# EPI NORTH

The Northwest Territories Epidemiology Newsletter

July/August 1996 Vol. 8, Issue 4


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Northwest Territories Health and Social Services

# Guest Editorial Note:

## Weakening Our Heritage Even Further

In a recent issue of Epi North, we provided some figures showing that about 30 NWT residents die each year of lung cancer (out of about 200-250 total deaths). Lung cancer is almost entirely caused by cigarette smoking. One of the ways to protect our heritage is to encourage and support the elders to stay with us longer and to share with us their wisdom and priceless experience. By stopping smoking, fewer elders will be lost to lung cancer.

The impact of cigarette smoking is, in fact, even greater than was indicated in the previous article, because lung cancer is only ***one*** of the ways that cigarette smoking takes lives too soon. Another way is by destroying the lungs, through a group of diseases called emphysema, bronchitis, asthmatic bronchitis and chronic obstructive lung disease (sometimes called chronic obstructive pulmonary disease, or COPD).

A review of the past 12 months revealed that not only did 29 people get cancer of the respiratory passages, but 20 more were reported as dying with emphysema or chronic obstructive lung disease. Mostly, these too were young elders (average age just under 71 years).

Chronic lung disease does not take lives as quickly as lung cancer does. But it greatly weakens the people who get it, limiting their energy, strength and power to be active and vigorous in their communities and with their families.

Back in 1991, the NWT Community Health Representatives (CHRs) held a workshop called *"Promoting Health Now and for the Future."* Discussion focussed on how to advocate for health. There was particular discussion about chronic obstructive lung disease and what could be done about it. CHRs have continued to be very active in tackling this problem. But having just reviewed this material on COPD, lung cancer, and their effect on the elders, maybe we need to reword our approach from *"Promoting Health Now and for the Future,"* to *" Saving Our Past by Promoting Health Now and for the Future"*.

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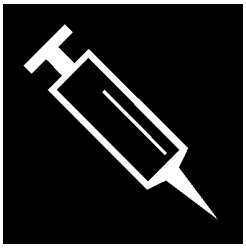


# Hepatitis C in the NWT:

*"While the numbers of newly diagnosed cases of Hepatitis B has remained stable ...there has been a sharp rise in Hepatitis C reports..."*

The availability of a new and more reliable screening test that began being used by the Red Cross in 1992 has made Hepatitis C identifiable. Recently, the media coverage given to the Krever enquiry on the safety of the Canadian blood supply has served to bring the subject of Hepatitis C to the forefront of clinical and public health practice, highlighting concerns about long-term consequences and heating up the debate on management issues. In this article, we take a closer look at the first fifty cases that have been reported in the Northwest Territories, covering a period between March 1992 and January 1996.

Since Hepatitis C was made reportable in the NWT, physicians and nurses have been asked to complete a specific investigation form for all newly identified cases. This form provides demographic and risk factor information as well as relevant medical history and test results. As of January 31, 1996, 50 cases had been reported and are included in this analysis, although information may be incomplete for some of them. Assistance in reviewing this data was obtained from Ms Elizabeth Stratton of LCDC (Field Epidemiology Program), whose help is gratefully acknowledged.

Figure 1: Hepatitis B & C Reports
NWT, 1989 - 1995

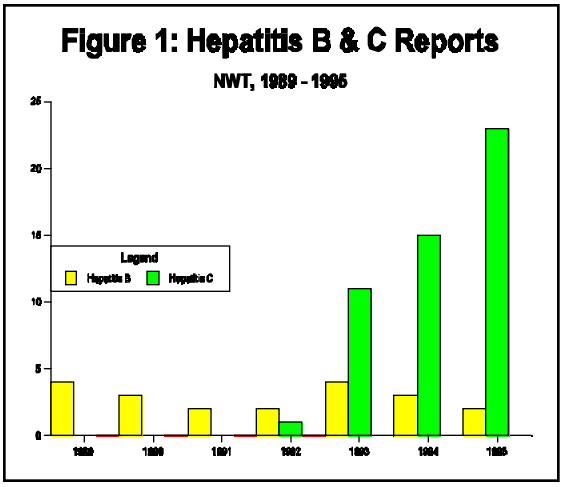



Figure 1 presents the number of Hepatitis C reports that have come in on a yearly basis since 1992, in comparison with newly diagnosed Hepatitis B cases.

While the numbers of newly diagnosed cases of Hepatitis B have remained stable over the past several years, there has been a sharp rise in Hepatitis C reports since testing became widely available.

As of June 30, there had already been 15 new reports for 1996, leading us to suggest that this exponential rise is continuing. However, a large proportion of these may represent long-standing disease (prevalent cases) rather than newly acquired infection (incident cases); this rise is therefore more likely attributable to increased testing rather than increased incidence rates.

Figure 2 shows the age distribution of the first 50 documented Hepatitis C cases. The average age is found to be 37. Especially amongst males, the concentration of cases in the "older" 30-45 age group reflects the fact that most people still get diagnosed when they first become symptomatic for chronic liver dysfunction, many years after acquiring the virus.

Figure 2: Age and Sex distribution
Hepatitis C in the NWT (n=50)

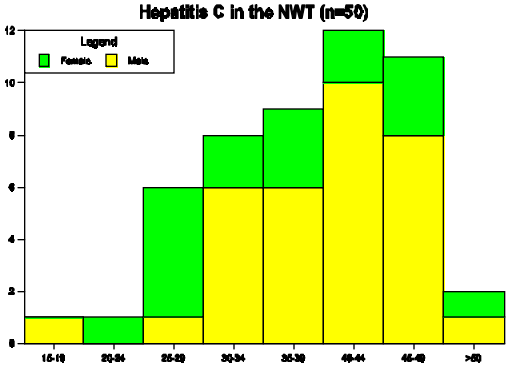



Figure 3: Reporting Region
Hepatitis C in the NWT (n=50)

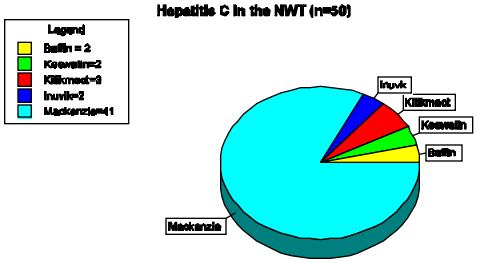
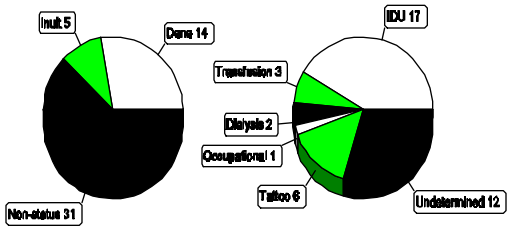



Figure 3 presents the regional distribution of cases. The large contribution of cases from the Mackenzie region in part reflects a greater level of testing and partly a higher number of individuals at higher risk living in Yellowknife. Finally, Figure 4 looks at distribution by ethnicity and risk factors that have so far been identified.

Figure 4: Ethnicity & Risk Factors
Hepatitis C in the NWT (n=50)



# A Retrospective Review

*Dr. Andre Corriveau*
*Territorial Epidemiologist*
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*GNWT - H&SS*

## Hepatitis C, the Virus (HCV)

HCV is a small single-stranded RNA virus responsible for up to 90% of what used to be referred to as "Non-A Non-B" hepatitis cases. There are at least 6 genotypes currently known, each with several subtypes and different geographical distributions (types 1a, 1b, 2a, 2b and 3a predominate in Western Europe and North America). Each type appears to show varying degrees of virulence and pathogenicity. Type 1 is the most frequently encountered variant in persons who develop cirrhosis, although all types are capable of inducing this complication.

Transmission occurs primarily by the parenteral route. In the NWT, as in the rest of Canada, IV drug use is the most commonly reported risk factor for acquiring HCV. Post transfusion risk used to be evaluated at 5 to 7% but it has now been substantially reduced with the advent of routine screening of blood donations. However, those who have received blood and blood products before 1992 should be considered for testing. The rate of transmission following occupational exposure has been estimated at around 12% after a single needle injury from an infected patient (the equivalent risk for HIV = 0.8%).

