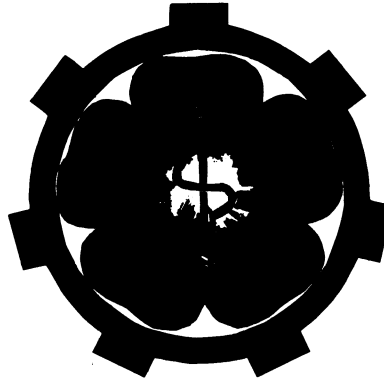
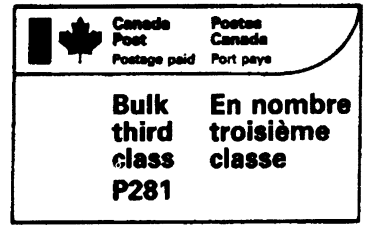


RETURN ADDRESS:

Editor, Alberta Occupational Medicine Newsletter
Dept. of Community Health Sciences
Faculty of Medicine
University of Calgary
3330 - Hospital Drive N.W.
Calgary, Alta., T2N 4N1 Canada



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ALBERTA OCCUPATIONAL MEDICINE NEWSLETTER

EDITOR'S COMMENTS

This second issue of 1994 begins with a clinical article on Hantavirus infections in Alberta. Dr. Masur is completing his residency in Community Medicine, and has spent some of his last year with the Communicable Diseases division of Calgary Health Services. He had noted some discrepancies in information available to the public and physicians on the topic of hantavirus infections, and has provided what we hope is a clearer description of the problem. Of particular help is a compilation of work precautions when handling mice or mice excreta, when working with mice or murine cultures in a laboratory or vivarium setting, and when decontaminating a known source of the infection.

The second article deals with Continuing Medical Education in the area of occupational medicine, more specifically the 1994 CME activities of the Occupational and Environmental Medicine Association of Canada. This national association was formed in 1983 and currently has over 300 members coming from all provinces and territories. Of particular interest to readers may be the Liaison Newsletter, the clinical guidelines survey, and the Annual Scientific Conference (next being held in Toronto, October 1-4, 1995).

Lastly, there is a brief addendum and update regarding the University of Alberta's Residency Training Program in Occupational Medicine, and a listing of conference and courses announcements that have crossed my desk in the past few months. I hope this edition of the Newsletter is of interest, and as always, I welcome any short articles from readers. Warm wishes for the Holiday Season to all.

Kenneth Corbet MD, FRCPC
Editor

* * *

HANTAVIRUS: AN OCCUPATIONAL HEALTH RISK IN ALBERTA

L. Charles Masur, MD*

Since the recent death of an Edmonton-area man, the public in general and workers in particular have expressed considerable concern about their risk of exposure to "hantavirus". This article provides some general information about the organism and its clinical presentation, and offers some guidelines to employers and workers in an effort to reduce the risk of occupational exposure to this organism.

Hantaviruses primarily infect rodents and, on occasion, may be transmitted directly to humans. There are several species of Hantavirus, including *Hantaan*, *Puumala*, *Seoul*, *Prospect Hill*, and the newly identified *Meurto Canyon* and *Black Creek* species.

Until the discovery of the Meurto Canyon virus, Hantaviruses were recognized as responsible for an array of diseases ranging from the "flu-like" illness caused by the Seoul organism to the hemorrhagic fever with renal syndrome due to the Hantaan virus. Since May 1993, the *Meurto Canyon* virus has been documented as the cause of severe respiratory disease (Hantavirus pulmonary syndrome or HPS) with reported fatality rates of up to 77 percent.

The main reservoir of the *Meurto canyon* virus is the deer mouse, *Peromyscus maniculatus*. This rodent, also called the white-footed mouse, is one of the most common mice found in Alberta. Infection by the virus has no apparent adverse effect on the mouse but causes it to release viral particles in its feces, urine and saliva.

The primary mode of transmission of *Meurto canyon* Hantavirus to humans is through the inhalation of aerosolized viral particles carried on dust from the feces or dried urine of infected deer mice. This virus may be

Prepared in the Department of Community Health Sciences, Faculty of Medicine
The University of Calgary, through funding by The Workers' Compensation Board - Alberta

transmitted from mouse-to-mouse through biting behaviour via saliva and may also be transmitted to humans by bites from infected mice.

