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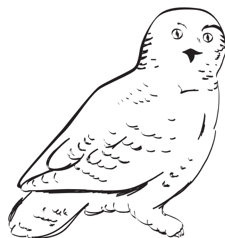

The Northwest Territories Epidemiology Newsletter

Summer 2000 | Vol 12, Issue 2

Personal Health Practices – Personal Choice
Page 2

Westnet Telehealth
Page 5

Eleventh International Congress on Circumpolar Health
Page 7

Varicella Immunization Program
Page 8

NWT Certification of Immunization Competence Program
Page 9

Hospital Utilization of NWT Children with Fetal Alcohol Syndrome
Page 11

Northern Foster Care – Challenges and Triumphs
Page 12

Women's Nutrition: Important in the Childbearing years
Page 13

Fall Vaccine Programs
Page 16

Conferences/Workshops
Page 18

health.online
Page 19

Notifiable Diseases by Territory and Region
Page 20

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Investment in Children, an Investment in our Future

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The first infants of the new millennium have already been born, and will start entering the workforce by 2016, becoming the prime wage earners, parents, leaders and decision-makers for the Northwest Territories (NWT) in the decades that follow. By then, our progress as a society will be in their hands. It is our children who will determine the health and prosperity of the NWT in the coming decades.

Will they be ready to assume the challenges they face, will they be healthy and well educated, and will they be capable and responsible citizens? The answers to these questions depend, in large part, on our ability to provide a sustained investment on child-focused social, educational and health programs. Just over a year ago an important report was published, indicating how critical the early years of life are to a child's development. The *Early Years Study*[1] makes a compelling case to show that a child's experiences in the first six years of life have an influence that lasts a lifetime. According to the study, the early years of life are a critical period for brain development and, they "set the base for competence and coping skills that will affect learning, behaviour and health throughout life."

The *Early Years Study* demonstrates the importance of several prerequisites for healthy human development: proper nutrition for brain development; attention and nurturance for emotional development; intellectual stimulation for cognitive development. The study persuasively argues that these conditions should be provided within the appropriate timeframe or window of opportunity. Failure to do so can cause life-long diminished potential.

The study supports the idea that an investment in children is an investment in the future, and that the earlier the investment the greater the benefit. Few people would argue against the position that investments in education, health care and economic development are necessary for the development of the NWT and its people. It is also imperative that we make the same argument regarding investment in our children, especially the youngest of those children.

It is a truism that we hold the future of today's children in our hands. What is also true, although possibly less apparent, is that today's children will soon hold our future in *their* hands. If nothing else motivates us to recognize our obligation to children, perhaps that sobering thought will do the trick.

[1] Early Years Study, Government of Ontario, 1999 available at: http://www.childsec.gov.on.ca/

This article is adapted from Chapter 6 of *The NWT Health Status Report* (1999). A complete copy of the Report may be downloaded from the Health and Social Services website (http://www.hlthss.gov.nt.ca/publicat.ht). Copies can be requested from the Department's Planning and Communications Unit, Tel (867) 920-8927.

F E A T U R E   A R T I C L E

Personal Health Practices – Personal Choice

Research & Analysis Unit
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Personal choices and lifestyle play a major role in determining individual health and well being. Most of us know that regular exercise and proper nutrition are conducive to good health, and that smoking and alcohol abuse are not. While both good and bad 'habits' are usually a matter of choice, it is important to keep in mind social circumstances can heavily influence the choices people view as reasonable or desirable. Circumstances that tend to influence life decisions and opportunities have been well documented in the sociological literature, and include educational attainment, income, occupation and culture. All these variables can play a direct or indirect role on personal health practices.

Although institutional forces do exert variable influence on the health status of groups within a given society, it is also true that individuals can exert significant self-determination through their personal choices. The themes presented here are fundamental to personal health, yet touch upon the health of the population as a whole. Topics such as physical activity, body weight, alcohol use and breast-feeding are examined. A discussion of tobacco use is not included in this edition of *EpiNorth* because tobacco has been well discussed in recent issues. The behaviours of women during and shortly after pregnancy is also discussed. The intention is not to single out expectant mothers, rather to demonstrate the importance of healthy pregnancies.

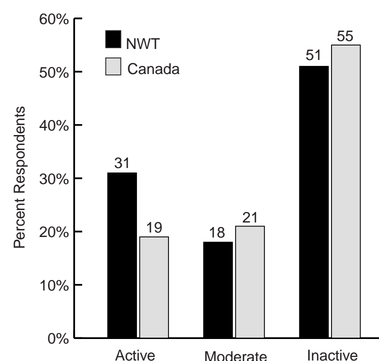
Physical Activity and Body Weight

The National Population Health Survey provides an extensive examination of physical activity.[1] People surveyed were asked about the activities they participated in, and the frequency of that participation. From the responses, Statistics Canada was able to approximate daily caloric expenditure. On that basis people were grouped into three categories of activity: active, moderate and inactive.

The decision to be more physically active can substantially lessen the personal risk of morbidity associated with obesity, diabetes, heart disease, hypertension, osteoporosis and many other diseases. It is also well accepted that regular physical activity increases self-esteem, self-confidence and overall mental health.

