

**POLICY NUMBER: A-002**  
**APPROVAL DATE: 11/23/2010**  
**EFFECTIVE DATE: 1/27/2011**

**TITLE: ANIMAL EXPOSURE PREVENTIVE MEDICINE PROGRAM (AEPMP) for PERSONNEL with ANIMAL CONTACT**

**1.0 PURPOSE**

The purpose of the Animal Exposure Preventive Medicine Program (AEPMP) is to provide:

- occupational health and safety information related to use and care of animals;
- occupational health and safety information and monitoring related to exposure to waste anesthetic gases (WAGs), when indicated;
- occupationally indicated immunizations; and
- clinical evaluation and treatment for individuals with animal related injuries or illnesses

**2.0 REVISION HISTORY**

Date	Revision #	Change	Reference Section(s)
October 20, 2010	2.1	Updated Policy re: applicability and need for waiver; Occupational Health procedures also updated/revised.	Sections 3.0; 4.0 5.0 and 6.0
May 21, 2009	2.0	Updated Policy	Formatting Standardized throughout document; No substantive changes to text

**3.0 SCOPE**

This policy applies to all VAPHS and Veterans Research Foundation employees (including those with WOC appointments) who are conducting VA research, are working in VA or VA leased space, and who meet either of the following criteria:

- A) handle animals (live or dead), their fresh, frozen, or non-fixed tissues, body fluids, or waste;
- B) are exposed to Waste Anesthetic Gases (WAGs) as a function of their work/contact with animals

**4.0 RESPONSIBILITIES**

- A. Principal Investigators: Principal Investigators are responsible for ensuring that all research personnel working with animals, their fresh, frozen, or non-fixed tissues, body fluids, or waste are listed both on the Staff Form (#15 in Part I: Request to Review Protocol) and in the Animal Component of Research Protocol (ACORP), Section E. Additionally, Principal Investigators are responsible for ensuring that all research staff working with anesthetic gases are properly listed in the ACORP. Principal Investigators assume ultimate responsibility for ensure that all research personnel working on their protocol(s) are compliant with the AEPMP policy.
- B. Research & Development Office: The Research & Development (R&D Office) is responsible for maintaining records related to those who must be enrolled in the AEPMP. These records must be updated as protocols are approved by the Institutional Animal Care and Use Committee (IACUC).
- C. Occupational Health: Occupational Health is responsible for conducting the initial and annual evaluations of staff enrolled in the AEPMP and for forwarding information related to the dates of those evaluations to the Research and Development Office.

**5.0 POLICY**

The AEPMP is a medical surveillance program primarily designed to address the needs of research staff working with Small Animals (i.e., rodents and rabbits). The program, does however, include services aimed to address

the needs of individuals exposed to other categories of animals should research at VAPHS expand to include work with large animals, nonhuman primates, or nonhuman primate tissues. Individuals who handle animals (live or dead), their fresh, frozen, or non-fixed tissues, body fluids or wastes within VAPHS facilities or VAPHS-owned property must participate in the AEPMP at VAPHS. Individuals who are conducting the same procedures within VA leased space or who have a partial or full off-site waiver to conduct VA research at an off-site location have the option of either enrolling in the VAPHS AEPMP or enrolling in the program at that institution, provided that the alternate program meets PHS requirements.

## 6.0 PROCEDURE

All individuals to which this policy applies (as outlined in Section 3.0 above) must provide written proof to the VAPHS Institutional Animal Care and Use Committee (IACUC) that they have either enrolled in the VAPHS Preventive Medicine Program or enrolled in a similar program that meets PHS requirements prior to being permitted to enter the animal research facility and/or begin work with animals. Those individuals working with anesthetic gases on VA property are required to participate in the WAG's services offered by the AEPMP (see Section 6.C).