Sexual transmission is not firmly documented. Vertical transmission (mother to child) occurs in about 5% of cases, with the risk being higher when the mother is co-infected with HIV.

In up to one third of cases, no specific risk factor is identified. This is likely a result of people failing to recall or to admit to a specific risk factor. Laboratory studies have so far failed to identify hepatitis C virus RNA in semen, vaginal secretions or saliva from infected individuals.

Third-generation ELISA anti-HCV tests have excellent sensitivity (close to 100%) and specificity (99.7%), although false positive rates are also determined by prevalence in the test population. False negative results occur early on before antibody levels have become detectable (this "window period" is on average of 12 weeks post-infection, but may be up to 6 months) or in immunosuppressed hosts.

Confirmatory tests include:

- RIBA (Recombinant Immunoblot assays)
- Syntetic peptide assays (Inno-Lia)
- PCR (Polymerase Chain Reaction)

Acute Hepatitis C leads to symptoms in only a minority of cases. Over 75% of newly discovered cases will not recall any acute clinical illness suggestive of hepatitis and less than 10% develop jaundice.

There appears to be no lasting immunity confered by circulating antibodies. Through a hyper-variable envelope, an abundant production of defective particles and, possibly, an ability to replicate at extrahepatic sites, this virus appears particularly apt at evading the immune system. It is estimated that 80% of infections become persistent.

From the 80% who become chronic carriers, up to 30% will progress to cirrhosis. Rate of progression is influenced by other hepatotoxic agents: use of alcohol and co-infection with Hepatitis B or HIV. Cirrhosis attributable to chronic hepatitis C infection is the most common cause of liver failure requiring liver transplantation. There is increased risk for the development of hepatocellular carcinoma (5 to 10%).

Autoimmune phenomena can also be experienced by Hepatitis C carriers.

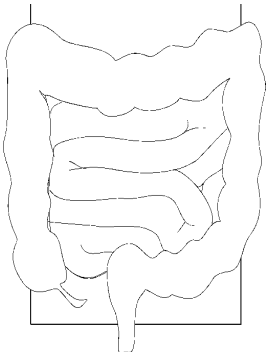
Chronic Hepatitis C is characterised by fluctuating ALT (Alanine Aminotransferase) levels. At any given time, 60% of chronic carriers will demonstrate normal or marginally elevated levels despite presence of Chronic Persistent or Chronic Active Hepatitis histologically. It cannot therefore reliably be used for clinical follow-up. Use of newer molecular techniques for detection of HCV (PCR of LCR technologies) should eventually provide a more meaningful tool for this purpose. At present, liver biopsy represents the best available means of assessing disease progression.

Interferon-alpha is the only therapy with any demonstrated effectiveness. However, a sustained response is achieved in barely 25% of cases. Troublesome side-effects, high costs and doubts about the ability of Interferon to prevent eventual development of cirrhosis or hepatocellular carcinoma continue to make its use somewhat controversial. Liver transplantation remains the only option for those with end-stage cirrhosis.

### Prevention

Prevention of HCV infection must focus on the risk behaviors associated with its spread. In a framework of harm reduction, promoting the use of clean needles and syringes through needle exchange and/or distribution of bleach kits for desinfection of injection equipment can play an important role. Body piercing and tatooing should only be done by trained individuals who understand and put into practice principles of sterilization or preferably use disposable needles. In the occupational setting, reinforcement of Universal Precautions remains the most effective approach.

***"Prevention of HCV infection must focus on the risk behaviors associated with its spread...ie. needle exchange (programs)..."***



# A Look At Colorectal Cancer

## Epidemiology

In 1995, colorectal cancer (or cancer of the large intestine and rectum) was second only after lung cancer amongst the most commonly reported types of cancer in the Northwest Territories. In the rest of Canada, the incidence of colorectal cancer comes third after breast and lung cancer in women and prostate and lung cancer in men.

*"In 1995, colorectal cancer was second after lung cancer in the NWT..."*

Because a large proportion of colorectal cancers are believed to be preventable, being linked primarily to various nutritional factors, it is useful to look at this disease in a little more detail. Table 1 shows the numbers of reported cases during the past 7 years. It is important to point out that the Cancer Registry unfortunately still suffers from underreporting, as well as delayed reporting; these figures therefore only represent a rough estimate of the true picture. The relatively small numbers and large year-to-year fluctuations also make it difficult to determine whether the incidence of new cases is increasing or remaining stable.

**Table 1: Colorectal Cancer Reports, 1989-1995**
**By year of diagnosis and by sex**

| | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | Total |
|---|---|---|---|---|---|---|---|---|
| **Men** | 3 | 6 | 2 | 5 | 6 | 3 | 8 | 33 |
| **Women** | 0 | 6 | 8 | 2 | 8 | 2 | 9 | 35 |
| **All** | 3 | 12 | 10 | 7 | 14 | 5 | 17 | 68 |

With a total of 68 cases over this 7 year period, the incidence rate of colorectal cancer has been an average of 15.5/100,000/year for the Northwest Territories, which compares favorably with that of Canada as a whole, estimated at around 50/100,000 for 1996.

Over this period, the ratio of men/women cases has remained close to 1, which is another general characteristic of this pathology in other parts of the world as well. Cancer is a disease related to aging and the incidence rates of colorectal cancer per age group illustrate this well; although the average age at time of diagnosis is 61 years, the risk of developing this cancer continues to rise with increasing age (Figure 1).

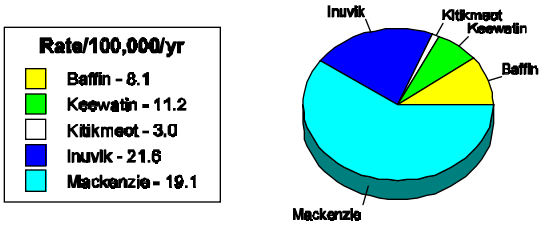
*"...the ratio of men [to] women cases has remained close to 1..."*

**Figure 1: Colorectal Cancer Incidence in the NWT**
**By Age Group: 1989 to 1995**

| Age Group | #of Reported Cases | Rate/100,000/yr |
|---|---|---|
| **25-34** | 2 | 2.2 |
| **35-44** | 4 | 6.2 |
| **45-54** | 17 | 50.6 |
| **55-64** | 18 | 97.4 |
| **65-74** | 12 | 156.7 |
| **> 75** | 15 | 328.0 |

The Inuvik and Mackenzie regions report incidence rates that are significantly higher than what is being observed in the central and eastern Arctic regions (Figure 2).

**Figure 2: Colorectal Cancer Incidence**
**By NWT Region, 1989 to 1995**




Although differential reporting may play a part in these differences, it nonetheless remains consistent with the fact that the highest rates are currently being seen amongst the Dene people (Figure 3).

**Figure 3:Colorectal Cancer Incidence in the NWT**
**By Ethnic Group: 1989 to 1995**

| Ethnicity | # of cases reported | % | Rate/100,000/ year |
|---|---|---|---|
| **Inuit** | 15 | 22 | 9.1 |
| **Dene** | 26 | 38 | 35.4 |
| **Metis** | 3 | 5 | 9.6 |
| **Non-Status** | 24 | 35 | 14.1 |

## Discussion

The suspicion that colorectal cancer may be linked to environmental and/or lifestyle factors arose initially from observations of 20-fold variations in incidence rates around the world, and the fact that immigrant populations who move from low incidence to high incidence areas will show an increase in rates, reaching those of the new country within one or two generations. Some countries like Japan and Italy have also seen rapidly rising rates over the past decades, while rates have remained generally stable in Northern Europe.

Colorectal cancer has not been shown to have a social class pattern, unlike most other types of cancer which have an association with socioeconomic status. Dietary factors are thought to account for over two third of all cases of colorectal cancer.

# In the Northwest Territories

*Dr. Andre Corriveau*
*Territorial Epidemiologist*
*Health Protection Unit*
*GNWT - H & SS*

Total fat and animal protein consumption has been consistently associated with increased risk while vegetable and fibre intake is demonstrated to have a strong protective effect in most studies. However, such associations, derived primarily from ecological studies, may be stronger not because these dietary constituents are causally related, but rather because they are easier to identify or recall. Most foods contain a very wide variety of nutrients and substances that cannot be reliably measured.