Active people were those surveyed who exercised enough to receive cardiovascular benefits. Those considered to experience *moderate* activity might experience some health benefits but little cardiovascular benefit. People classified as *inactive* are more likely to suffer adverse health effects over the longterm.

Figure 1
Level of Physical Activity – Northwest Territories/Canada



Source: 1994/95 National Population Health Survey, GNWT Bureau of Statistics.

The Northwest Territories, for all ages, scored significantly higher than Canada with regard to the proportion of active people (Figure 1). Thirty-one per cent of NWT residents were considered active, compared to 19% nationally. However, 51% of NWT residents were considered inactive, which is close to the national average of 55%.

One might expect the differences in physical activity to be related to the differences in age structure between the NWT and Canada. However, when examined across age groups, the differences are consistent.

Almost half of the NWT population age 12 - 24 were considered active, compared to 31% nationally (Table 1). For people age 65 years and over, 21% were active in the Northwest Territories, compared to 14% nationally.

Table 1
Physical Activity Levels by Age Group – Northwest Territories/Canada

	Age	Active	Moderate	Inactive
NWT	12 to 24	48.0%	16.1%	36.0%
	25 to 44	23.7%	20.4%	55.9%
	45 to 64	23.5%	19.2%	57.3%
	65 & Up	20.8%	5.3%	73.9%
	Total	30.9%	18.4%	50.7%
Canada	12 to 24	31.0%	22.2%	37.4%
	25 to 44	15.6%	21.0%	59.0%
	45 to 64	15.3%	20.7%	59.1%
	65 & Up	13.8%	18.4%	60.6%
	Total	18.6%	20.8%	54.6%

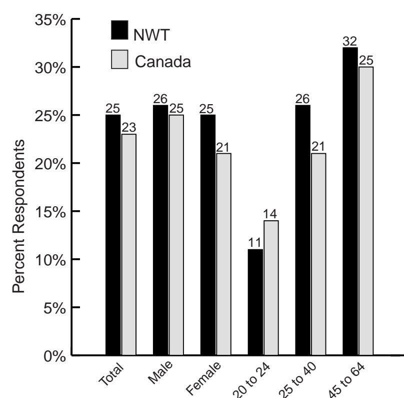
Source: 1994/95 National Population Health Survey, GNWT Bureau of Statistics.

In all age categories but one (65+) the NWT scored lower on the proportion of the population considered inactive. This may be related to the fact that NWT elders reported much higher levels of activity limitations than those surveyed nationally (see *NWT Health Status Report*, 1999:21).

In summary, these numbers suggest that relative to their neighbours to the south, Territorial residents take advantage of the recreational opportunities in the North, outdoor and indoor, summer and winter. Maintaining traditional activities, like hunting, trapping, fishing, and berry picking would also lead to a more active lifestyle.

However, the number of inactive people remains high, and may be rising. For example, when examining NWT residents by body weight, the results of the National Population Health Survey were not encouraging (Figure 2).

Figure 2
Adult Population Overweight – Northwest Territories/Canada



Source: 1994/95 National Population Health Survey, GNWT Bureau of Statistics

Slightly more territorial residents were overweight compared to the national average. This difference was consistent across gender and age groups, with the exception of those aged 20 - 24. In this age group only 11% of NWT residents were considered overweight compared to 14% nationally.

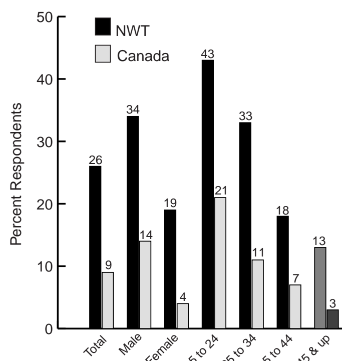
It is of interest to note that the Northwest Territories had a smaller proportion of its population, 5.6%, consider to be underwieght than the national average of 8.3%.

Alcohol Use

The abuse of alcohol, including the use of alcohol by pregnant women, is closely associated with a number of social and health problems. For the general population, short-term abuse of alcohol increases the risk of injury and death through violence and accidents. Longterm abuse of alcohol contributes to a greater number of health problems that often end in premature death. Other negative effects of alcohol abuse include its role in employee absenteeism and is a contributing factor to spousal abuse and family breakdown.

The consumption of five or more drinks at one time is an indicator of heavy or *binge* drinking. A 1996 survey asked respondents how many drinks they usually consumed when they drank.[2] As can be seen in Figure 3, almost three times the proportion of NWT residents, relative to Canadians as a whole, reported drinking 5 or more drinks on at least one occasion. The highest consumption was by young men age 15 - 24 in both Canada and the NWT. However, across gender and age groups equally, two to four times as many territorial residents consumed five or more drinks at a time compared to national averages.

Figure 3
Five or More Drinks at a Time – Northwest Territories/Canada, 1996



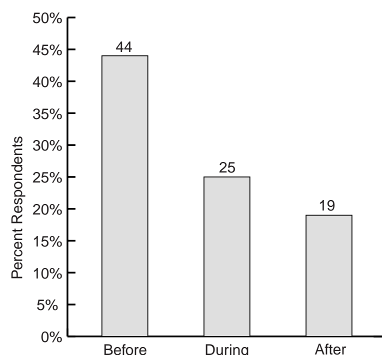
Source: 1996 NWT Alcohol and Drug Survey and 1994/95 National Alcohol and Drug Survey, GNWT Bureau of Statistics.