VAPHS Investigators are required to list all individuals working with animals, their fresh, frozen, or non-fixed tissues, body fluids, or waste on both the Staff Form (#15 in Part I: Request to Review Protocol) and in the Animal Component of Research Protocol (ACORP), Section E. Prior to IACUC review and approval, the VAPHS IACUC coordinator will verify that all individuals identified via the Staff Form or ACORP are enrolled in the appropriate preventive medicine program. Those identified as needing to participate in the WAG preventative program will also be verified. Those who have not provided proof will be notified by the IACUC coordinator that they must present for clinical evaluation at Occupational Health. If they do not present for their initial assessment within 10 business days of the initial notification, a second notification is sent to the individual as well as his or her supervisor, or the PI on the relevant project, noting the date that the evaluation must be performed by. If the evaluation is not completed by this date, the name of the individual is transmitted to the IACUC to be considered for suspension of authorization to utilize laboratory animals and/or their viable tissues and body fluids. R&D will maintain a system to insure annual evaluations are completed for those enrolled in the AEPMP. The date of the completion of annual review will be forwarded to the R&D office from Occupational Health.

### A. Services Offered to AEPMP Participants and Those Working with Small Animals

1. Pre-employment medical evaluation: In order to ensure that a prospective new employee is capable of the physical demands of the position and that pre-existing medical conditions do not place the employee or others at risk a pre-employment medical evaluation must be performed. The evaluation includes:
  - (a) An initial physical exam which shall include an EKG, complete blood profile, serum chemistries, urinalysis.
  - (b) A medical evaluation that includes:
    - i. An occupational medical history. The occupational medical history includes a review of:
      - the functional demands and environmental factors associated with the proposed position;
      - the type of animal(s) contacted;
      - other potential work-site health hazards, including exposure to anesthetic gases.
      - the individual's medical history and an evaluation of capability for the demands of the position.
    - ii. Safety and health counseling, which includes counseling regarding:
      - the bloodborne pathogen exposure control program,
      - medical evaluation and treatment for occupational injuries and illnesses, including allergies
      - relevant zoonoses based upon the animals used at the work site,
      - pertinent safety and health risks and other infection control guidelines,
      - the reporting of any gastrointestinal, respiratory, or dermal illness with signs or symptoms which resemble those occurring in animals for which they care.
    - iii. Appropriate immunizations (Rabies, Hepatitis B, etc.)

2. The participant is offered a booster dose of tetanus/diphtheria (Td) toxoid, if clinically indicated.
3. During the AEPMP enrollment, the VAPHS screens employees at risk for developing work related allergies by requesting a history of pre-existing allergies, asthma, seasonal rhinitis, or eczema. Enrollees are advised of the availability of clinical care and are encouraged to seek evaluation and treatment if they develop symptoms suggestive of a work related allergy.

**B. Additional Services Offered to those Exposed to WAGs**

Those participants who will be exposed to anesthetic gases will be counseled as to potential signs or symptoms of over exposure (which may affect the hepatic, renal, hematopoietic systems, and may cause spontaneous abortion and congenital abnormalities). Reproductive history will be noted during the initial visit. Analysis of their blood sample will include CBC w/differential, liver profile, and a renal profile.

**C. Outline of Services for Other Categories of Animal Exposure**

1. Large Animal Contact: In addition to those listed in Section B, a participant with large animal contact would receive the following services, as indicated: a. Medical counseling; b. Tetanus immunization; c. Rabies immunization, if applicable and desired; d. Serologic testing for toxoplasmosis, if applicable; e. Assessment and counseling for Q Fever, if applicable.
2. Live Nonhuman Primate Contact: In addition to those listed in Section B, a participant with live nonhuman primate contact would receive the following services, as indicated: a. Medical counseling; b. Tetanus immunization; c. Tuberculosis screening; d. Rubeola immunization/protection; e. Rabies immunization, if applicable; f. Viral hepatitis screening, if applicable.
3. Non-fixed tissues from nonhuman primates would receive the following services, as indicated: a. Medical counseling; b. Bloodborne Pathogen Program; c. Tuberculosis screening, if applicable.