As studies have started to refine their approaches, there has been increasing evidence that fried meats may represent one common thread. Cooking protein-rich foods using high heat produces heterocyclic amine compounds, some of which are known to be potent mutagens. One study has reported finding the highest risk of colorectal cancer in people who were frequent consumers of fried meat with a heavily browned surface. This is an interesting hypothesis that could help explain why rates of colorectal cancer have until now been lower in the Northwest Territories, where foods among aboriginal people were to a large extent eaten raw, dried or boiled. The rapid abandonment of traditional diets and ways of preparing foods, in favor of high fat and fried foods would necessarily lead to a rise in colorectal cancer in the coming decades and could already explain some of the regional variations being observed.

Trihalomethanes, produced when chlorine reacts with organic matter during water treatment, have recently been showed to increase risk by a factor of 1½ over a 30 year exposure. Although chlorination of water is an important public health measure, this new information provides a strong argument in favor of improving sources and treatment processes (for example filtration) for drinking water.

## Risk Factors

Other factors shown to increase the risk of colorectal cancer include:

- family history (twofold increase if present in first-degree relatives)
- occupational exposure to asbestos (twofold increase for heavily exposed persons)
- having ulcerative colitis
- smoking cigars (3x) or pipes (5x), presumably because of swallowing of tars and arylamines
- physical inactivity, possibly through its link with constipation (increased transit time and therefore of contact time between colorectal mucosa and potential carcinogens).

## Protective Factors

- high fiber and vegetable consumption (many vegetables contain substances that have anticarcinogenic properties, while fiber may bind carcinogens and also decreases transit time).
- use of nonsteroidal anti-inflammatory drugs (like aspirin)

## Screening

Secondary prevention of colorectal cancer by screening (to prevent mortality) remains impractical. Digital rectal examination is of limited value, as it is estimated that less than 10% of colorectal cancers can be directly palpated. Fecal occult blood testing, when performed for asymptomatic individuals over the age of 50, only has a 5 to 10% positive predictive value for carcinoma. Such a large proportion of false positive test results is an important concern, considering the issues of discomfort, cost and risks associated with follow-up diagnostic tests. Also, relying on occult blood testing could provide false reassurance because small malignancies may not bleed or only do so intermittently. Finally, some people, including the American Cancer Society, have been advocating periodic (every 3 to 5 years) sigmoidoscopy for persons over the age of 50. However, one must consider the issues of cost, acceptability and potential iatrogenic risk associated with this procedure. The longer flexible sigmoidoscopes could detect a maximum of 50 to 60% of colorectal cancers.

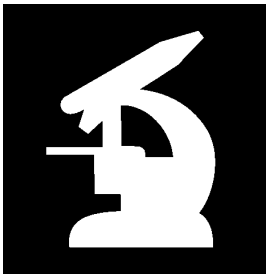
For all these reasons, routine screening for colorectal cancer is not recommended by the Canadian Task Force on Periodic Health Examination. In the context of the Northwest Territories, where rates are still lower than in the rest of Canada, it will be more effective to pursue primary prevention of this disease through promotion of traditional foods and sharing of information regarding avoidable risk factors.

***"Protective factors are: high fiber and vegetable consumption... [which] contain substances that have anticarcinogenic properties..."***

## References

*Colon Cancer: A Review of the Epidemiology,* by JD Potter, ML Slattery, RM Bostick and SM Gapstur; in Epidemiologic Reviews, Vol. 15, N° 2 (1993), pages 499-545.

*Guide to Clinical Preventive Services,* U.S. Preventive Services Task Force @ http://text.nlm.nih.gov

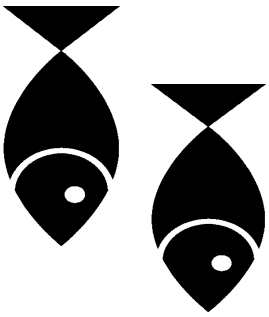


# Reportable Diseases in the NWT:

This is a new "feature" for EpiNorth. Each issue will highlight one or two interesting or unusual cases which have been reported over the past two months. A case study will be presented as well as case definitions, disease descriptions and a look at NWT figures where possible. This issue will highlight two cases from the Kitkimeot, involving botulism and trichinosis.

***Did you know???***

*There are 46 reportable diseases in the NWT. The NWT Public Health Act dictates whether they must be reported to the Health Protection Unit within 24 hours or within 7 days.*



**Botulism in the NWT**
(By Region)

1986- 3 cases (Keewatin)

1987 - 0

1988 - 0

1989 - 4 (Inuvik)

1990 - 1 (Baffin)

1991 - 6 (Keewatin (5) & Kitikmeot(1)

1992 - 1 (Inuvik)

1993 - 1 (Keewatin)

1994 - 2 (Keewatin and Inuvik)

1995 - 1 (Inuvik)

## A Case of Botulism

*Following a two-day history of shortness of breath, dry mouth, fever, progressive weakness and lethargy, this 57 year old woman presented to the Health Centre with signs of respiratory difficulty. A medivac was arranged to SRH. On arrival, the patient had dilated and unreactive pupils, weakness, decreased gag reflex and BP 80/60. A large amount of gastric fluid was removed via NG tube. She was intubated for respiratory acidosis. A CXR revealed RUL infiltrative pneumonia and a collapsed lung. The preliminary diagnosis of pneumonia/?CHF soon became suspected botulism, based on symptomatology. Serum and stool samples were taken and botulism antitoxin administered. (See Management of Suspect Botulism - Pg. 11). Mice at Alberta Provincial Lab were injected with the patient's serum and died shortly with signs of classic botulism. Prompt notification to the Health Protection Unit was done by the NIC, EHO and SRH. Further investigation at the community level revealed that an unknown quantity of fermented fish heads had been consumed by this woman a few days earlier. Remaining fish heads were confiscated and history of consumption by other community members established.*

### What is Botulism??

There are three forms of botulism--classic (foodborne), infant and wound botulism. The following description deals with classic botulism. Classical botulism is a severe intoxication resulting from ingestion of toxin preformed in contaminated food. The illness is characterized by clinical manifestations relating primarily to the nervous system. Visual difficulty (blurred or double vision), dysphagia and dry mouth are often the first complaints, followed by symmetrical flaccid paralysis in an alert person. Vomiting and constipation or diarrhea may be present initially. Fever is absent unless a complicating infection occurs.

***Infectious agent:*** Classical botulism is caused by toxins produced by *Clostridium botulinum*, a spore-forming obligate anaerobic bacillus. Most human outbreaks are due to types A, B and E. Type E outbreaks are usually related to fish, seafood and meat from marine mammals. Toxin is produced in improperly processed, canned, low-acid or alkaline foods, and in pasteurized and lightly cured foods held without refrigeration, especially in airtight packaging. The toxin is destroyed by boiling. Type E toxin can be produced slowly at temperatures as low as 3 degrees Celcius, which is low er than that of ordinary refrigeration.

***Occurence:*** Worldwide; sporadic cases, family and general outbreaks occur where food products are prepared or preserved by methods that do not destroy the spores and permit toxin formation. Cases rarely result from contaminated commercially processed products. Cases in the Arctic coast are found where sea mammals or fish are preserved in airtight containers (plastic bags or containers) and buried, providing an anaerobic environment, ideal for toxin formation.

***Reservoir:*** Spores are ubiquitous in soil and are also found in marine sediment and the intestinal tract of marine animals, including fish.

***Mode of transmission:*** Acquired by ingestion of food in which toxin has been formed, predominantly after inadequate heating. In Canada, outbreaks have been associated with seal meat, smoked salmon and fermented salmon eggs.

***Incubation period:*** Neurologic symptoms usually appear within 12-36 hours, (up to several days) after eating contaminated food. In general, the shorter the incubation period, the more severe the disese and the higher the case fatality rate.

***Period of communicability:*** Despite excretion of *C. botulinum* toxin and organisms at high levels in patients' feces for weeks to months after onset of illness, no instances of secondary person-to-person transmission have been documented.

***Treatment:*** Intravenous and intramuscular administration of trivalent botulism antitoxin (types A, B & E) as soon as possible. Blood serum should be collected prior to antixtoxin administration if possible. Access to an ICU is important so respiratory failure can be anticipated and managed promptly. With good respiratory care and specific antitoxin, the case fatality rate is generally under 15%. Recovery may be slow.