The use of alcohol by pregnant women can lead to a number of social and health problems. Drinking while pregnant places the fetus at risk of developing Fetal Alcohol Syndrome (FAS) or Fetal Alcohol Effects (FAE).

FAS is a medical diagnosis made on the basis of specific developmental abnormalities that can occur when alcohol is consumed during pregnancy. Some of the indications of FAS include brain damage, developmental delays, behavioural problems and learning difficulties. FAE is used to describe cases where only some of the characteristics of FAS are present in a child or fetus that was exposed to alcohol during gestation. National estimates on the incidence of FAS or FAE in Canada are not available, nor are there records for the NWT (see article on FAS in this issue). However, there are some indications of the potential numbers through surveys of the habits of pregnant women.

In 1993, a survey on breast-feeding was conducted throughout the Northwest Territories.[3] The survey asked women whether they consumed alcohol before, during and after their pregnancy. The results are presented in Figure 4.

Figure 4
Alcohol Use – Before, During & After Pregnancy – Northwest Territories, 1993



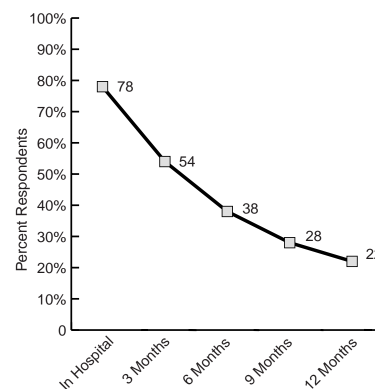
Source: 1993 Breastfeeding Survey, Department of Health and Social Services.

Nearly 25% of women surveyed reported drinking while they were pregnant. The survey results do not detail the amount of alcohol consumed, nor do they translate into 25% of births having FAS or FAE. However, given that research has yet to show that there is a safe level of alcohol that can be consumed while pregnant, it may indicate that a high proportion of pregnancies are at risk for an FAS/FAE outcome.

Breastfeeding

The World Health Organization (WHO) recommends that for the first four to six months of life infants should receive only breast milk. Moreover, after six months of age, and up to two years or more, children benefit from continued breastfeeding as a supplement with other foods. The Northwest Territories falls short of the WHO ideal for breastfeeding.

Figure 5
Percentage Breastfeeding – From Birth to Twelve Months



Source: 1993 Breastfeeding Survey, Department of Health and Social Services.

As can be seen in Figure 5, almost 80% of NWT mothers surveyed reported breastfeeding while in the hospital. By three months, however the rate of breastfeeding had declined to 54% and to less than 40% by six months.

Although the data from the Northwest Territories Breastfeeding Survey is now seven years old, it demonstrates that the choice to breastfeed is one that we should encourage and support in order to give children an optimal start in life.

1 1994/95 National Population Health Survey, GNWT Bureau of Statistics.

2 Northwest Territories Alcohol and Drug Survey, GNWT Bureau of Statistics, 1996.

3 Database on Breastfeeding: Survey of Infant Feeding Practices from Birth to Twelve Months, Department of Health and Social Services, 1996.

Westnet Telehealth

Mary Deans,
WestNet Telehealth Coordinator
Stanton Regional Health Board

The Government of the Northwest Territories currently funds WestNet Telehealth in order to improve accessibility to health and social services across the North. As WestNet expands to include more communities, and as users gain experience, Telehealth will assume an even greater role in the Northwest Territories (NWT) healthcare system. A brief description of the NWT will set the stage for understanding the potential of Telehealth to support a more equitable provision of health and social services in the north.

The NWT covers 1.2 million square kilometers, stretching from the 60th parallel to the Arctic Ocean. The population of approximately 42,000 people is culturally diverse: 28% Dene; 10% Inuit; 9% Métis; and 52% are non-Aboriginal. The sparsely populated territory is scattered throughout thirty-two communities, ranging in size from approximately forty to more than 17,000 people. Many of the communities are accessible by air only, some are accessible by road seasonally, and others by all weather road.

In most communities, health care (primary/emergency) and social services are provided by a team of community health nurses and social workers, as well as visiting healthcare providers. Currently, when nurses require consultation with physicians in regional centres they use the telephone. As Telehealth expands to include remote health centres, the ability to access physician support with an audio/video link will be of great assistance in urgent/emergent situations.

Since it is not feasible to provide all medical and social services in every NWT community (including the regional centres), our system relies heavily on travel. In instances where necessary services are not available locally, historically there have been two choices: transport patients to providers or transport providers to patients. While either choice ensures that Northerners have access to necessary services, this approach has obvious disadvantages:

- travel for diagnosis or treatment often means a delay in accessing the service;
- patients must be away from the support provided by friends and family at home, often for extended periods;
- the cost of providing service in this manner is substantial.

Each year in the NWT, there are over 350,000 encounters between patients and health or social service professionals. This includes client visits to community health nurses, social workers, general practitioners and specialists. Until recently, all of these encounters have been face-to-face. The introduction of Telehealth technology now allows some of these encounters to take place at a distance. This digital capability will help reduce dependence on travel, and will provide a more timely service to northern residents.