It is not known exactly how long the virus survives outside the mouse but cases of HPS have been reported up to 43 days following exposure to mice and/or their feces or urine. Hantavirus disease usually develops within 7 to 14 days after exposure to mice or their droppings.

Hantavirus particles are enclosed in a lipid layer that can be broken down by most disinfectants. Thus, dilute hypochlorite solution (1:10 household bleach with water), detergents, ethyl alcohol (70%) and most general purpose household disinfectants are effective in destroying the virus. Any of these substances are useful in cleaning up mouse excreta and dead mice, and also in disinfecting rodent traps.

Clinical Presentation:

The clinical presentation of an individual with Meurto canyon Hantavirus infection has two phases. The first is a prodromal period averaging about four days in length where infected individuals complain of non-specific "flu-like" symptoms which almost always include fever, and often include headache, cough, sore muscles and joints, nausea, vomiting or diarrhea. Laboratory testing for specific evidence of Hantavirus at this stage is not currently available.

Following the prodromal phase, the clinical situation evolves rapidly with continued fever and the development of severe respiratory distress. Non-cardiogenic pulmonary edema, hypotension and respiratory distress syndrome ensue and require prompt admission to hospital.

Common laboratory findings accompanying the pulmonary syndrome include leucocytosis, hemoconcentration, and thrombocytopenia; bilateral pulmonary interstitial infiltrates are seen on x-ray. Specific laboratory testing for Hantavirus disease is available through the Provincial Laboratory for Public Health and includes serological, immuno-

histochemical, and polymerase chain reaction testing.

Treatment of HPS is mainly supportive and is focused on maintaining adequate oxygenation and blood pressure, and on avoiding fluid overload. Administration of Ribavirin, although utilized, has not been clearly demonstrated to be helpful. Without hospitalization and intensive care support death may follow within 9 days.

Precautions for Workers:

Many workers in the usual course of their occupation are exposed to mice and/or their excreta. Specific precautions (modified after Health Canada, 1994, August 15) for these workers include:

- A baseline serum sample, preferably drawn at the time of employment, should be available. The serum sample should be stored at -20 degrees C.
- Workers in potentially high-risk settings should be informed about the symptoms of the disease and given detailed guidance on prevention measures.
- Workers should wear a properly fitting half-face air purifying respirator equipped with high-efficiency particulate air filters when removing rodents from traps or handling rodents in the affected area.
- Workers should wear rubber or plastic gloves when handling rodents or traps containing rodents. Gloves should be washed and disinfected before removal.
- Traps contaminated by rodent urine or feces or in which a rodent was captured should be disinfected with a commercial disinfectant or bleach solution. Dead rodents should be disposed of wearing rubber or plastic gloves. Carcasses should be placed in a plastic bag with enough general-purpose household disinfectant or bleach solution to thoroughly wet the carcasses. Large numbers of carcasses should be either incinerated or buried in a 1 metre deep hole.

- Persons removing organs or obtaining blood from rodents in affected areas should follow appropriate biosafety guidelines outlined in the HWC/MRC Laboratory Biosafety Guidelines (1990) or contact Dr. H. Artsob of the Laboratory Centre for Disease Control at (613) 954-0757 for advice.
- Workers who develop a febrile or respiratory illness within 45 days of the last potential exposure should immediately seek medical attention and inform the attending physician of the potential occupational risk of Hantavirus infection. The physician should contact local health authorities promptly if Hantavirus-associated illness is suspected. A blood sample should be obtained and forwarded with the baseline serum sample to the Laboratory Centre for Disease Control via the Provincial Laboratory for Hantavirus antibody testing.

