

HEADQUARTERS
UNITED STATES FORCES KOREA
UNIT #15237
APO AP 96205-5237

United States Forces Korea
Regulation 40-1

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Medical Services

PREVENTION, SURVEILLANCE AND TREATMENT OF HEMORRHAGIC FEVER
WITH RENAL SYNDROME (HFRS)

***This regulation supersedes USFK Regulation 40-1, 28 August 2000.**

FOR THE COMMANDING GENERAL:

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Summary. This regulation prescribes measure for the surveillance of rodent-borne hantaviruses, prevention, and treatment of Hemorrhagic Fever (HF) in the Republic of Korea (ROK).

Summary of Change. This document has been substantially changed. A full review of its contents is required.

Applicability. This regulation applies to all subordinate commands and tenant units assigned to United States Forces, Korea (USFK) and to all units and individuals deploying to the ROK for training exercises.

Supplementation. Issue of further supplements to this regulation by subordinate commands is prohibited unless prior approval is obtained from HQ USFK, (FKMD-PM), Unit #15237, APO AP 96205-5237.

Forms. USFK forms are available at <http://www.usfk.mil/usfk/>.

Records Management. Records created as a result of processes prescribed by this regulation must be identified, maintained, and disposed of according to AR 25-400-2. Record titles and descriptions are available on the Army Records Information System (ARIMS) website at <https://www.arims.army.mil/>.

Suggested Improvements. The proponent of this regulation is HQ USFK, (FKMD-PM). Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to the HQ USFK, (FKMD-PM), Unit 15237, APO AP 96205-5237.

Distribution. Electronic Media Only (EMO).

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Chapter 1 General

1-1. Purpose

This regulation prescribes measures for the surveillance of rodent-borne hantaviruses, prevention, and treatment of HF in the Republic of Korea.

1-2. References

Required and related publications are listed in Appendix A.

1-3. Explanation of Abbreviations And Terms

Abbreviations and terms used in this regulation are explained in the glossary.

Chapter 2 Responsibilities and Procedures

2-1. Responsibilities

a. Commanders at all echelons will ensure maximum use of United States (U.S.) Army Field Sanitation Teams (FSTs); U.S. Navy Preventive Medicine Technicians; and the U.S. Air Force Public Health personnel to supplement U.S. Army Directorate of Public Works; U.S. Naval Fleet Activities Public Works; and U.S. Air Force Civil Engineering Squadron, Entomology Section in implementing preventive measures.

b. USFK Surgeon will:

(1) Ensure health care providers are knowledgeable of signs, symptoms, laboratory diagnosis, and treatment of HF.

(2) Ensure health care providers are knowledgeable of and comply with medical procedures outlined in Appendix B.

(3) Coordinate laboratory support for HF titers and other appropriate diagnostic tests.

(4) Ensure FST training is provided in accordance with (IAW) AR 40-5 and FM 21-10.

(5) Ensure epidemiologic and entomologic support or consultation is provided upon request.

(6) Coordinate surveys of training sites to determine prevalence of HF among rodents when indicated through case detection and epidemiological surveys.

(7) Maintain epidemiological data on USFK and Korean cases of HF, include rodent surveillance data, as available.

(8) Inform the Assistant Chief of Staff, J3, of training areas identified as foci for HF infection.

(9) Provide consultative advice on the prevention of HF, to include recommendations on appropriate protective equipment, rodent-borne disease surveillance and control, and medical surveillance and interventions.

c. Each service component will provide a responsible activity to oversee rodent control support on fixed installations.

(1) Korean Regional Office of the Installation Management Agency (KORO-IMA) shall be responsible for rodent control on U.S. Army Installations.

(2) U.S. Air Force Civil Engineering Squadrons shall be responsible for rodent control on U.S. Air Force installations.

(3) U.S. Navy Public Works shall be responsible for rodent control on U.S. Navy and U.S.M.C. installations.

d. Responsible activities will:

(1) Provide rodent control support on fixed installations IAW DODI 4150.7, AR 200-5, OPNAVINST 6250.4A, and AFI 32-1053.

(2) Ensure that rodents are disposed of properly and personnel disposing of rodents use appropriate protective measures.

(3) Establish liaison with area civilian and military rodent control operations to ensure maximum effectiveness, avoid duplication of control efforts, and ensure rodent control procedures are IAW AR 200-5, AFI 32-1053, OPNAVINST 6250.4A, and DODI 4150.7.

(4) Specify procedures for solid waste storage and disposal that will preclude harborage for rodents.

(5) Submit a monthly report of rodents captured to USFK Surgeon, (FKMD-PM) (Annex D).

2-2. Procedures

a. Medical procedures will follow Appendix B.

b. Avoidance or control of exposure. Every reasonable effort should be made to minimize exposure to the virus in the environment. The principal transmission route is airborne. Prevention efforts will adhere to the procedures outlined in Appendix C.

c. Surveillance procedures will follow Appendix D.