WestNet Telehealth began providing service on June 1, 1998. As of May 31, 2000 the system has facilitated the following 'remote location' services: 620 patient encounters; 29 urgent/emergent x-ray transmissions; 38 continuing education sessions, with over 180 participants; 54 medical grand rounds; and 95 trials/orientation/education sessions. In addition to regularly scheduled services, WestNet Telehealth provides *ad hoc* and urgent/emergent health services and educational services.

Currently, Stanton Regional Health Board (SRHB) in Yellowknife, Fort Smith Health Center (FSHC) and Inuvik Regional Health & Social Services Board (IRHSSB) are the NWT sites using Telehealth. The three sites have linked with facilities in Edmonton, Calgary, Saskatoon, Toronto and Hamilton for clinical and educational purposes.

To date, regularly scheduled service offerings from SRHB to IRHSSB and FSHC include Orthopedic, Internal Medicine, Ear Nose and Throat (ENT), and diabetic education sessions to FSHC. Psychiatry services are scheduled on an ongoing basis from IRHSSB to Edmonton, and monthly dialysis patient conferences from SRHB to Edmonton. Urgent/emergent radiology consults are provided as requested. The *ad hoc* sessions include Dermatology, Gerontology, Speech Therapy, Occupational Therapy and Physiotherapy, as well as biomedical service requests.

WestNet Telehealth was involved in a successful Telementoring trial from SRHB's operating room to Calgary, which illustrates the potential of this system in terms of mentor assistance with new services. Telehealth provides a medium for continuing education sessions for professional development for healthcare providers. It is also used for public health promotion activities (for example, the cancer drama presentation 'Handle with Care'), for patient/family visitation (to reduce the sense of isolation during crucial periods), and for committee/conference work.

The use of Telehealth, as an integral part of our northern health system, is expected to grow steadily as more communities are connected over the next five years. As the technology expands we will increasingly realize the key advantages of Telehealth: improved access to healthcare; improved timeliness of care; reduced cost of medical travel; improved management of urgent/emergent care; and improved access to continuing education.

Eleventh International Congress on Circumpolar Health

Dr. Penny Sutcliffe,
Regional Medical Health Officer
Stanton Regional Health Board

Haratad, Norway

June 4 – June 9, 2000

Just below the 70th parallel and at approximately the same latitude as Tuktoyaktuk, the city of Harstad, Norway hosted this year's International Congress on Circumpolar Health.

Nicknamed the "Millennium Congress", the meeting focused on "the changes in culture and physical environment and their impact on the livelihood, cultural integrity and health for all peoples, including the indigenous people inhabiting the circumpolar countries."

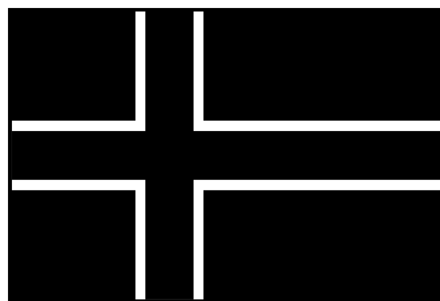
These triennial congresses present an opportunity for people concerned with the health issues of circumpolar regions to meet and share community health and medical research information. Congress programs typically span a broad range of issues. The June Congress concurrent sessions ranged from health promotion/education to basic science research on cold exposure and related injuries. Emerging diseases in circumpolar peoples were discussed, as were the impacts of social/cultural change on the health of circumpolar indigenous peoples.

The congress address was delivered by Ole Henrik Magga, a former leader of the Sami Parliament. The Sami Parliament is advisory to the Norwegian government and is particularly noteworthy in its relevance to people of the Northwest Territories. (Sami are the largest ethnic minority in Norway). In his address, entitled "The right to health for indigenous peoples - the Sami example", Magga maintains that the right to health is about more than the right to medical care; self-determination, including control over physical environments, dignity, community self-esteem and justice are all components of Aboriginal peoples' concept of health. Magga described the Sami Parliamentary system, which is working towards the development of a health and social services system that respects Sami culture, language and concepts of health. He highlighted the important role of Sami nurses, doctors and social workers in the successes achieved so far. The Norwegian model presents interesting options for consideration in the NWT as land claims and self-government negotiations progress.

It is obvious that the people of the circumpolar region experience many similar health challenges. Several presenters described communicable disease challenges that are prevalent also in the NWT. For instance, influenza and respiratory disease outbreaks were topics of presentation, as was the struggle with tuberculosis in many communities. In a presentation on "Rapid socio-cultural change in health in the arctic", Peter Bjerregaard of Copenhagen's National Institute for Public Health reviewed historical examples of the impact of colonization of circumpolar peoples, including the tragic association between colonization and measles, smallpox, influenza and bubonic plague epidemics.

In addition to communicable diseases, circumpolar peoples experience similar chronic disease challenges. Loss of traditional diets, sedentary lifestyles, the availability of alcohol and tobacco, and reliance on the wage economy have all contributed to health problems including diabetes, alcoholism and mental illness. Presentations were made on these subjects by Russian, Canadian, Norwegian and Danish delegates.