### Case Definition

***Confirmed Case:*** Clinically compatible symptoms with history of exposure to a probable source and one of the following:

1. Detection of *Clostridium botulinum* toxin in sera, feces or food.
2. Isolation of C. botulinum from stools.
3. Epidemiologic linkage to other cases of confirmed foodborne botulism.

***Clinical Case:*** Overwhelming clinical and epidemiologic evidence of foodborne botulism, but no laboratory confirmation obtained.

# Case Reviews - Botulism and Trichinosis

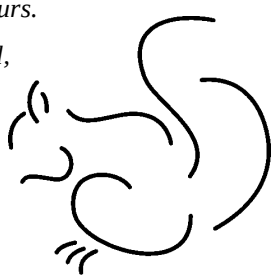
*Lona Heinzig, RN BSN*
*Communicable*
*Disease Analyst*
*Health Protection Unit*

## A Case of Trichinosis

*A 78 year old Kitikmeot man was transferred to SRH with a 1-2 week history of diarrhea. He did not have a history of pain, nausea or vomiting. He had decreased appetite and had experienced a 5 kg weight loss. Lab work showed WBC 12.5 with 55% eosinophils.*

*History revealed that he ate a variety of wild meats recently, but was unclear as to what he had consumed during the last two weeks. Discussion with his daughter indicated that he had consumed some ground squirrel while at her house, but that it had been boiled for several hours.*

*Parasites were suspected, with trichinosis being most probable. This was later confirmed by serology. The client was treated for10 days with Mebendazole.*



### What is Trichinosis?

Trichinosis is a disease caused by an intestinal roundworm whose larvae (trichinae)migrate to and become encapsulated in the muscles.

Clinical illness in humans is highly variable and can range from inapparent infection to a fulminating, fatal disease, depending on the number of larvae ingested. Sudden appearance of muscle soreness and pain together with edema of the upper eyelids are early characteristic signs. These are sometimes followed by subconjunctival, subungual and retinal hemmorhages, pain and photophobia. Thirst, profuse sweating, chills, weakness, prostration and rapidly increasing eosinophilia may follow shortly after the ocular signs.

Gastrointestinal symptoms, such as diarrhea, due to the intra-intestinal activity of the adult worms, may precede the ocular manifestations. Remittent fever is usual and varies according to the intensity of the infection.

***Diagnosis:*** Serologic tests and marked eosinophilia may aid in diagnosis. Biopsy of skeletal muscle, taken more than 10 days after infection frequently provides conclusive evidence of infection by demonstrating the uncalcified parasite.

***Occurence:*** Worldwide, but variable in incidence, depending in part on practices of eating and preparing pork or wild animal meat, and the extent to which the disease is recognized and reported. Sporadic outbreaks in the North are often related to consumption of Arctic mammals.

***Reservoir:*** Swine, dogs, cats, horses, rats and many wild animals including fox, wolf, bear, polar bear, wild boar and marine mammals in the Arctic, and hyena, jackal, lion and leopard in the tropics.

***Mode of transmission:*** By eating raw or insufficiently cooked flesh of animals containing viable encysted larvae, chiefly pork and pork products and "beef products" such as hamburger adulterated either intentionally or inadvertently with raw pork.

***Incubation Period:*** Systemic symptoms usually appear about 8-15 days after ingestion of infected meat; varies between 5 and 45 days depending on number of parasites involved.

**Trichinosis in the NWT**

| Year | Number of Cases | Region | Suspect Source |
|---|---|---|---|
| 1995 | 8 | Keewatin | walrus |
| 1994 | 0 | N/A | N/A |
| 1993 | 3 | Keewatin | unknown |
| 1992 | 19 | Keewatin | walrus/seal |
| 1991 | 21 | Keewatin | walrus/seal/ beluga whale |
| 1990 | 7 | Keewatin | walrus/seal |
| 1989 | 7 | Keewatin | walrus |

***Period of Communicability:*** Not transmitted directly from person to person. Animal hosts remain infective for montlhs, and meat from such animals stays infective for appreciable periods unless cooked, frozen or irradiated to kill the larvae.

***Treatment:*** Mebendazole or Pyrantel is effective in the intestinal and muscular stages. Corticosteroids are indicated only in severe cases, to alleviate symptoms of inflammatory response when the CNS or heart is involved.

***Investigation of contacts and source of infection:*** Check other family members and persons who have eaten meat suspected as the source of infection. Confiscate any remaining suspected food.

### Case Definition

***Confirmed Case:***
Clinically compatible symptoms with a *Trichinella* positive muscle biopsy or positive serology for trichinosis.

***Clinical Case:***
Clinically compatible symptoms and epidemiologically linked to a confirmed case or to meat known to contain trichinella larvae.

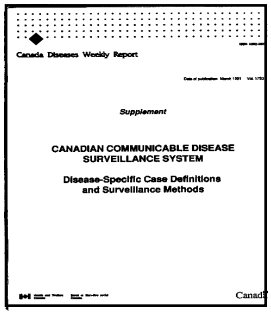
### References:

*Control of Communicable Diseases in Man,* 15th edition (1995), Benenson, Abram S. (editor). American Public Health Association.

*Canadian Communicable Disease Surveillance System: Disease-Specific Case Definitions and Surveillance Methods.* (1991). Canada Diseases Weekly Report, Health and Welfare Canada.

### What is a "case"?

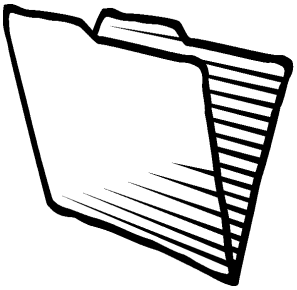
*Clinical and confirmed cases must meet National Standards. Each community should have a copy of the Canadian Communicable Disease Surveillance System: Desease-Specific Definitions and Surveillance Methods*


Canada Diseases Weekly Report

Supplement

CANADIAN COMMUNICABLE DISEASE SURVEILLANCE SYSTEM

Disease-Specific Case Definitions and Surveillance Methods



# Keeping The Records Straight:

People who keep records don't always get a lot of credit for what they do. While mountains of paperwork are done, one often wonders if it ever is looked at again. Yet the original reason that some authority asked for this information was because somehow there was something important to know in the first place.

Numbers and facts, just by themselves, often seem boring and irrelevant. They can begin to capture our attention and interest and have meaning, however, when they are compared with other peoples, groups, or situations that we know.

***"Numbers and facts by themselves, often can seem boring and irrelevant. They can begin to...have meaning however, when they are compared with other peoples, groups, or situations..."***

Let's take an example: Quite a while ago, the Chief Executive Officer (CEO) of one of the Regional Health Boards (Region X) called me to say that they had read somewhere that this Region had the highest Infant Mortality Rate (IMR) in Canada. The IMR is the count of the number of babies that die out of all those born in a given year). The IMR is felt to be a pretty good proxy measure of the general health of the population within which those births and deaths occur. If you know the Infant Mortality Rate for any given region, you are able to make comparisons between the IMR of other regions in the world.

To obtain this index we need, of course, to have a careful count of all the babies born, in a given year (or period of time) and all the baby deaths (under age 1) which occurred during the same period.

When the IMR for Region X was calculated for the CEO, we found that the number of births in the Region seemed to have taken a nosedive. There were a lot fewer births than in the previous years. As we were unaware of any upsurge in birth control, and it was unlikely that there could have been such a big change in sexual behaviour to explain why there should be fewer babies, suspicion then fell upon the records. Sure enough, what was discovered was that at the Regional Hospital, the staff working on the weekends had misunderstood what they were supposed to complete birth registrations. The result was that the babies born on the weekend had not been counted for a whole year!

Although that particular problem was with the birth registrations, the same problem could also occur with death registrations, which could skew the entire picture.

Death records may, in fact, be even more important. Whereas the Infant Mortality Rate will give a general picture of good or poor community health, the death registrations give much more precise information on why individuals died. With this important knowledge, you can begin to identify ways to try to reduce or prevent these deaths.