Appendix A References

Section I. Required Publications

AFI 32-1053 (Pest Management Program).

AR 40-5 (Preventive Medicine).

DODI 4150.7 (DOD Pest Management Program).

FM 21-10 (Field Hygiene and Sanitation).

OPNAVINST 6250.4A (Pest Management Program)

Armed Forces Pest Management Board Technical Information Memorandum (TIM) No. 41,
"Protection From Rodent-Borne Diseases With Special Emphasis on Occupational exposure to
Hantavirus.

Section II. Related Publications

"Control of Communicable Diseases In Man"; Benenson, Abram; 16th Edition, 1995.

"Manual of Hemorrhagic Fever with Renal Syndrome and Hantavirus Pulmonary Syndrome"; Lee,
HWL, Calisher, C, Schmaljohn C, 2nd Edition, 1999.

"Hantaviruses: A Global Disease Problem"; Emerging Infectious Diseases, 3(2): 95-104, 1997.

"Methods For Trapping and Sampling Small Mammals For Virologic Testing", U.S. Department of
Human Resources, PHS,CDC, Atlanta, GA. 1995.

USAEHA TG No. 138, "Guide to Commensal Rodent Control", 1991.

Appendix B Medical Procedures

B-1. Purpose

To describe procedures for the diagnosis, treatment, and reporting of all confirmed or suspected HF patients.

B-2. Applicability

These procedures are applicable to those known or suspected HF cases in USFK personnel.

B-3. Responsibilities

All medical providers must be able to recognize possible HF in the early stages and know how to appropriately evaluate and manage these patients. Further reporting of suspected or confirmed cases must be completed as required.

B-4. Procedures Applicable To HF (Known or Suspected):

a. Anyone with recent field exposure who complains of fever, reddened eyes, flushing of the face, or edema of the face or peri-orbital areas, backache, headache, or abdominal and or flank pain (nausea and vomiting are also common) should be considered a possible HF case. Individuals with the above signs or symptoms who demonstrate proteinuria or who present with a petechial rash or cutaneous ecchymosis or a fever of 101 degrees Fahrenheit or greater are medically suspicious for HF and will be evacuated to the 121st General Hospital.

b. Confirmatory laboratory testing for HF and diseases mimicking HF will be conducted by the 121st General Hospital. All positive serum specimens will be forwarded as outlined in Protocol FY 99-27, "Intravenous Ribavirin for the Therapy of Hemorrhagic Fever with Renal Syndrome (HF) in the 121st General Hospital (Seoul, Korea), IND 16,666".

c. Intravenous ribavirin therapy, an Investigational New Drug (IND), is currently indicated for treatment of confirmed or highly suspected HF. This drug will be available at the 121st General Hospital and will be administered by the Principal Investigator in accordance with Protocol FY 99-27.

d. Hemodialysis, when indicated, will be performed at a Korean Health Facility approved by the USFK Surgeon for this purpose.

e. All diagnosed and suspected cases of HF in USFK personnel, cases occurring within 60 days of redeployment and in personnel temporarily assigned/attached for training in the ROK, will be reported to the USFK Surgeon and the Preventive Medicine Consultant (FKMD-PM). The 121st General Hospital laboratory services will report any requests for HF laboratory tests to the Preventive Medicine Consultant. The Preventive Medicine Consultant will then coordinate an epidemiologic investigation of all known or suspected HF cases to assist in determining exposure and risk to exposed personnel.

Appendix C

Risk Reduction Exposure Prevention Procedures

C-1. Purpose

To describe procedures to prevent exposure to material potentially contaminated with viruses causing HF.

C-2. Applicability

These procedures are applicable to all USFK military personnel residing and/or conducting operations in the ROK.

C-3. Responsibilities

Unit Commanders and individual service members are responsible for implementing measures to reduce human exposure to rodents and their excreta (urine, feces, and saliva).

C-4. Procedures Applicable To Exposure Prevention

a. Advance parties should have technical expertise available to identify signs of rodent infestation, such as burrows, droppings, and sightings, as well as the presence of natural grain/food sources (i.e. rice fields, granaries, and refuse points), when selecting bivouac sites and staging or training areas as outlined in USAEHA TG 138. Bivouac sites should be located to avoid areas with heavy field rodent infestations.

b. Persons involved in the clean up of rodents or their excreta will follow the procedures outlined in the Armed Forces Pest Management Board TIM No. 4. Personnel will wear rubber or plastic gloves. Spray dead rodents, rodent nests, droppings, or foods or other items that have been contaminated by rodents with a general-purpose household disinfectant. Wet the material thoroughly, and place in a plastic bag. When clean up is complete (or when the bag is full), seal the bag, then place it into a second plastic bag and seal. Sealed bags can be placed in standard refuse containers for disposal in a sanitary landfill.