While the International Congress is an excellent opportunity for scholarly information exchange, it is also a wonderful environment for cultural exchange. Sami vocalists, Norwegian musicians and a traditional sail schooner helped Congress participants to appreciate the warm people and spectacular land of circumpolar Norway. *Tak and vennlig hilsen* to our new friends of *Nord-Norge*! [Thank you and warmest regards to our new friends of north Norway.]



Varicella Immunization Program

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Department of Health & Social Services

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Department of Health & Social Services

Amy Morse,
Projects Officer
Department of Health & Social Services

Infection by the highly contagious varicella-zoster virus (VZV) is often considered a benign event. Primary infection results in chickenpox, a disease that most people contract during childhood, usually before age ten, and often without sequelae. The lifetime risk of developing varicella is approximately 95%. After infection the virus persists in a latent form, and if reactivated results in Herpes zoster ("Shingles"); the lifetime risk of at least one reactivation is 15 to 20%.

Epidemiological evidence indicates that infection with VZV is associated with significant morbidity and mortality, especially in at-risk groups, including immunocompromised people, infants, adolescents and young adults. Although the lowest incidence of complications from primary infection is found in healthy children, varicella is nevertheless the main cause of death due to vaccine preventable diseases in Canadian children less than ten years of age.[1]

Although children aged up to twelve years account for approximately 90% of all Canadian varicella cases[2], 70% of reported deaths (37 of 53) due to varicella from 1987 through 1996 were in adolescents and adults (> 15 years of age).[3] In the Northwest Territories (NWT), two cases of varicella encephalitis have been reported in the last three years, one of which was fatal, and several cases of cellulitis, secondary to varicella infection, have required hospitalization.

Some of the severe manifestations of VZV infection can occur in developing fetuses and neonates when they are exposed to the virus in utero. One study quotes the following risks of varicella syndrome by gestational age at time of maternal infection:[4]

- infection prior to 13 weeks gestation - 0.4%
- infection between 13-20 weeks gestation - 2.0%
- infection after 20 weeks, risk thought to be slight, based on rarity of case reports

In addition, if the onset of varicella in the mother is between 5 days before and 2 days after birth, severe neonatal varicella may result, affecting 17% to 30% of exposed newborns[5] - with mortality rates reported as high as 30 percent.[6] Finally, second and third trimester maternal infection with VZV can lead to Herpes zoster infection in the infant.

Although NWT estimates of susceptibility to VZV are not available, a Canadian study encompassing a population of 3,643 pregnant women showed susceptibility rates of approximately 10% for ages 15-24, falling to 3.5% for women over age 40.[7] Susceptible individuals are potential sources of transmission should they become infected; this is of particular concern in the case of health care workers and pregnant women, because they are in intimate contact with high-risk groups.

With the recent licensing of varicella vaccine in Canada, there is now an effective way to reduce the public health risks from VZV. This has prompted the NWT Advisory Committee on Immunization to recommend implementation of a targeted varicella vaccination program. The program recommendations encompass all vulnerable health care workers who could have contact with immunosuppressed individuals and susceptible mothers after they give birth.

1 Proceedings of the *National Varicella Consensus Conference*, Montreal, Quebec, May 5-7, 1999:1.

2 Ibid.

3 *Canada Communicable Disease Report*: Vol. 25, May 1, 1999:5.

4 Enders, G. Varicella-zoster virus infection in pregnancy. *Prog Med Virol* 1984; 29:166.

5 *Canada Communicable Disease Report*: Vol. 25, May 1, 1999:2.

6 American Academy of Pediatrics. Summary of Infectious Diseases. In: Peter G, ed., *1997 Red Book: Report of the Committee on Infectious Diseases*, 24th ed., Elk Grove Village, IL: American Academy of Pediatrics; 1997:574.

7 Ratnam, S., Varicella seroprevalence in Canadian population. Presentation to *National Varicella Consensus Conference*, Montreal, Quebec, May 5-7, 1999.

Table 1.
Number of Reported Varicella Cases in NWT by Age Group, 1990-1999

	0-1	1-9	10-19	20-39	40+	Total
1990	24	166	12	4	0	206
1991	31	214	14	12	1	272
1992	8	67	10	1	1	87
1993	33	275	23	9	1	341
1994	17	140	9	5	0	171
1995	42	421	38	9	1	511
1996	46	344	14	17	2	423
1997	13	140	15	7	1	176
1998	36	438	40	15	4	533
1999	15	129	19	4	3	170
Total	**265**	**2334**	**194**	**83**	**14**	**2890**
Mean	26.5	233.4	19.4	8.3	1.4	289

Table 2.
Number of Reported Varicella Cases in NWT for 0-12 month age group, 1990-1999

	0-3	4-6	7-9	10-12	Total
1990	4	3	6	11	24
1991	11	8	8	4	31
1992	2	2	1	3	8
1993	10	13	5	5	33
1994	2	6	2	7	17
1995	11	16	10	5	42
1996	2	14	18	12	46
1997	1	6	4	2	13
1998	8	9	9	10	36
1999	1	5	4	5	15
Total	**52**	**82**	**67**	**64**	**265**
Mean	5.2	8.2	6.7	6.4	26.5

NWT Context

To provide a context to assess the relevance of introducing this program, the reported cases of varicella in the NWT (western territory) are presented in Tables 1 and 2.