**D. Ongoing Preventive Medicine Program**

1. All participants in the AEPMP are required to return to Occupational Health for an Annual Review of their Health Information. Particular attention is to be paid to immunizations needed for the prevention and development of allergies that could place the employee in jeopardy while in the presence or in contact with animals.
2. Participants working with anesthetic gases will be required to return to Employee Health for a complete physical exam if environmental monitoring indicates that employee has been exposed to WAGs at a level exceeding NIOSH acceptable limits or in the case of an accidental release. Such individuals will be restricted from working in the VAPHS Animal Research Facility until the Research Office receives notification from Employee Health that it is safe for the individual to return.
3. Medical examinations and counseling will be provided to those employees that:
  - a. Develop signs or symptoms indicating possible overexposure to WAGs
  - b. Desire medical advice concerning the effects of past exposure to WAGs, or
  - c. Desire medical advice regarding the employee's ability to produce a healthy child.
  - d. Participants are encouraged to contact Occupational Health before Annual Review if there is any substantial change in either their work assignment or their Health Status.
4. Those who have not scheduled an annual exam will be notified by the IACUC coordinator that they must present for clinical evaluation at Occupational Health. If they do not present for their annual assessment within 10 business days of the initial notification, a second notification is sent to the individual as well as his or her supervisor, or the PI on the relevant project, noting the date that the evaluation must be performed by. If the evaluation is not completed by this date, the name of the individual is transmitted to the IACUC to be considered for suspension of authorization to utilize laboratory animals and/or their viable tissues and body fluids. R&D will maintain a system to insure annual evaluations are completed for those enrolled in the AEPMP. The date of the completion of annual review will be forwarded to the R&D office from Occupational Health. Please note: Similar to

initial approval, IACUC protocols will not be approved until all personnel listed on the protocol have attended their annual review.

E. Record Keeping

At the completion of the assessment (Initial and annual), health information is maintained in an individual Employee Health Folder. This information is maintained by the Occupational Health Nurse and only the dates of completion of the initial and annual assessments are reported to the R&D office which incorporates this information in the AEPMP database.

**7.0 References**

- VHA Handbook 1200.7, Use of Animals in Research
- Guide for the Care and Use of Laboratory Animals. National Research Council
- University of Pittsburgh Animal Exposure Surveillance Program.
- VAPHS Waste Anesthetic Gases and Vapors Exposure Control Policy #A-001

**8.0 Appendices**

- Appendix 1: INITIAL HEALTH QUESTIONNAIRE Preventive Medicine Program for Personnel with Animal Exposure
- Appendix 2: ANNUAL HEALTH QUESTIONNAIRE Preventive Medicine Program for Personnel with Animal Exposure

*//signed//*

Gretchen L. Haas, PhD  
Research and Development Committee Chair

*//signed//*

Ali F. Sonel, MD  
Associate Chief of Staff for Research and Development

Occupational Health  
VAPHS, University Dr  
Pittsburgh, PA 15240

Appointment date \_\_\_\_\_ Time \_\_\_\_\_

**INITIAL EXAM FORM**

**VAPHS: Preventive Medicine Program for Personnel with Animal Exposure**  
**HEALTH QUESTIONNAIRE**

*(Complete and bring to your appointment with Occupational Health).*

*VAPHS wants to reassure all individuals who have enrolled or are scheduled to enroll in this program, that your medical information will be handled with the strictest confidence and in compliance with the HEALTH INSURANCE PORTABILITY and ACCOUNTABILITY ACT of 1996 (HIPAA). Your personal and Medical information will only be available to those clinical care providers in Employee Health with a need to know.*

**Please Print or Type**

Name: \_\_\_\_\_

Social Security #: \_\_\_\_\_

Department: \_\_\_\_\_

VA Mailing Address: \_\_\_\_\_

Telephone Number \_\_\_\_\_

Female  Male

Date of Birth: \_\_\_\_/\_\_\_\_/\_\_\_\_

Job/Position: \_\_\_\_\_

Job Duties: \_\_\_\_\_

PI/Supervisor Name & Ext: \_\_\_\_\_

IACUC Protocol # \_\_\_\_\_

**I.** \_\_\_\_\_ *(if applicable)*

**Must be completed by Employee and SUPERVISOR or PRINCIPAL INVESTIGATOR**

1. Species contact within VA Pittsburgh Healthcare System (check all that apply):

- Dog**     **Cat**
- Nonhuman primate** (Baboon, Monkey, etc.), please specify \_\_\_\_\_
- Sheep, Goats, Pig, Calves**, please specify \_\_\_\_\_
- Rodents** (Mice, Rats, Hamster, Gerbil, Guinea Pig, etc.), please specify \_\_\_\_\_
- Rabbit**
- Other**, please list: \_\_\_\_\_