c. To avoid generating potentially infectious aerosols, do not vacuum or sweep dry surfaces before mopping. Mop floors with a solution of water, detergent, and household disinfectant or 1% bleach solution. Spray dirt floors with a disinfectant solution. A second mopping or spraying of floors with a general-purpose household disinfectant is optional. Carpets can be effectively disinfected with household disinfectants or by commercial-grade steam cleaning or shampooing.

d. Disinfect countertops, cabinets, drawers and other durable surfaces by washing them with a solution of detergent, water, and disinfectant, followed by wiping-down with a general-purpose household disinfectant. Rugs and upholstered furniture should be steam cleaned or shampooed.

e. If rodents have nested inside furniture and the nests are not accessible for decontamination, the furniture should be removed.

f. Launder potentially contaminated bedding and clothing with hot water and detergent. (Use rubber or plastic gloves when handling the dirty laundry; then wash and disinfect gloves) Machine-dry clothing/bedding on a high setting or hang it to air-dry in the sun.

g. Individuals will use personal hygiene measures such as hand washing prior to eating and showering after exposure to dusts and soil.

h. Discourage the use of natural vegetation, such as rice straw or pine straw, for camouflage or bedding. This vegetation provides harborage for rodents and may increase exposure to material that is potentially contaminated with feces, urine, or saliva containing Hantaviruses.

i. Individuals required to clean up areas of heavy rodent infestation will wear coveralls (disposable if possible), rubber boots or disposable shoe covers, rubber or plastic gloves, protective goggles, and an appropriate respiratory protection device, such as a half-mask air-purifying (or negative-pressure) respirator with a high-efficiency particulate air (HEPA) filter or a powered air-purifying respirator (PAPR) with HEPA filters.

Appendix D Surveillance Procedures

D-1. Purpose

To describe procedures to be followed for uniform surveillance of HF in the ROK among USFK forces.

D-2. Applicability

These procedures are applicable to personnel involved in the surveillance of HF.

D-3. Responsibilities

- a. Commanders will coordinate with service specific preventive medicine units for the surveillance of rodent populations in the ROK.
- b. USFK Surgeon will coordinate or implement the conduct of serologic surveillance of rodent populations as appropriate.

D-4. Procedures Applicable To HF Surveillance

a. Commanders will ensure that information on rodent population information is provided to the USFK Surgeon, (FKMD-PM) no later than the third business day of each month by fax or email. As a minimum the following information will be provided:

- (1) Installation Name;
- (2) Information on rodent trapped; common name, genus and species, number, location (building number or other method of identification); and
- (3) Date of trapping and type of trap used.

b. USFK Surgeon will provide threat assessment updates to Commanders based on information provided through the disease surveillance program.

Glossary

Section I. Abbreviations

| | |
|--------|-----------------------------|
| FST(s) | Field Sanitation Team(s) |
| HF | Hemorrhagic Fever |
| IAW | in accordance with |
| KHF | Korean Hemorrhagic Fever |
| ROK | Republic of Korea |
| U.S. | United States (of America) |
| USFK | United States Forces, Korea |

Section II. Terms

Ecchymosis. A purplish patch caused by extravasation of blood into the skin.

Epidemiology. The study of the distribution and occurrence of disease in populations.

Hantaan virus. The species of hantavirus that result in HF and is associated with moderate to severe disease. Also known as Korean Hemorrhagic Fever (KHF) or Hemorrhagic Fever with Renal Syndrome (HFRS) and is endemic in Korea and other NE Asian regions. It is more commonly associated with rural or military populations.

Hantavirus. The family of viruses that can cause HF.

Hemodialysis. Clinical procedure for the removal of toxins from the body of a patient with kidney failure by filtration of the blood.

Hemorrhagic Fever. In the Republic of Korea only one class of causative agent for hemorrhagic fever is significant at the time of this regulation revision – hantavirus. Two species of this virus family cause disease: a severe form by Hantaan virus and a milder form by Seoul virus. Both were called Korean Hemorrhagic Fever during the Korean War and for several years afterwards. However, as diseases caused by Hantavirus were discovered in other parts of the world, the scientific name of the disease was changed to Hemorrhagic Fever with Renal Syndrome to differentiate it from Hantavirus Pulmonary Syndrome seen in the Americas. Korean Hemorrhagic Fever (KHF) and Hemorrhagic Fever with Renal Syndrome (HFRS) have been used interchangeably in the Republic of Korea. In order to minimize confusion, the term “Hemorrhagic Fever” is now used throughout this regulation and refers to the disease caused by Hantavirus family of viruses present in the Republic of Korea

Investigational New Drug (IND). A drug that has not been approved by the U.S. Food and Drug Administration for general use, only for a specific disease or condition.

Petechia. Minute hemorrhagic spots of pinpoint to pinhead size in the skin.

Proteinuria. The presence of protein in the urine.

Seoul Virus. The species of hantavirus that result in HF and is associated with mild to moderate disease and is endemic worldwide. It is more commonly associated with urban populations.

Striped Field Mouse. Primary reservoir of Hantaan virus.

Norway and Roof rats. Primary reservoir of Seoul virus