- There have been no reported cases of congenital varicella syndrome in the NWT;
- From 1990-1999 there were five neonates reported with varicella at birth;
- From 1990-1999 there were ten reported cases of varicella in infants with onset date after birth but within the first thirty days of life.

As varicella is highly contagious and the sometimes crowded living conditions in the NWT facilitate transmission, one might expect few adults to be susceptible, and therefore few infants under 12 months should theoretically, acquire varicella due to passive antibody protection from their mothers. However, the statistics indicate that an annual average of 3.3% of an estimated 800-birth cohort annually is reported with varicella. The risk of infants acquiring varicella and of developing complications is not negligible in this population.

Since the effects of the vaccine on fetal development are not known, vaccination of susceptible pregnant women should be delayed until the postpartum period. It is also recommended that women avoid pregnancy for at least one month post-vaccination. In addition, since it is not known whether attenuated VZV vaccine is excreted in human milk and, if so, whether the infant could be infected, the product monograph advises caution in vaccinating lactating mothers. However, both Health Canada and the American Academy of Pediatrics (Red Book, 1997) suggest varicella vaccine can be considered in susceptible nursing mothers.

Determination of susceptibility to VZV infection can be accomplished through either an oral history or a varicella IgG assay (if necessary). It is recommended that employers bear the cost of vaccinating employees. The cost of vaccinating women post-partum will be publicly funded.

The NWT Advisory Committee on Immunization (NWT-ACI) recommends that:

- **All employees of hospitals who may have contact with immunosuppressed or other at-risk patients for severe varicella disease should have their immune status checked, and be offered immunization if they are found to be susceptible to Varicella-Zoster Virus (VZV);**
- **All prenatal women should be screened for varicella;**
- **All varicella susceptible women should be immunized with VZV vaccine post – delivery and that this program be publicly funded.**

NWT Certification of Immunization Competence Program

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Department of Health & Social Services

Marnie Bell,
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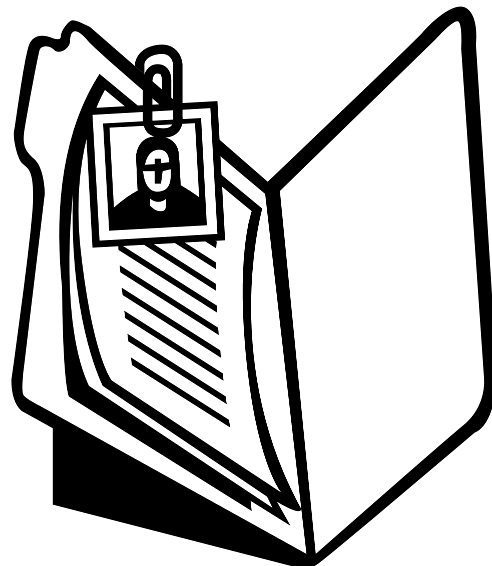
Department of Health & Social Services

The NWT Advisory Committee on Immunization has recommended that nurses practicing in the NWT should be certified before delivering vaccination programs, and that this certification be renewed every three years.

In response to the recommendation, the NWT Certification of Immunization Competence Program was initiated a year ago, with the aim of providing an ongoing standardized educational process to guide Community/Public Health Nursing immunization practice in the NWT. The program was designed in accordance with policies and procedures outlined in the Canadian Immunization Guide and NWT Immunization Schedule.

This program has been revised, as it will be annually, in order to keep abreast of the evolution of immunization standards and to incorporate feedback to improve the quality of the certification package. Since this program is intended to evolve and improve over time, it is important to provide feedback either to regional nurse managers or the Communicable Disease Consultant with the Department of Health and Social Services. To assist with future modifications, attention should be paid to providing input on the clarity and usability of the document. [A big thank you to those of you who provided feedback for the most recent revision process. You will see the benefits in the revised program. We appreciate your support and look forward to your continued participation.]



Hospital Utilization of NWT Children with Fetal Alcohol Syndrome (FAS)

Nicole Chatel, Paediatrician
Stanton Regional Hospital

Fetal alcohol syndrome (FAS) is a permanent, disabling, yet completely preventable, birth defect caused by prenatal exposure to ethanol. FAS is associated with an increased mortality rate, and significant morbidity from impairments in growth and in physical, intellectual and behavioral functioning.

In September 1998, a study of health care utilization by 194 Saskatchewan-born patients with FAS was published.[1] The authors reported significantly higher hospitalization rates among children diagnosed with FAS relative to control groups. The report prompted a similar review at Stanton Regional Hospital, in which inpatient and outpatient hospital utilization by NWT children diagnosed with FAS was examined.

The study population included 96 NWT children born between January 1, 1975 and April 1, 1999 who were diagnosed with FAS by the author or, in the occasional case, by another pediatrician. The hospitalization records of these children were matched against those of 96 randomly selected NWT children of the same ethnic origin, age, sex and basic size of community. The relative incidence of hospital utilization between October 1995 and May 1999 was recorded by the Health Record Department at Stanton Regional Hospital.