Once a month the NWT's Department of Safety and Public Services sends all the Birth, Stillbirth and Death Registrations that have been submitted from across the Territories to the Department of Health and Social Services. Today after reviewing 24 death registrations, I noted a recurrent problem if these reports are to be used as effective tools to help identify trends and determine priorities.

The problem is that many of the certificates are not filled out clearly. For example, one-quarter state the cause of death as "unknown". If all the "unknowns" had died of alcoholism, that would reflect a very different problem than if they had all died of TB, or car accidents, or some other factor. Some of the reports say the deaths were due to "cancer", but as we know, lung cancers, cervical cancers and other preventable cancers present challenges which are different from the cancers of less certain origin. Being specific is therefore of extreme importance.

The Registration of Death Form is divided into two sections. The right section is the Medical Statement of Cause of Death, which is usually filled out by the doctor or nurse. There are instructions on the back of the form, that tell us how it should be filled out. The section on the left includes the personal information of the deceased. The biggest problem, and one that often leads to peculiar NWT statistics, is the Cause of Death reported. This is supposed to be the ***Disease, Injury,*** or ***Complication*** that **caused** the death. Table 1 on the following page outlines examples of immediate, antecedent and other significant conditions which should be reported.

Unfortunately, what is often indicated as "cause" could more accurately be described as the *"way of dying"*, and this can really lead us astray. For example, some of the certificates reviewed today state the Cause of Death to be "Respiratory Arrest". In actual fact, while all of those who died did indeed have a respiratory arrest, the real causes of death were due to a wide variety of factors. I noted, for example, that 2 people died from specific viral infections, 3 by hanging, 2 from alcoholic cirrhosis, 4 from different kinds of cancers. Being clear in the section on Immediate Cause of Death will ensure that the data that we all use is much more meaningful.

Epi North will continue to report both regional and territorial statistics, but the better the reports about births and deaths are, the more accurate that information, feedback, and comparisons will be.

Based on the information that Statistics Canada received from the NWT in past years, the following IMRs were calculated in response to the CEO's question regarding Region X. (See Figure 1).

# A Look At Reporting in the NWT

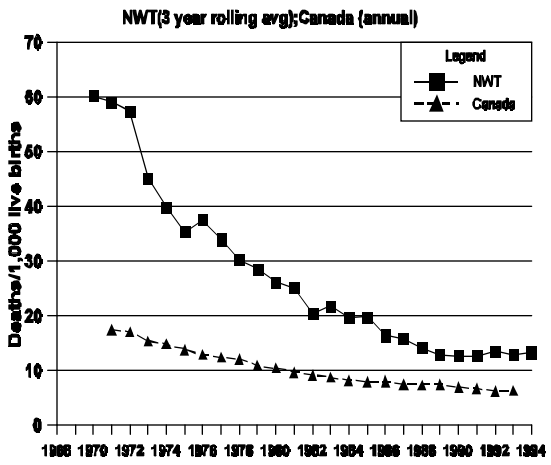
*F. Ian Gilchrist, MD, DPH*
*Chief Medical Health Officer, GNWT*

**Figure 1: Infant Mortality Rate**

(Baby deaths under 1 year / All babies born alive in the year X I000)

| | Canada | NWT | Region X |
|---|---|---|---|
| 1972 | 18.8 | 48.5 | 52.6 |
| 1982 | 10.9 | 16.2 | 23.2 |
| 1992 | 6.7 | 16.7 | 15.0 |

**Figure 2: Infant Mortality Rate**




If the figures are accurate then the NWT (including Region X) is definitely lagging behind the rest of the country. This should concern us. However, because those rates were calculated on the basis of just a couple of dozen deaths, and a few hundred births, if things (like the missing weekend babies or a handful of unreported deaths) were not taken into account, then the real rates might not be so bad...or they could be worse! The graph in Figure 2 shows how things seem to be.

By improving our record-keeping throughout the NWT, we can have much more confidence in our actual numbers and rates of infant mortality. This data, in turn, should indicate to each Region where to concentrate future health promotion efforts and initiatives.

In conclusion, when I was a young student doctor, one of my teachers used to say to me "Ian, I'd rather have a kick in the ass than lose a baby". By filling our forms out with care, and keeping our records straight, we may be better able to understand whether we are moving to the joy of healthy babes, or whether we are getting a kick.

***"By improving our record-keeping...we can...have much more confidence in our [reported conclusions]..."***

**Source:**
MSB, GNWT Vital Data, Statistics Canada

**Table 1: Examples of Causes of Death**

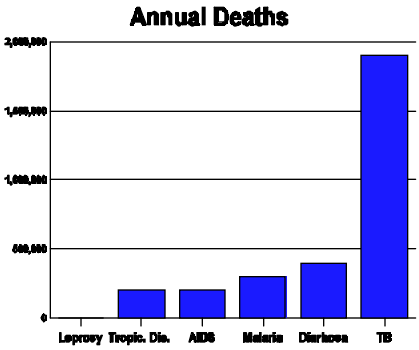
| CAUSE OF DEATH | Example 1 | Example 2 | Example 3 | Example 4 | Example 5 |
|---|---|---|---|---|---|
| **Part 1** | | | | | |
| **Immediate** cause of death | (a) **Lobar pneumonia** | (a) **Pulmonary tuberculosis** | (a) **Acute peritonitis** | (a) **Broncho-pneumonia** | (a) **Uraemia** |
| | due to (or as a consequence of) | due to (or as a consequence of) | due to (or as a consequence of) | due to (or as a consequence of) | due to (or as a consequence of) |
| **Antecedent causes,** if any, giving rise to the immediate cause (a) above, stating the underlying cause last | (b) due to (or as a consequence of) | (b) due to (or as a consequence of) | (b) **Acute appendicitis** due to (or as a consequence of) | (b) **Operation** due to (or as a consequence of) | (b) **Chronic Nephritis** due to (or as a consequence of) |
| | (c) | (c) | (c) | (c) **Strangulated inguinal hernia** | (c) |
| **Part II** | | | | | |
| **Other significant conditions** contributing to dealth but not causally related to the immediate cause (a) | | | | **Chronic interstitial nephritis** | **Chronic bronchitis** |

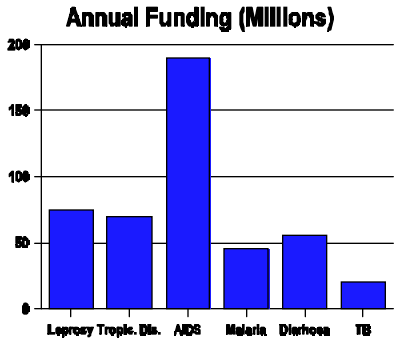

# Tuberculosis: For Your Information

## TB...A Global Emergency

Until recently, tuberculosis had been believed to be a vanquished illness in most of North America. Even in the North, the rates had reached the lowest rates of this century. But about five years ago the trends reversed and rates within North America began to increase. In some areas, rates now rival those in central Africa. This is due to many reasons, including relaxation of detection and treatment programs, immigration, and the interaction between TB and HIV/AIDS.

In 1994 the World Health Organization declared tuberculosis as a global emergency because it is the most common cause of death due to a single pathogen, and yet receives the lowest level of funding. The Canadian Association for the Elimination of Tuberculosis recently reported the figures in the accompanying graphs.




James Irving, Chairman for the Association summarizes: "It is paradoxical that for all the pain and suffering it causes, tuberculosis is easy to diagnose, and is totally curable if found early. But all of this TB control takes time, money and commitment by a Public Health system facing cutbacks and restructuring".

## Canadian Tuberculosis Standards


The Canadian Lung Association has recently released the updated version of the Canadian Tuberculosis Standards. The following excerpt on BCG is taken from these standards. While this release will not be distributed to the Health Centres, the Health Protection Unit is currently updating the Tuberculosis Manual for the NWT. Updated sections on "Contact Tracing" and "Specimen Collection" are presently being distributed, with more sections to follow this fall. Please contact your Regional Nursing Officer or the Health Protection Unit if you have not received these updates.

### The BCG Vaccine

The Bacille Calmette-Guerin (BCG) vaccine is a suspension of live tubercle bacilli that has been attenuated. It is used in North America for people who live and work where there is a risk of exposure to tuberculosis. Recent studies have shown that BCG has a significant protective effect against both pulmonary and disseminated tuberculosis.