2. Total number hours of animal exposure/contact per week at work: \_\_\_\_\_

3. For use with **live animals** only, any work with:

- A) **Recombinant DNA**             Yes     No
- B) **Infectious Agents**         Yes     No    please list: \_\_\_\_\_
- C) **Bloodborne Pathogens**     Yes     No
- D) **Human Cell lines**             Yes     No
- E) **Very Hazardous Agents**     Yes     No    please list: \_\_\_\_\_
- F) **Radiation**                     Yes     No    please list: \_\_\_\_\_
- G) **Lasers** (Class 3b, 4a)         Yes     No    please list: \_\_\_\_\_
- H) **Toxins**                         Yes     No    please list: \_\_\_\_\_
- I) **Exposure to anesthetic gases**  Yes     No    *please list:* \_\_\_\_\_

\_\_\_\_\_  
Name and Signature of Supervisor or Principal Investigator

\_\_\_\_\_  
Date

## II.

GENERAL OCCUPATIONAL HISTORY	YES	NO	LATEX HISTORY	YES	NO
<b>A. Have you ever used protective clothing or Equipment?</b>			<b>A. Have you ever had an anaphylactic (severe, life threatening) reaction to latex devices or products?</b>		
Respirators (if yes, give type: _____ )			<b>B. Have you ever been told by a Doctor that you have an allergy to any latex product?, If yes, specify: _____</b>		
Hearing Protection			<b>C. Were you born with any birth defects or limiting conditions which may predispose to latex sensitivity (spina bifida, Myeloma, myelodysplasia)</b>		
Protective suit/isolation gown			<b>D. After handling latex products have you ever experienced any of the following:</b>		
Barrier Gloves			Difficulty breathing		
Eye Protection			Chapping or 'cracking' of hands		
<b>B. At work, have you ever been exposed to, or worked with any of the following types of chemicals:</b>			Runny nose/congestion		
Chemotherapeutics			Itchiness (hands/eyes)		
Bloodborne Pathogens			Redness		
Asbestos			Swelling		
Lasers			Hives		
Radiation/Radiology Exposure			Other		
Mercury/Lead/Cadmium (i.e. heavy metals)			<b>E. Have you had an allergic reaction to any of the following:</b>		
Other Materials? _____			Avocados/bananas/chestnuts/kiwis/papaya/peaches/potatoes		
<b>INFECTIOUS DISEASE: Tuberculosis:</b>			Baby bottles/nipples/balloons/erasers		
Have you, or anyone in your family ever had Tuberculosis/TB?			Elastic waistbands/elastic bandages		
Have you ever had a TB skin test? (Date of most recent: _____ )			Face masks/foam pillows		
Have you ever had a reaction to the TB Skin test?			Hot water bottles/ostomy bags/ condoms		
IF yes, were you treated with INH?			Rubber bands/rubber gloves/rubber grips		
Date of last chest X-ray: _____ o			Other _____		

Do you work with, or have you been immunized against any of the following:	Work With	Immunized	Date(s) of Immunization	Do you work with or are exposed to Anesthetic gases?	YES	NO	
Botulinum				If yes, is there any prior history of any of these medical problems:			
Vaccinia					Reproductive problems or disorders for you or your spouse?		
Q Fever				Liver Disorders			
Rabies virus						Kidney Disorders	
Measles Virus				Hematological/blood disorders			
Human Retroviruses							
Meningococcus							
Tetanus Diphtheria (Td)							
Other: _____							

Do you have, or have you ever had:	Yes	No	COMMENTS (if YES)
Allergic rhinitis/conjunctivitis/hayfever			
Anaphylaxis			
Asthma			
Chronic cough			
Eczema/urticaria/hives			
Family history of allergic disease (explain if yes) _____			
Prior history of allergic symptoms with animal exposure			
Itching, tearing or swelling of eyes			
Nasal discharge			
Coughing			
Chest tightness or wheezing			
Skin rash or itching			

*(Employees with suspected work related allergies should seek evaluation and treatment from their physician.)*

Skin Diseases			
Diabetes			
Seizure disorder			
Back Pain			
Color blindness			
Other: _____			

**III.**

A. Have you ever contracted an occupational illness, or had a serious injury from an animal or in animal-related work? Yes No If yes, please explain in detail. \_\_\_\_\_