Additional Precautions for Clean-up Operations:

In certain instances, workers may be faced with cleaning up a home following a known case of Hantavirus infection or in cleaning up buildings with particularly heavy rodent infestations. The risk of acquiring Hantavirus infection in these instances may be higher and more strict precautions are indicated. Additional precautions are as follows (modified after O'Hanley *et al.*, 1994):

- Persons involved in the cleanup should wear coveralls (disposable if possible), rubber boots or disposable shoe covers, rubber or plastic gloves, protective goggles, and an appropriate respiratory protection device. Respirator practices should follow a comprehensive user program and should be supervised by a knowledgeable person.
- Personal protective gear should be decontaminated upon removal at the end of the day. If the coveralls are not disposable, they should be laundered on site. If no laundry facilities are available, the coveralls should be immersed in liquid disinfectant until they can be washed.

- All potentially infective waste material, including respirator filters, from cleanup operations that cannot be burned or buried deeply on site should be double-bagged in appropriate plastic bags. The bagged material should then be labelled as infectious (if it is to be transported) and disposed of in accordance with local requirements for infectious waste.

Precautions for Laboratory and Animal Care Workers:

Infections with Hantaviruses have occurred in cell culture workers. The following precautions are offered for laboratory and animal care workers (modified after Health Canada, 1994, August 15):

- All procedures potentially associated with the production of aerosols must be performed in a tested and certified biologic safety cabinet. Work with natural host rodent colonies that are maintained as closed units (no chance for the introduction of Hantavirus infection from the wild) does not require enhanced respiratory protection.
- Potentially infected serum and tissue may be handled in containment level 2 laboratories as outlined in the MRC/HWC Laboratory Biosafety Guidelines (1990). Work with rodents that have been infected with Hantavirus but are known not to excrete the virus, may be performed under containment level 2 conditions. Virus propagation must be carried out in no less than a containment level 3 laboratory. Work with infected natural host species requires a level 4 containment facility.
- When it is necessary to ship materials known or suspected to contain Hantavirus, appropriate containers must be used.

Sources of Further Information:

Further, more detailed, biosafety information may be obtained from Health Canada, Office of Biosafety, Laboratory Centre for Disease Control, (613) 957-1779.

Information on how to prevent rodent infestation of homes and other buildings, and on how to deal with low grade rodent infestation of home and work sites is available (Health Canada, 1994, August 15).

Dr. John Waters, Director of Communicable Disease Control and Epidemiology for Alberta has developed an Information Bulletin, October 12, 1994, entitled "*Albertans Reminded To Take Basic Precautions Against Hantavirus*" which contains two Backgrounders entitled "*Hantavirus Infection*", and "*Precautions against rodent infestation and Hantavirus infection.*" A media fact sheet entitled "*Four Ways to Protect Your Family From the Hantavirus*" has also been prepared. These available from all local public health offices.

In general, Albertans are reminded that, although Hantavirus infection is a potentially life-threatening disease, the risk of being exposed to and acquiring this virus is very low. However, workers in certain occupations may be potentially exposed to this hazard and must take appropriate precautions to avoid any risk of exposure to Hantavirus in the course of their work.

(References available on request).

* Resident in Community Medicine, Department of Community Health Sciences, Faculty of Medicine, The University of Calgary.

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UA RESIDENCY IN OCCUPATIONAL MEDICINE: ADDENDUM AND CLARIFICATION

This is an update to the story "Good year for Canada's first residency in occupational medicine: First graduate and Royal College approval!" in the Fall 1993 newsletter (Vol. X, No. 1).

In October, 1993, Dr. Linda Cocchiarella became the new Occupational Medicine Residency

Director at the University of Alberta. Dr. Cocchiarella comes to Edmonton from Chicago, where she recently completed a Clinical Fellowship in Environmental Medicine sponsored by the U.S. Agency for Toxic Substances and Disease Registry. Dr. Cocchiarella trained in both occupational medicine and internal medicine at Cook County Hospital in Chicago and holds a master's degree in epidemiology from John Hopkins. A native of New York, she did her undergraduate work in microbiology at the University of Michigan. Dr. Cocchiarella joins the Department of Health Services Administration and Community Medicine at the rank of Assistant Professor and will also have responsibility for managing the Occupational Health Consultation Clinic.