Of the 96 patients diagnosed with FAS, there were 53 boys and 43 girls. These included 72 Dene, 7 Métis, and 17 Inuit. These children came from a variety of regions: 5 from Yellowknife, 24 from the Dogrib region, 20 from the Inuvik region, 25 from the Deh Cho, 12 from the Fort Smith/Hay River area, and 10 from the Kitikmeot. One child had died as a newborn. Several of the children were not residing with their birth parents at the time of the review; of those with a known placement outcome, 22 were adopted, 25 have been in foster care and one is in extended care in a hospital.

Outpatient services utilized by the children with FAS included Surgical/Medical/Pediatric Daycare, Emergency Unit, Laboratory, Diagnostic Imaging, Dietary, Respiratory, Psychiatry, Occupational Therapy, Physiotherapy, Speech Language Pathology.

Results of the analysis indicated that children with FAS had significantly greater utilization of hospitals than the control group: they were twice as likely to be inpatients as the control group (41 vs. 19); they had more frequent involvement with the Pediatric Rehabilitation Team (85 vs.12); they were more likely to use Emergency Room services (167 visits vs. 104 visits), Laboratory services (64 vs. 15), Diagnostic Imaging services (34 vs. 15), and Psychiatry services (3 vs. 0). Daycare encounters, however, were similar between the two groups (26 vs. 20).

Children with a diagnosis of FAS have a significant increase in the utilization of both inpatient and outpatient services at Stanton Regional Hospital. This conclusion reinforces the need for effective preventative efforts throughout the North.

[1] Loney, E.A., et al., Hospital Utilization of Saskatchewan People with Fetal Alcohol Syndrome, *Canadian Journal of Public Health*, September-October 1998: 333-336.

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Northern Foster Care – Challenges and Triumphs

Children and youth come into the foster care program in the Northwest Territories (NWT) in a number of ways, including voluntary agreements and placements which result from protection concerns. In the last decade we have seen a consistent increase in foster home placement. As well, an increasing prevalence of societal problems, including drug and alcohol addiction and broken homes, has coupled with a philosophical shift away from institutionalization to foster care utilization.

Over the past several decades, volumes have been written about abused, neglected and exploited children. Despite the resilience of children, research indicates that maltreatment early in life can result in deep and lasting psychological injury. Foster parents in the NWT have to deal with the fallout that can result from abuse. For instance, foster parents often care for children who have learned to distrust and who have an uncanny ability to thwart any attempt to help them. Many Northern foster parents must also face the challenge of living in isolated communities with few support services available.

In addition to these hurdles, expectations placed on foster parents have increased as our knowledge of the determinants of child well-being has evolved. Today's foster parent is the key member of a team of people dedicated to helping children and youth work through the problems associated with their admission to care. Other team members include the child's birth family (if still involved), Child Protection Workers, mental health professionals, teachers, and the community as a whole.

Foster care goes beyond simply providing a child with food, shelter and clothing. Though these are important requirements in any child's life, the 21st century foster parent is expected to be knowledgeable in various aspects of child development. For instance, foster parents should be able to recognize and respond appropriately to developmental delays, utilize evidence-based, positive discipline strategies and develop a child's ability to negotiate needs. A difficult but important role of foster parenting is to encourage a child's ability to communicate his view of the world and his place within it.

The NWT has a proud and committed group of foster families who open their hearts and homes to children in need. Currently there are approximately 250 children and youth in family foster care across the NWT. While some jurisdictions have an adequate supply of foster homes, most regions find it necessary to recruit new homes continuously. Having an adequate number of homes is crucial to matching children with families based on the child's needs, age, ethnicity and interests.

Proclaimed in 1998, The Child and Family Services Act, recognizes the importance of personal identity and culture to children and youth and mandates Child Protection Workers to seek appropriate extended family members as a primary placement resource. Thus, we have seen an increase in the number of extended family foster homes utilized by our Health and Social Services Boards.

We are currently witnessing a time of increased opportunity for foster parents in the NWT. Recently the Inuvik Regional Health and Social Services Board developed an orientation manual and facilitated a three-day training program for foster parents. Similar training initiatives have occurred in other jurisdictions. Additionally, for the past year the Yellowknife Foster Family Association (YKFFA), with funding from the Department of Health and Social Services, has maintained a toll free telephone support line, as well as provided a quarterly newsletter available to all foster families in the NWT. The toll free support line is the first of it's kind in Canada. The YKFFA will also host the next Canadian Foster Family Association Symposium, to be held in Yellowknife May 30th to June 3rd, 2001. The annual conference, focussed on training, will be held in the North for the first time. This will be a wonderful opportunity for foster parents to further develop skills, and to network with other foster parents from across the country.

Foster families in the NWT are the heroes of our child welfare system and should be admired and congratulated for the services they provide. Despite the hurdles they face daily, their love and shared commitment to children sustain them, and the examples of positive outcomes are endless. An anonymous quotation aptly describes their motivation to foster:

> *A hundred years from now it will not matter the sort of house I lived in, what my bank account was or the kind of car I drove, but the world may be different because I was important in the life of a child.*

Women's Nutrition: Important in the Childbearing Years,

Part II

This second in a series of articles in *EpiNorth*[1] reviews two additional risk factors for malnutrition that can affect women in the childbearing years: insufficient financial resources to purchase adequate food and poor knowledge of nutrition.