Some of the populations that BCG vaccine is recommend for include newborns of aboriginal descent, healthcare workers at risk of exposure to TB, and Canadians visiting countries known to have a high incidence of TB.

There are some possible adverse reactions associated with BCG vaccination. These are catagorized as mild, moderatly severe, and serious reactions. They range from skin ulceration and adenitis to osteitis when the vaccine is given in the thigh or gluteal region. There is no specific treatment for most adverse reactions.

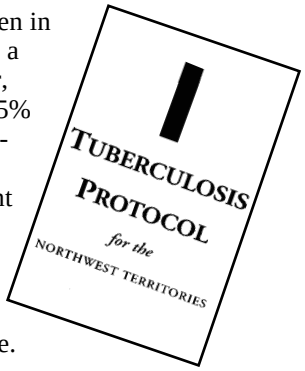
### Mantoux Testing and BCG

Tuberculin skin testing involves injecting, into the skin, a small amount of purified protein derivative from tubercle bacilli. Persons who have developed immunity to tuberculin antigens will have a delayed (within 48 hours) local reaction, manifested as induration of the skin.

There are three principle indications for tuberculin skin testing: the diagnosis of infection in contacts of active cases, persons with abnormal xrays and in mass screening; the diagnosis of disease, although this use is limited; and as an epidemiological tool.

The mantoux must be read within 48-72 hours of administration. The induration, **not redness**, is measured in millimeters using the transverse diameter. If the site blisters, this should be documented as well. A reaction is considered positive if the induration is 10mm or greater, unless the individual is considered immune suppressed, in which case, reactions between 5 and 9mm should be investigated.

BCG vaccination, when given in infancy, is unlikely to cause a reaction of 10mm or greater, however, between 10 and 25% of children, who were vaccinated between the ages of 2 and 6 or older, had persistent reactivity. As most BCG vaccines are administered in infancy, vaccination history can be ignored when contact tracing is being done.



# Management of Suspected Botulism:

## Antitoxin Administration

The treatment of botulism includes neutralizing circulating toxin by administering botulism antitoxin and supporting the patient's respiration and other bodily functions.

1) Any health centres which are at risk for botulism (eg.Arctic Coast communities must stock 2 vials of **Botulism Antitoxin .Trivalent** at all times.

2) Botulism Antitoxin Trivalent is distributed under the Emergency Drug Release program. THE PRESCRIBING PHYSICIAN MUST OBTAIN AUTHORIZATION FROM THE BUREAU OF BIOLOGICS, HEALTH CANADA, FOR THE USE OF THE LOT IN EACH INDIVIDUAL PATIENT.

3) Botulism Antitoxin Trivalent is of equine origin. Approximately 20% of treated persons experience some degree of hypersensitivity. SENSITIVITY TESTING MUST BE CONDUCTED BEFORE ADMINISTERING ANY ANTITOXIN TO A PATIENT.

For sensitivity testing, use the skin test method. The eye test is no longer recommended. For individuals with a positive skin test, desensitization should be carried out. Refer to manufacturerers insert.

**Epinephrine Hydrochloride Solutions (1:1000) should be available for immediate use when skin testing is being conducted or when the Botulism Antitoxin is being administered.**

4) For a suspected case of botulsim, 2 vials of Botulism Antitoxin are given. The first vial is given intravenously over a one hour period at a dilution of 1:10 using Normal Saline as the diluent. Since the volume of antitoxin varies from vial to vial the dilution of 1:10 must be calculated based on the volume of each vial of Botulism Antitoxin. Once the IV infusion of Antitoxin is initiated, a second vial of Botulsm Antitoxin is given by intramuscular injection.

## Specimen Collection

Specimens are usually packed in Saf-T-Pak containers with cold packs included in a styrofoam container. ***Precautions:*** Use aseptic technique to avoid exposure to toxin. Carefully label all specimens. DO NOT LICK LABELS.

**Serum:** Before administering antitoxin, collect 20 ml of whole blood. Separate serum and keep it refrigerated.

**Vomitus, stomach contents and feces:** Collect 10g specimens as soon as possible in a sterile screw-cap jar and seal securely. Refrigerate, but do not freeze. If the patient is constipated, send first bowel movement, even if several days later.

**Suspected foods:** Collect at least 10g of food remnants in a sterile screw-cap jar and seal well. If commercial products are suspected, submit any other cans or bottles bearing the same batch number. Refrigerate, but do not freeze.

## Submission of Specimens:

The Botulism Reference Service (BRS) requires the following epidemiological information:
-Name, address and age of patient
-Signs and symptoms, food eaten, when
-Name address and phone number of health care practitioner to be notified of results
-Time and date of specimen collection
-Details of food specimens: whether home or commercially canned
-Name each food and comment on method of preparation, whether heated and for how long
-Document date and time eaten and conditions under which the food remnants were stored between meals and sampling
-If commercially canned, specify brand name, lot number and any codes embossed on can/package

**Note**: If epidemiological information is not included with the shipment of samples, it should be communicated to the Botulism Reference Service by fax or phone.

## Notification Instructions:

All cases of suspected botulism must be reported to the MHO by telephone as soon as they are suspected, and followed within 24 hours by a written report.

For release of the Botulism Antitoxin contact:

**Bureau of Biologics**
**(613) 957-0362**

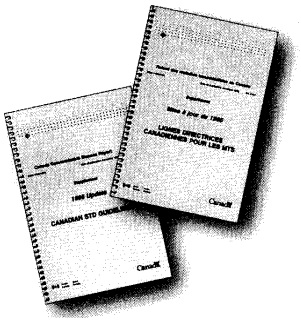
For questions regarding specimen collection and shipping contact:

**Botulism Reference Service (BRS)**
**(613) 957-0885**
**(613) 941-0280 (fax)**

## Penicillin Resistant Neisseria Gonorrhea (PRNG):Manitoba

A total of 19 cases of PRNG were reported March 9th-May 23rd, 1996 in Manitoba. This is the largest outbreak of it's kind in Manitoba. Ages ranged from 15 to 55 years of age. Most of the cases and contacts were located in the Winnipeg area, however cases have also been detected in rural and northern regions. A common source has not been determined and few links have been found between cases. Many of the cases and contacts have documented involvement in such activities as: gangs, street life, sex trade work, multiple sex partners, and drug injection use.

Penicillin-resistant gonorrhea has not yet become a problem in the NWT. However, where sensitivities are available, much more "intermediate" sensitivity to penicillin is being seen. For this reason, the "Pro-Amp" kit is no long accepted treatment for suspected or confirmed gonorrhea. The ***CCDR Supplement: 1995 Update-Canadian STD Guidelines***, outlines recommended treatment: **cefixime, ciproflaxacin or ofloxacin** (with doxycycline/ tetracycline/azithromycin for chlamydia).



# Site-Seeing (on the "Net")

Here we go...on another high-speed journey via the Information Highway...

### Destination: http://bugs.uah.ualberta.ca

**Where are we?** Medical Microbiology & Public Health (Department of Medical Microbiology & Immunology, University of Alberta) - WWW Home Page

### What's there?

**Bugs on the Web.** Microbiological characters of distinction.

**The Virtual Lab.** Departments that make up the Alberta Provincial Laboratory (PLNA).

**The Virtual Classroom.** Online tutorials.

**Epage.** Email & Phone Directory.

**Other** World Wide Web resources.

**Regional Microbiology Profiles.** Updated to 30-Apr-1996

**Guest Page.** Stay healthy with these tips from health professionals.

### Where does it link to?

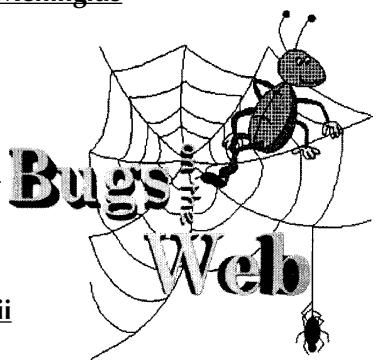
**(1) Health Related Sites** - including health institutions, microbiology related sites and journals (soon to be running)

**(2) Network Information**

### Special Attraction: Bugs on the Web...

This page features articles on various facets of microbiology. Each subsection includes a variety of definitions, clinical information, lab tests, references and quizzes. The articles are easy to read and informative, and the page is updated regularly.