A clarification is also in order with respect to the article. In the sixth paragraph it states that one CIMS position open to the residency in 1993 "was already promised but it could have been filled many times over." It has been brought to our attention that this sounds like the position was promised outside the CIMS match, which would have been a violation. In fact, it was promised to an applicant within the CIMS match. It has been our policy to interview all candidates; the candidate was exceptional but had not been interviewed and there was no time to do so before the first match. We therefore promised him the position if the interview was satisfactory, which it was. We hope that this clarification forestalls a flood of letters from irate CIMS applicants.

Tee L. Guidotti, MD, MPH, FRCPC, CCBOM

(Dr. Guidotti is Professor of Occupational Medicine, Director, Environmental and Occupational Health Programs, Faculty of Medicine, The University of Edmonton.)

Occupational and Environmental Medicine Association of Canada

1994 Continuing Medical Education Report

The Membership Development Committee is one of four standing committees within the Occupational and Environmental Medicine Association of Canada (OEMAC). This report will describe the Committee's activities in five areas: the Liaison Newsletter, membership surveys, development of practice guidelines, the annual scientific conference, and the Royal College Maintenance of Competence Program (MOCOMP®).

To begin, several organizational changes help set the stage for our 1994 activities. The Membership Development Committee was approved as a standing committee at our 1993 Annual Meeting in Winnipeg. As discussed in "Maintenance of Competence in Occupational Medicine" (Liaison Newsletter, December 1993), it was also timely to extend the objects of our Association to more specifically address CME and maintenance of competence:

- to encourage and assist undergraduate, graduate, and continuing medical education in the fields of occupational and environmental medicine.
- to encourage high standards in the practice of occupational and environmental medicine.

These revised objects were passed by the Directors and members at our Annual Meeting in September 1994. Lastly, in keeping with the recommendations of MOCOMP®, a CME program coordinator/ credit assessor was appointed.

Liaison Newsletter

The quarterly Liaison Newsletter remains the primary source of information on the activities of our Association and those of the Canadian

Board of Occupational Medicine. It contains articles on medical practice, membership news and surveys, upcoming conferences, legislative developments, and work opportunities.

Membership Surveys

OEMAC is one of the few national specialty associations that conducts regular surveys of its members. Our most recent was undertaken in conjunction with membership renewals in early 1993, and addressed practice profile, continuing medical education, and practice satisfaction. Results of this survey were published in Liaison in March 1994. Another survey is planned for 1995 with more detail regarding conference planning, electronic communications, and CME activities of members.

Two shorter surveys were mailed out in early 1994. John Sehmer, as chair of the Alcohol and Drug Policy subcommittee, developed a questionnaire to assess members' opinions regarding drug testing in the workplace, in particular whether this should be confined to safety-sensitive job assignments. Results of this survey were published in the March 1994 issue of Liaison. Bob Kosnik distributed a questionnaire to assess members' opinions regarding electronic communications, disability insurance, office equipment, and direct mailings. The results of this survey were presented at the 1994 Annual General Meeting.

Annual Scientific Conference

A very successful Conference was held in Montreal from September 19-21, 1994 in conjunction with L'Association des médecins du travail du Québec. Thanks is given to Bernard Gascon for representing OEMAC on the conference planning committee. This conference provided the first opportunity for pre-registration credit with the Royal College's MOCOMP® program, and was approved for a total of 41 credit hours for the three-day program. Because our members may belong to one or more of the Royal College, Canadian Board of Occupational Medicine, and the

College of Family Physicians of Canada, the objective is to develop a conference planning and accreditation strategy that fulfils the requirements of each of these associations. Each association's CME accreditation requirements is now part of a 'conference planning manual' being forwarded to the Toronto 1995 and St. John's 1996 organizing committees.

Royal College Maintenance of Competence Program (MOCOMP®)

As outlined in the December 1993 Liaison article, there are several unique aspects of the MOCOMP® program:

- it assesses the quality of the CME (not solely the number of hours)
- it provides a simple means of recording both group and self-directed CME
- it provides both individual and group summaries of CME activities and topics.