B. Have you had a splenectomy? Yes No  
Are you on any immunosuppressant drugs? Yes No

C. Please note any other current health problems/history you consider significant: \_\_\_\_\_

D. Are you being treated by a physician for a health problem? Yes No (If yes, list):\_\_\_\_\_

E. Are you currently taking any medications (Over the Counter or Prescribed)? Yes No (If yes, list):\_\_\_\_\_

F. Do you have any allergies to medication? Yes No (If yes, list):\_\_\_\_\_

G.. Do you have any work restrictions or physical limitations? Yes No (If yes, list):\_\_\_\_\_

H. Do you require any work accommodations for the position for which you are applying or presently performing? Yes No (If yes, list):\_\_\_\_\_

I. List all hospitalizations and surgeries with Approximate dates:

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

**I certify I understand all requests for information on this form and that the information I supplied is correct.**

\_\_\_\_\_  
EMPLOYEE SIGNATURE and DATE

\*\*\*\*\*

**IV. For VAPHS Occupational Health Service Use Only:**

I have reviewed the information provided (Medical Practitioner Signature & Date): \_\_\_\_\_  
DATE (or NA) DATE

Tuberculin Skin Test \_\_\_\_\_ NEG POS \_\_\_\_\_ mm

Tetanus-diphtheria Vaccine \_\_\_\_\_ RABIES 1: \_\_\_\_\_  
RABIES 2: \_\_\_\_\_  
RABIES 3: \_\_\_\_\_

Bloodborne Pathogen surveillance  
HBV vaccine 1: \_\_\_\_\_ POLIO vaccine \_\_\_\_\_  
HBV vaccine 2: \_\_\_\_\_  
HBV vaccine 3: \_\_\_\_\_ VZV vaccine \_\_\_\_\_  
(Varicella)

TOXOPLASMOISIS \_\_\_\_\_

No Yes Exposure to anesthetic gases.

If Yes, does review of reproductive history reveal any suspicion of work-related problems?) \_\_\_\_\_

If yes, Medical Surveillance will be initiated for exposure to anesthetic gases (which includes baseline CBC, liver profile, renal profile, and medical and reproductive history updates; if NIOSH limits are exceeded in the Animal Research facility, blood workup will be repeated).

RECOMMENDATIONS/ NOTES/ Comments from Physical exam results:

Occupational Health  
VAPHS, University Dr  
Pittsburgh, PA 15240

Appointment date \_\_\_\_\_ Time \_\_\_\_\_

**ANNUAL REVIEW FORM**

(Complete and bring to your appointment with Occupational Health)

**VAPHS: Preventive Medicine Program for Personnel with Animal Exposure**  
**HEALTH QUESTIONNAIRE**

VAPHS wants to reassure all individuals who have enrolled or are scheduled to enroll in this program, that your medical information will be handled with the strictest confidence and in compliance with the HEALTH INSURANCE PORTABILITY and ACCOUNTABILITY ACT of 1996 (HIPAA). Your personal and Medical information will only be available to those clinical care providers in Employee Health with a need to know.

**Please Print or Type :**

Name: \_\_\_\_\_ Social Security #: \_\_\_\_\_

Department: \_\_\_\_\_ VA Mailing Address: \_\_\_\_\_

Telephone Number \_\_\_\_\_ Date of Birth: \_\_\_\_/\_\_\_\_/\_\_\_\_ Male  Female   
If female, Pregnant:  Yes  No

Job/Position: \_\_\_\_\_ IACUC Protocol # \_\_\_\_\_ or  NA

**1. Species contact within VA Pittsburgh Healthcare System (check all that apply):**

**Dog**  **Cat**

**Nonhuman primate** (Baboon, Monkey, etc.), please specify \_\_\_\_\_

If working with primates, have you ever been diagnosed with Tuberculosis?  Yes  No

If Yes:

Medication taken \_\_\_\_\_ Duration of Therapy \_\_\_\_\_ Dates of diagnosis and therapy \_\_\_\_\_

BCG vaccination  Yes  No If Yes, give date: \_\_\_\_\_

Positive TB tests (Tine, PPD, Mantoux)  Yes  No If yes, provide history \_\_\_\_\_