**Enterovirus & Viral Meningitis**
**E. Coli 0157:H7**
**Helicobacter pylori Urea Broth**
**Hepatitis C Virus**
**N. gonorrhoae (GC)**
**Human Parvovirus**
**M. Tuberculosis case studies**
**Pneumocystis carinii pneumonia (PCP)**




### Overall rating:

This site is so full of information, you could easily spend at least an hour delving into the world of microbiology. It is very friendly, easy to navigate within, and provides the user with a variety of links to other microbiological and network sites.

### Any roadblocks?

This site is still under construction, and things seem to change almost daily. It is worthwhile to keep checking back because you're sure to continually find new information and features.

# Listings for HIV/AIDS Information Lines

## 1. Nunavut AIDS Information Line (Eastern Arctic)

**1-800-661-0795 In Iqaluit: 979-0520**
**(403 & 819 exchanges, *effective June 11, 1996)***
**Hours of Operation: 7 - 11:00 p.m.**

## 2. Help Line & AIDS Information Line (WesternArctic)

**1-800-661-0844 In Yellowknife: 920-212**
**Hours of Operation: 7 - 11:00 p.m.**
***(effective June 1, 1996)***

**Note:**

- **The 403 exchange includes the Kitikmeot region, western NWT, Yukon, northern British Columbia and northern Alberta.**
- **The 819 exchange includes the Keewatin and Baffin regions and northern Quebec.**

# Measles Elimination Program Update

## Around the NWT

Around the NWT, the mass vaccination program using MR (Measles-Rubella) which began in April has been going well. As of the end of June 1996, the Health Protection Unit received the following reports from the regions:

Overall, there has been good participation in the program, with many communities reporting 100% completion. At the Regional level completion ranges between 75-90%.

A few communities have had to put their programs on hold until September, when school resumes. Other communities have scheduled catch-up clinics for the 19 month to pre-school age group. It is anticipated that the program will be completed across the Territories by early October. Everyone who has been involved with the program deserves recognition for their efforts. Well Done!!!

Here's a look at what's happening across the country...


## Around Canada

| Province | Program 2nd MMR | Program Catchup | | Reports of Measles-1996 (to July 13th) |
|---|---|---|---|---|
| **NWT** | 18 months | 19 months to Grade 12 | MR | **0** |
| **Yukon** | 18 months | Grades 1-12 | M | **2 (1 imported)** |
| **BC** | 18 months | 18 mths to Gr.12 | MR | **36** |
| **Alberta** | School entry | No catchup | | **8 (6 imported)** |
| **Saskatchewan** | MR @ preschool | Grades 6-8 | MR | **3** |
| **Manitoba** | School entry | Prim. grades | MR | **0** |
| **Ontario** | School entry | Ktg to Gr. 13 | M | **178** |
| **Quebec** | 18 months | 19 months to Grade 12 | M | **57 (2 imported)** |
| **New Brunswick** | No 2nd dose | No catchup | | **0** |
| **Nova Scotia** | School entry | No catchup | | **2** |
| **PEI** | School entry | Gr. 1 to 12 | M | **0** |
| **Newfoundland** | 18 months | No catch up | | **0** |

**Total: 286**

## Tradition Knowledge/ Medical Knowledge Retreat

**August 2-8, 1996**

**Iqaluit, NWT**

**For further information regarding this exciting retreat contact:**

***Vicki Robillard (403)920-3418***
***or***
***Paula Lessard (403) 873-9253***

***Sponsored by:***
***Nunavut Tunngnavik Incorporated***

## IMMUNIZING FOR HEALTH: ACHIEVING OUR NATIONAL GOALS

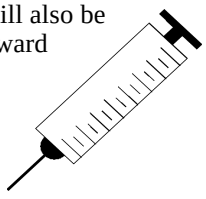
***The Royal York Hotel, Toronto, Ontario***
***December 8-11, 1996***

**Objectives**: To present a forum for discussion and information exchange related to the practical aspects of immunization programs in Canada.

This will cover issues such as:

- Vaccine supply
- Regulations and Legislations
- Global Immunization Efforts

The conference will look at both programmatic issues. The main focus will be on childhood immunization. There will also be an examination of progress toward the achievement of recently established Canadian national goals for the reduction of vaccine-preventable diseases of infants and children.



## Canadian National Immunization Conference:

**To receive a Registration Package/ Abstract Submission Form contact:**

Mr. Chuck Schouwerwou, BA,CMP
Conference and Committee Coordinator
Division of Immunization, Bureau of Infectious Diseases
LCDC, Health Canada
P.L. 0603E1, 3rd Floor, LCDC Building
Tunney's Pasture,
Ottawa, ON, K1A 0L2
Fax: (613) 998-6413

# Notifiable Diseases by Region for May and June 1996

| | DISEASE | Month | Cumulative | | Regions (YTD - 1996) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | May & June 1996 | 1995 YTD | 1996 YTD | Baffin | Fort Smith/ Mackenzie | Inuvik | Keewatin | Kitikmeot |
| Vaccine Preventable Diseases | H. influenzae B | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 0 |
| | Measles | | | | | | | | |
| | Mumps | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| | Pertussis | 4 | 4 | 11 | 5 | 2 | 0 | 4 | 0 |
| | Rubella | | | | | | | | |
| Enteric Diseases | Amoebiasis | 0 | 1 | 0 | | | | | |
| | Botulism | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| | Campylobacteriosis | 5 | 8 | 12 | 1 | 10 | 0 | 1 | 0 |
| | Clostridium/Perfringens | | | | | | | | |
| | E.Coli 0157:H7 | | | | | | | | |
| | Food Poisoning | | | | | | | | |
| | Giardiasis | 1 | 15 | 10 | 2 | 3 | 0 | 4 | 1 |
| | Salmonellosis | 3 | 5 | 9 | 0 | 4 | 1 | 3 | 1 |
| | Shigellosis | | | | | | | | |
| | Tapeworm Infestation | 0 | 1 | 0 | | | | | |
| | Trichinosis | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| Sexually Transmitted Diseases | Chlamydia | 89 | 468 | 420 | 142 | 127 | 47 | 63 | 40 |
| | Gonnorhea | 18 | 69 | 59 | 38 | 11 | 3 | 1 | 6 |
| | Syphillis | | | | | | | | |
| Viral Hepatitis | Hepatitis A | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| | Hepatitis B | 3 | 2 | 4 | 1 | 3 | 0 | 0 | 0 |
| | Hepatitis C | 8 | 12 | 18 | 4 | 14 | 0 | 0 | 0 |
| | Hepatitis, Other | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| Other Systemic Diseases | Brucellosis | | | | | | | | |
| | Chickenpox | 196 | 521 | 367 | 43 | 298 | 1 | 6 | 19 |
| | Malaria | | | | | | | | |
| | Meningitis/Encephalitis | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 0 |
| | Meningococcal Infection | 1 | 0 | 2 | 0 | 1 | 1 | 0 | 0 |
| | Rabies Exposure | | | | | | | | |
| | Tuberculosis | 5 | 12 | 25 | 4 | 18 | 1 | 1 | 1 |

| HIV INFECTIONS BY YEAR SEEN IN NWT RESIDENTS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| YEAR | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 |
| NUMBER/YEAR | 3 | 2 | 2 | 3 | 3 | 8 | 4 | 2 | 0 | 1 |
| CUMULATIVE | 3 | 5 | 7 | 10 | 13 | 21 | 25 | 27 | 27 | 28 |

# Notifiable Diseases Reported By Community

## May 1996

**Campylobacteriosis, 2:** Hay River, 1; Yellowknife, 1.

**Chickenpox (varicella), 102:** Yellowknife, 46; Hay River, 35; Fort Resolution, 9; Hall Beach, 7; Gjoa Haven, 2; Inuvik, 1; Rankin Inlet, 1; Repulse Bay, 1.

**Chlamydia, 43:** Iqaluit, 8; Rae, 6; Pond Inlet, 5; Arviat, 3; Igloolik, 3; Clyde River, 2; Fort Providence, 2; Fort Simpson, 2; Hay River, 2; Arctic Bay, 2; Cape Dorset, 1; Fort Liard, 1; Fort McPherson, 1; Fort Resolution, 1; Gjoa Haven, 1; Pangnirtung, 1; Rankin Inlet, 1; Yellowknife, 1.

**Gonorrhea, 7:** Iqaluit, 2; Cambridge Bay, 1; Fort McPherson, 1; Pond Inlet, 1; Rankin Inlet, 1; Yellowknife, 1.

**Hepatitis B, 2:** In Yellowknife.

**Hepatitis C, 4:** Yellowknife, 2; Cape Dorset, 1; Iqaluit, 1.

**Meningitis/Encephalitis, 1:** In Arviat.

**Meningococcal Infection, 1:** In Rae.

**Pertussis, 2:** Igloolik, 1; Iqaluit, 1.

**Salmonellosis, 2:** Inuvik, 1; Rae, 1.

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**Tuberculosis, 2:** Hall Beach, 1; Yellowknife, 1.

## June 1996

**Botulism, 1:** In Bay Chimo.

**Campylobacteriosis, 3:** All in Yellowknife.

**Chickenpox (varicella), 94:** Yellowknife, 59; Fort Resolution, 16; Hall Beach, 6; Fort Simpson, 3; Hay River, 3; Fort Liard, 2; Fort Smith, 2; Arctic Bay, 1; Gjoa Haven, 1; Sanikiluaq, 1.

**Chlamydia, 46**: Iqaluit, 9; Yellowknife, 5; Baker Lake, 3; Inuvik, 3; Arviat, 2; Cambridge Bay, 2; Cape Dorset, 2; Chesterfield Inlet, 2; Hay River, 2; Kimmirut, 2; Pangnirtung, 2; Aklavik, 2; Clyde River, 1; Coral Harbour, 1; Deline, 1; Fort Good Hope, 1; Rae, 1; Gjoa Haven, 1; Igloolik, 1; Paulatuk, 1; Repulse Bay, 1; Sanikiluaq, 1; Wha Ti, 1.

**Giardiasis, 1:** In Hall Beach.

**Gonorrhea, 11:** Iqaluit, 5; Kugluktuk, 2; Broughton Island, 1; Cambridge Bay, 1; Inuvik, 1; Resolute, 1.

**Hepatitis B, 1:** In Iqaluit.

**Hepatitis C, 4:** Iqaluit, 2; Hay River, 1; Yellowknife, 1.

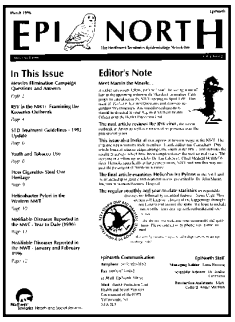
**Pertussis, 2:** Hall Beach, 1; Igloolik, 1.

**Salmonellosis, 1:** In Lac La Martre.

**Trichinosis, 1:** In Kugluktuk.

**Tuberculosis, 3:** Fort Smith, 1; Rae, 1; Taloyoak, 1.

Notifiable disease information reported in **EpiNorth** on a monthly basis reflects reports ***received*** in the ***Health Protection Unit*** during the current month, not the month in which the cases occurred. Health professionals who suspect or diagnose a Notifiable disease are required to report the disease to their ***Regional Medical Health Officer*** within the time frame legislated in the Publich Health Act/Communicable Disease Regulations.


EPI NORTH

In This Issue

Editor's Note

**EpiNorth** is a publication of the Health Protection Unit, Division of Population Health, Department of Health and Social Services.

**Contributions are welcome** and should be sent to the Managing Editor. Articles should be in WordPerfect format. Inclusion of material in **EpiNorth** does not preclude publication elsewhere.

Views expressed are those of the authors and do not necessarily reflect departmental policy.

# News Clips:


- *Cyclospora*
- *Wild Type Polio*
- *"Kombuca Mushroom" Tea Illness*


## Outbreaks Related to Cyclospora:

The parasite *Cyclospora* is a newly recognised infectious organism which causes acute gastroenteritis. As of July there have been 121 confirmed cases in Ontario, as well as several sporatic cases throughout Canada. There have also been outbreaks of *Cyclospora* infection identified in seven US states which is most likely associated with eating fresh, poorly-washed raspberries from Guatemala. Strawberries from California were initially implicated. *Cyclospora* outbreaks are often associated with water-borne transmission but this is believed to be unlikely in these particular outbreaks. *Cyclospora* infection is not a reportable disease, cases can be investigated as possible cases of food poisoning as they may be food related.

***What is Cyclospora?*** *Cyclospora cayetanensis* is composed of only one cell and is only eight to ten microns in diameter. The first known cases of infection were diagnosed in 1977. Cases have been reported with increased frequency since the mid-1980's, in part because of the availability of better techniques for detecting the parasite in stool samples.

***How is Cyclospora Transmitted?*** The parasite appears to be waterborne, transmitted through the fecal-oral route. In contrast to many other organisms, *Cyclospora* is not infectious at the time that it is excreted in the stool of an infected person. In fact, the organism does not become infectious until days to weeks after it is excreted. Therefore, transmission of *Cyclospora* directly from an infected person to someone else is unlikely. Indirect transmission may occur if stool from an infected person contaminates something in the environment and has time to become infectious.

***What are the Symptoms of Infection?*** *Cyclospora* infects the small bowel and typically causes an illness characterized by watery diarrhea with an average of 6-7 stools a day. Other symptoms include loss of appetite, weight loss, bloating, increased flatus, stomach cramps, nausea, vomiting, tiredness, muscle aches and a low grade fever. The length of time between becoming infected and developing the symptoms is several days to a week.

***How is the Infection Treated?*** Recommended treatment is with trimethoprimsulfa-methoxazole. Infected persons with diarrhea should drink plenty of water and rest.

## Wild Type of Polio Isolated in Hamilton

On March 8, 1996, a local pediatrician reported to the Hamilton-Wentworth Department of Public Health Services that polio type 1 had been isolated from a stool sample from a 15 month old boy. The polio isolate was submitted to the National Enterovirus Laboratory in Halifax, and typed as a strain type 1 poliovirus. No cases of paralytic polio have been associated with this occurrence in Ontario. The toddler had returned from a 3 month stay in India with his parents 2-3 weeks earlier. He developed diarrhea and weight loss shortly after his return to Canada, and a stool specimen was submitted for culture. The child had no other symptoms. Cryptosporidium was also isolated from the stool and was thought to be the cause of the diarrhea, with the poliovirus being an incidental finding. The diarrhea was resolved within a month of onset.

The child was up to date with his immunizations, and had received IPV at 2, 4, and 6 months of age. While in India, the child's mother was had been advised to give the oral polio vaccine, which she had refused. It was unclear whether this was offered as a part of a mass immunization campaign or due to known cases of polio in the area which they were visiting. Both parents were encouraged to see their family doctor to update their immunizations. There are no siblings. Other contacts in the extended family, including diaper changing contacts, were also directed to their family physicians to update their immunizations.

## Possible "Kombuca Mushroom" Tea Illness: Canada and USA

Four cases of possible homemade "mushroom tea" poisoning have been reported in the US (2) and Canada (2) since April, 1995. In April 1995, a 59-year-old woman in Iowa, admitted to hospital with DIC, and heart failure, died. The following week another unrelated woman, aged 48 was admitted with respiratory distress, but later recovered. The mushroom used in both cases originated from the same source. Both patients had severe metabolic acidosis with uncompensated respiratory acidosis and elevated levels of lactic acid.

The second two cases of suspected tea-associated illness occurred in a family in Ontario in December, 1995. Symptoms suggestive of severe metabolic disorder culminated in renal and liver failure and death in one patient. The second case recovered after treatment in hospital for bleeding from mouth and nose. The mushroom in this incident had been passed around the local community.

This "Health Drink" is made by fermenting black tea and sugar mix for several days with a "mushroom" (a symbolic mat of yeast and bacterial species). The product, called Kombucha, Kargasok, or Manchurian tea is credited with a number of beneficial health effects. The sharing of the mushrooms and method of culture leave open the potential for contamination of the product. The tea is acidic and could leach toxins, including metals from containers.