A two-day workshop entitled "Planning Quality CME Activities for Specialists" was held May 5-6, 1994 at the Royal College offices in Ottawa. The objectives of this workshop were to:

- review the principles of planning quality CME programs for specialists;
- practice the MOCOMP® accreditation process for group CME activities;
- demonstrate the 'PC-Diary' software for recording self-directed CME activities;
- describe other opportunities for provision for CME by electronic means.

Based on experience gained in this workshop, OEMAC obtained pre-registration MOCOMP® credits for the 1994 Annual Scientific conference. Dave Dunham is working with the MOCOMP® program to revise the self-directed CME diary to better reflect the practice of occupational medicine. In addition to the Royal College's program, could a 'hybrid' format for documenting CME activities be developed that meets the needs of

other affiliated medical associations, as well as members not participating in a CME program otherwise? Lastly, the OEMAC has reserved space on the MOCOMP® electronic bulletin board, which we hope will help with the transfer of information, scheduling of meetings, and other Association business.

Development of Practice Guidelines

As the first step in compiling a national collection of practice 'guidelines' relating to occupational medicine, we undertook a survey of provincial medical associations and registrars in June 1994. They were asked to provide copies of any documentation since 1985 that addressed ten key areas:

1. Ethical conduct in the practice of occupational medicine
2. Relations between occupational and treating physicians
3. Relations between the occupational physician and third parties
4. Medical examinations of new or prospective employees
5. Absence management or disability management programs
6. Modified or 'early return to work' programs
7. Pregnancy and fitness to work
8. Health or exposure monitoring programs
9. Confidentiality, ownership, and transfer of occupational medical records
10. Criteria by which a medical service is deemed to be third-party.

There has been a good response so far (70%), with follow-up letters planned for early 1995. The survey may also be sent to other organizations such as provincial compensation boards, health care associations, and other national specialist societies. Working groups will be established to review and summarize the documentation in each of these areas, and to make recommendations regarding the

development of practice guidelines (in accordance with Clinical Practice Guidelines Project of the Canadian Medical Association). In addition to the good level of interest in this project on the part of the respondents, the Canadian Medical Protective Association has noted that consensus guidelines produced by national medical associations can carry considerable weight in medicolegal proceedings.

UPCOMING CONFERENCES

ALBERTA:

Alberta Labour offers information seminars on a number of topics which may be of interest to physicians. These include:

- Overview of the Occupational Health and Safety Legislation
- Health and Safety Committees
- Incident Investigation

To arrange seminars or programs in your area or to register, telephone the appropriate Alberta Labour office as listed below. There is a \$75.00 per-person registration fee for each half-day seminar. You must pre-register for all seminars.

Calgary:	279-2222	Grande Prairie:	538-5249
Camrose:	679-1214	Lethbridge:	381-5522
Edmonton:	427-8848	Medicine Hat:	529-3520
Red Deer:	340-5170	Peace River:	624-6163

CANADA:

New Challenges in Work and Health: Reducing Disability Associated with Soft Tissue Injuries

April 18-19, 1995
Sheraton Centre Hotel, Toronto, Canada

Contact:

Tazim Hirani
Institute for Work and Health
250 Bloor Street East, Suite 702
Toronto, Ontario M4W 1E6

Telephone: (416) 927-2027
Fax: (416) 927-4167

INTERNATIONAL:

"Health at Work in a World Without Frontiers" **IV Latin American Congress on Occupational Health** **IX Brazilian Congress on Occupational Health**

April 30-May 5, 1995
Curitiba PR Brazil

Contact:

GENESIS CONGRESSOS E EVENTOS LTDA
Rua Alferes Angelo Sampaio, 345 - Agua Verde
80.250-120 - Curitiba - PR - Brazil

Telephone:+55 (41) 342-1800
Fax:+55 (41) 342-3912

ICOH, Scientific Committee on Occupational Epidemiology **Epidemiology in Occupational Health** **11th International Symposium**

September 5-8, 1995
Noordwijkerhout, The Netherlands

Contact:

Ms. Susan Peelen
Dept. of Epidemiology & Public Health
P.O. Box 238, 6700 AE Wageningen
The Netherlands

Telephone: +31 8370-84124
Fax: +31 8370-82782
e-mail: susan.peelen@medew.hegl.wau.nl