**Sheep, Goats, Pigs, Calves**, please specify \_\_\_\_\_

**Rodents** (Mice, Rats, Hamster, Gerbil, Guinea Pig, etc.), please specify \_\_\_\_\_

**Rabbit**

**Other**, please list: \_\_\_\_\_

**2. Total number hours of animal contact per week at work (including animal tissues, waste, body fluids, carcasses, or animal housing areas) :** \_\_\_\_\_

**3. Work involves Human pathogens:**  Yes  No

If yes, specify: \_\_\_\_\_

**4. Work involves Animal pathogens:**  Yes  No

If yes, specify: \_\_\_\_\_

**5. Are you receiving immunosuppressive therapy that could increase risk of zoonotic disease?**  Yes  No

**6. As part of assigned duties, how often do you wear:** Never Rarely Sometimes Always

Disposable gloves,

If use gloves, any evidence of latex sensitivity  No  Yes

Gown

Mask,

Cap

Protective eye wear

7. How often do you do the following after handling animals during the day:

	Never	Rarely	Sometimes	Always
Wash hands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change clothing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shower	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8.

Do you have, or have you ever had:	Yes	No	(if YES) COMMENTS
Allergic rhinitis/conjunctivitis/hayfever			
Anaphylaxis			
Asthma			
Chronic cough			
Eczema/urticaria/hives			
Family history of allergic disease (explain if yes)			

9.

Prior history of allergic symptoms with animal exposure	Yes	No	If Yes, <u>Species</u> <u>Frequency</u> (never, monthly, weekly, daily)
Itching, tearing or swelling of eyes			
Nasal discharge			
Coughing			
Chest tightness or wheezing			
Skin rash or itching			
Sneezing spells			
Difficulty swallowing			

*(Employees with suspected work related allergies should seek evaluation and treatment from their physician.)*

10. Do you have any house pets that could be responsible for allergic symptoms, or could represent a disease transmission hazard to you or the animals in the Animal Research Facility? No Yes. If yes, list:\_\_\_\_\_

11.

Have you ever suffered from:	Yes	No	Describe Severity & and Corrective Measures
Inguinal or similar hernia			_____
Back Pain			_____
Joint problems, arthritis			_____
<b>Other chronic health problems:</b>			
_____			_____
_____			_____
_____			_____

12. Do you work with Chemicals? No Yes. If Yes, describe any symptoms that could be associated with such exposure: \_\_\_\_\_

13. Do you have any significant health history that might suggest exposure to workplace hazards?  
No Yes. If Yes, describe \_\_\_\_\_

14. Are you exposed to waste anesthetic gases during your work?  
No Yes. If Yes, Describe \_\_\_\_\_

If YES, has there been any evidence of Reproductive, Liver, Kidney, or Blood disorders during the past year? No Yes. If Yes, Describe: \_\_\_\_\_

**I certify I understand all requests for information on this form and that the information I supplied is correct.**

EMPLOYEE SIGNATURE and DATE

\*\*\*\*\*

**For VAPHS Occupational Health Service Use Only:**

I have reviewed the information provided (Medical Practitioner Signature & Date): \_\_\_\_\_

Immunization/testing history:

	<u>DATE</u> (or NA)		<u>DATE</u>
Tuberculin Skin Test	_____	<input type="checkbox"/> NEG <input type="checkbox"/> POS	_____ mm
Tetanus-diphtheria Vaccine	_____	RABIES 1:	_____
		RABIES 2:	_____
		RABIES 3:	_____
Bloodborne Pathogen surveillance		POLIO vaccine	_____
HBV vaccine 1:	_____	VZV vaccine	_____
HBV vaccine 2:	_____	(Varicella)	
HBV vaccine 3:	_____		
TOXOPLASMOSIS	_____		
<input type="checkbox"/> No <input type="checkbox"/> Yes	Exposure to anesthetic gases.		

If Yes, does review of reproductive history reveal any suspicion of work-related problems?) \_\_\_\_\_

If Yes, Medical Surveillance will be initiated for exposure to anesthetic gases (which includes baseline CBC, liver profile, renal profile, and medical and reproductive history updates; if NIOSH limits are exceeded in the Animal Research facility, blood workup will be repeated).

NOTES/ RECOMMENDATIONS: