4.3 Select site for venipuncture.
4.3.1 On patients who have not yet had their physical exam, the dominant arm is preferred.

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4.4 Prepare site for venipuncture in the following manner:

4.4.1 Ask participant if they are allergic to iodine.

4.4.1.1 If allergic to iodine, use alcohol prep (70% isopropyl alcohol)

4.4.2 Wash hands.

4.4.3 Apply gloves.

4.4.4 Scrub venipuncture site with Povidine-Iodine Scrub$^{tm}$ moving outward in a concentric spiral for at least 30 seconds to clean away fat, oils, dirt, etc.

4.4.5 Remove scrub prep in a concentric spiral with sterile gauze and allow to dry.

4.4.6 Apply tincture of iodine (Povidine-Iodine Scrub$^{tm}$) in a circular fashion, starting at the proposed needle site, working outward. Allow to dry. (If allergic to iodine, use alcohol prep [70% isopropyl alcohol]).

4.4.7 If not ready to do venipuncture immediately, cover site with dry sterile gauze.

4.5 Perform venipuncture and securely tape needle and tubing to arm.

4.6 Blood is collected into unit bag.

4.6.1 Amount of blood is determined by weighing sample.

4.6.1.1 When using Terumo scale, set scale at "0", fill bag to 280 ml.

4.6.1.2 When using balance scale, set balance to 381gms.

4.6.1.3 When amount needed is reached, release tourniquet, and clamp tubing with hemostat.

4.7 Remove needle from vein.

4.8 Have patient apply pressure to site for several minutes.

4.9 Apply pressure bandage to site using gauze and coban.

4.9.1 Instruct patient not to remove bandage for at least 30-45 minutes.

4.10 Clamp tubing twice with hand sealer and clips.

4.10.1 Cut tubing above clips.

4.10.2 Dispose of needle in needle container.

4.11 Label unit bag with pre-printed label.

4.12 Place unit bag upright in vertical holder.

4.12.1 Vertical unit holders are numbered according to order drawn.

4.12.2 Units are placed in holders according to order of draw.

4.12.3 Units are to remain upright at room temperature and allowed to clot for at least 7 hours.

## 5.0 SHORT DRAWS

5.1 In the event of a short draw, unit pack is to be weighed and the amount of blood noted on the unit label. "Short draw" should also be written on label in large letters.

## 6.0 MULTIPLE VENIPUNCTURES

6.1 If unable to collect sample with one venipuncture, ask patient if he is willing to be drawn again. If patient is willing, start procedure from beginning.

6.2 If patient is unwilling to be redrawn, notify nurse coordinator and Air Force monitor.

6.2.1 Save labels and have test credited.

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# POLICIES AND PROCEDURES

Scripps Clinic
Department of Pathology
10666 N. Torrey Pines Road
La Jolla CA 92037

LABORATORY SECTION: **SPECIMEN PROCESSING**
TITLE: **AIR FORCE HEALTH STUDY - DIOXIN BLOOD PROCESSING**
P.P. NUMBER: ISSUE DATE: 2/92 REVISION DATE: 2/97

1.0 PURPOSE: To process blood samples for dioxin testing using Center for Disease Control Standards as a guideline.

2.0 SCOPE: Applies to Clinical Pathology Medical Technicians involved in processing dioxin samples.

3.0 MATERIALS

- 3.1 Transfer pack units - 300 ml
- 3.2 Plasma transfer set
- 3.3 Plasma extractor
- 3.4 Vertical unit holders
- 3.5 Vertical unit holder boxes
- 3.6 Teflon lined lids
- 3.7 Teflon stoppers
- 3.8 Aluminum sealing caps
- 3.9 Aluminum cap sealer
- 3.10 Centrifuge bags
- 3.11 Handsealer/stripper
- 3.12 Shipping List
- 3.13 Wheaton bottles
  - 3.13.1 5 ml, 10 ml, 120 ml
- 3.14 Styrofoam mailing boxes
- 3.15 Dry ice

4.0 PROCEDURE

- 4.1 On the specific day the blood is drawn for dioxins, the units will be brought from the blood drawing station to specimen processing and allowed to clot, upright in their unit holders, at room temperature for a total of 7 hours.
- 4.2 Shipping list

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4.2.1 The shipping list is a modified version of the list provided by the CDC.

4.2.2 Shipping list is prepared as follows: write participants name, ID number, Accession number, age, and check bottle sent.

4.2.3 Specify any deviations from collection, storage and shipment protocols, and date of occurrence.

4.3 Centrifuge of unit bags

4.3.1 Set temperature on floor model blood bank centrifuge between 4-10°C.

4.3.2 Unit bags are centrifuged in the order they are drawn.

4.3.3 The units of blood are placed inside plastic centrifuge bags.

4.3.3.1 The centrifuge bags are then balanced on the blood bank balance. No more than 3 units per centrifuge bag should be used.

4.3.3.2 If one centrifuge bag is heavier than the other, place small rubber stoppers into the centrifuge cups until units are balanced.

4.3.4 Centrifuge bags are placed into the centrifuge caps and spun for 15 minutes at 4500 RPMs.

4.3.5 Balance next group of unit bags for centrifuging.

4.4 Transfer of serum from unit bags to transfer packs.

4.4.1 Label transfer packs with patients aliquot label.

4.4.2 Labeled transfer packs are placed in vertical unit holders in the sequence they are to be transferred.

4.4.3 Serum is transferred from the spun unit bag to the transfer pack by plasmas extractor.

4.4.3.1 Place the unit bag on the plasma extractor with side not containing manufacturers label toward you.

4.4.3.2 Remove coupler cover of transfer pack unit.

4.4.3.3 Expose outlet port of blood pack unit.

4.4.3.4 Insert coupler into outlet port.

4.4.3.5 Release handle of plasma extractor and express the serum into the transfer pack. Do not allow red cells to enter the transfer pack. It is important to transfer the predominant amount of serum while preventing red cell contamination.

4.4.3.6 When the desired amount of serum is transferred, release the plasma extractor and clamp the tubing between the blood bag and the transfer pack using a hemostat clamp.

4.4.3.7 Seal the transfer tubing in 2 spots 1 inch apart using the Fenwal Hematron electronic sealer and severe tubing between seals

4.4.4 Transfer packs containing serum and any unit bags that need to be respun are placed in unsequential vertical unit holders and placed in vertical holder boxes.

4.4.5 Spinning of transfer packs

4.4.5.1 No more than 4 units (transfer packs) per centrifuge bag are to be balances at one time. In a 6 cup centrifuge this allows for 24 units of transferred serum to be spun at one time.

4.4.5.2 Transfer packs are to be spun at 4-10°C for 15 minutes at 4500 RPM in the floor model blood bank centrifuge.

4.5 Transfer of serum from transfer packs to Wheaton bottles

4.5.1 Wheaton bottles are labeled with patient aliquot labels

| | |
|---|---|
| 4 oz Wheaton bottle | S1 Serum dioxin |
| 5 ml Wheaton bottle | S3 Lipid profile |
| 10 ml Wheaton bottle | S4 Serum reserve |

4 oz Wheaton bottle S1 Serum dioxin
(glass jar with screw cap)
5 ml Wheaton bottle S3 Lipid profile
10 ml Wheaton bottle S4 Serum reserve
4 oz Wheaton bottle S2 Serum dioxin *Save the S2 label and do not put on bottle. This label will only be used if the amount of serum available warrants it.

4.5.1.1 Insert the sharp end into one of the outlet ports in top of the bag.

4.5.1.2 Close tubing with thumb roller on tubing.

4.5.1.3 Press bag with plasma extractor.

4.5.1.4 Hold open end of tubing over prelabeled Wheaton bottles.

4.5.1.5 Open tubing and put 5 ml serum in "S3" bottle, 10 ml in "S4" and completely fill "S1" 4 oz bottle. Do not use "S2" bottle unless you have left over serum.

4.5.1.6 Extract only the serum being careful that cells do not enter the bottle. Recap and tighten. Crimp on aluminum caps to S3 and S4.

4.5.1.7 Log in the serum samples and store at -70° C until shipment.

5.0 SHORT DRAWS

5.1 In the event of a short draw, the participant involved maybe drawn again thus having 2 smaller units. The units from these should be treated as all the others with regard to processing. Also, when aliquotting serum into the Wheaton bottles they may be pooled from both units.

6.0 MAILING OF SAMPLES

6.1 Frozen samples are mailed weekly to Brooks AFB,TX via Airborne overnight mail. See Mailouts Policy and Procedure.

# POLICIES AND PROCEDURES

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Department of Pathology
10666 N. Torrey Pines Road
La Jolla CA 92037

LABORATORY SECTION: **SPECIMEN CONTROL**
TITLE: **AFHS - DIOXIN MAILOUTS TO BROOK AFB**
P.P. NUMBER: ISSUE DATE: 4/20/92 REVISION DATE: 3/97

1.0 PURPOSE:

1.1 Procedure for mailing out Wheaton bottles with serum for dioxin testing to Brooks AFB.

2.0 SCOPE:

2.1 Applies to all medical technicians and technologists involved in the mailing of AFHS serum samples.

3.0 PROCEDURE

3.1 Serum drawn for dioxin testing will be mailed out once a week on each of the designated dioxin participant from the previous week.

3.2 Specimens will be packaged and mailed each Tuesday and will include all specimens drawn on the participants of the previous two groups.

3.3 Each participant will have three Wheaton bottles sent. (In some instances, there may be four Wheaton bottles on a participant.)

3.4 Shipment

3.4.1 The set of 3 aliquots will be removed from the -70°C freezer.

3.4.2 The aliquots will be placed in a 4" x 71/2" bubble pack bag. Each participant will have 2 bags. The 5 ml and 10 ml Wheaton bottles will be placed in one bubble pack per participant. The one 120 ml Wheaton bottle will be placed in a separate bubble pack bag. These aliquots will be placed in a bubble pack lined styrofoam shipping container. A third bag will be used if there are 4 Wheaton bottles on a participant.

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| Sharon Boolmer 3/6/97 MT(ASCP) | | |
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3.4.3 As each of the participants are packed for shipping, they will be logged on the shipping list. This list will include the participant's name, age, ID# and accession number. The shipping list will have a comment section for any unusual occurrences, i.e., short draw, etc. Make a copy of shipping list and give to Sharon Bodmer.

3.4.4 Once all specimens are packed, add a sufficient amount of dry ice (approximately 15 lbs) above the specimens to keep them frozen for overnite shipment. Buffer package with additional bubble pack as needed.

3.4.5 Place the shipping list in a zip lock baggy and place inside the shipping box. Close the box and seal it with strapping tape.

3.4.4.1 Aside from sending the shipping list with the specimens, Fax a copy to Brooks AFB, attention Vince Elequin at (210) 536-3567.

3.4.6 Specimens will be mailed via FED EX overnight mail.

3.4.5.1 Fill out the overnite mail slip as follows:

AL/AOEP
2606 Doolittle Road
Building 808
Brooks AFB, TX 78235-5250
ATTN: Vince Elequin

This will be billed to acct. #20-227-7530

In comment section of the mailing slip, write in "Diagnostic Specimens" and indicate on "Dry Ice".

3.4.7 Once the shipping box is securely taped and mailing slip filled out, transport to shipping department before 1430 for shipping.

3.5 Procedural note

3.5.1 Specimen processing will be given a list of participants that require dioxin draws. If these participants are not drawn for any reason, i.e. Hemoglobin <12.5 mg/dl, they should be placed on the shipping list with their appropriate group and the reason for a non-draw placed in the comment section. The reason for a non-draw will be communicated from the AFHS nurse coordinator to the Laboratory Services Coordinator to the laboratory staff.

CONTACT PERSON: Sharon Bodmer
PHONE NUMBER: (619) 554-9552

GROUP # _____
PREPARED BY: _____
DATE SHIPPED: _____
TOTAL: _____

# AFHS DIOXIN SHIPPING LIST
# BOTTLES

| PARTICIPANT'S NAME | CASE ID NUMBER | ACCESSION NUMBER | AGE | S1 | S2 | S3 | S4 | COMMENTS |
|---|---|---|---|---|---|---|---|---|
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