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Knowledge of Nutrition among Women in the Childbearing Years

Knowledge of nutrition among prenatal and breastfeeding women is not currently well documented in the Northwest Territories (NWT). Anecdotal reports by people working with NWT Canada Prenatal Nutrition Programs indicate that some women, especially those in smaller, remote communities, do not have a good knowledge of nutrition. For example, many women can identify "healthy" foods and "junk" foods, but are unaware of why one food is better than the other, what nutrients are contained in different foods, or why it is important to eat foods from each of the four food groups.

Socioeconomic Status and Nutritional Health

There is a well-established relationship between socioeconomic status and health. We know that health status within a population is correlated with income level, which in turn is related to education and employment. This seemingly self-evident relationship is complex, and will be examined here in the context of its possible effects on women's nutrition during the childbearing years, which is itself a strong determinant of health for both women and children. In the NWT, poor socioeconomic status is considered to be a risk factor for malnutrition in women.

- **Education**

  In 1996, approximately 35% of NWT men and women 15 years and older had less than a high school certificate.[2] The 1998-1999 Territorial Individual Client Questionnaire Summary Report indicated that 51.5% of NWT women supported by the Canada Prenatal Nutrition Program had less than 10 years of formal education.[3] Low educational attainment can affect employment and literacy levels, and can also impede the understanding of basic nutrition information found in written materials and on food labels.

- **Income**

  In 1996, the average personal income for NWT residents was $33,767. While significantly higher than the Canadian average of $26,554, this income is distributed unequally. The average income in Yellowknife was $41,482, the average income in the regional centres was $32,009 and the average income of all other communities was $22,447.[2] Low incomes in smaller communities make it difficult to purchase sufficient food to ensure adequate nutritional intake. This is particularly true for NWT women, who earn approximately two-thirds of what men earn.

  The unequal distribution of wealth within society is not unique to the NWT. The proportion of Canadian families with low incomes increased from 10.8% in 1989 to 14.5% in 1996. Nationally, the number of people using food banks has doubled since 1989. Twenty percent of Canadians with incomes below $25,000 report they cannot afford a healthy diet. Community food initiatives, such as collective kitchens, community gardens, food buying clubs, school-breakfast programs and lunch clubs have emerged to address issues of food security.[4]

- **Employment**

  Unemployment rates for NWT women increased from about 7% in 1981 to 10% in 1996, although the number of women in the labour force nearly doubled between 1981 and 1996.2 The number of women in the childbearing years of 15-44 who are unemployed is unknown at this time.

- **Income Support and Monthly Food Scales**

  Beneficiaries and dependants receiving Income Support are provided a funding allowance for food. In 1999, there was an average of 3,539 NWT beneficiaries and dependants who received Income Support.[5]

  The Department of Education, Culture and Employment uses geographical zones for determining food allowance rates. For example, as of August 1st, 1998, a family of four in Rae/Edzo received $629.00 per month according to their Monthly Food Scale; an individual received $194.00 per month.[6]

  For families without additional sources of income it may be difficult to maintain a healthy diet. Although some families are able to supplement their diet with traditional foods, this is dependent upon family circumstances. Since women are more likely than men to lack a reliable income of their own they are often more reliant on income support.

  High food costs in the North can make it difficult to obtain healthy store-bought foods. The following costs of foods in selected NWT communities indicate that the cost of basic, nutritious food items varies greatly and can be high. The effect on women's nutrition may be significant, particularly if store-bought foods are relied upon more than traditional foods.

"Natal" Allowances

In some provinces, prenatal and breastfeeding women are provided extra funding so they can buy additional foods needed to help support pregnancy and lactation. For example, in British Columbia, the Ministry for Children and Families provides a "natal" allowance of $35.00/month for 15 months (9 months pregnancy and 6 months post-partum) for pregnant women receiving Social Assistance. The Pacific Regional Office of Indian and Northern Affairs (INAC) also provides funding equivalent to $25.00/month for 15 months to pregnant/postnatal women living on reserve.[8]

In Saskatchewan, through INAC funding, First Nations women living in isolated areas can be provided a monthly allowance during pregnancy and lactation if a written recommendation is provided by a physician or public health nurse. This is considered to be a "special diet supplement" and, if recommended, provides an additional $42.00/month for pregnancy and $47.00/month for lactation.[9]

No additional "natal" food allowance is provided in the NWT for prenatal or breastfeeding women.

Table 1
Cost Comparison of Selected Food Items in NWT Communities [7]

Community	Yellowknife	Hay River	Rae	Inuvik	Tsiigehtchic	Holman	Ft. McPherson
Flour (10 kg)	$8.59	$8.99	$12.99	$14.99	$15.99	$27.78	$15.29
Bread (white/brown)	$1.35	$2.29	$1.99	$1.99	$1.99	$1.99	$2.19
Skim Milk Powder (500g)	$5.15	$4.45	$6.39	$7.29	$6.99	$9.75	$7.35
2% Milk (2L)	$2.45	$3.09	$2.95	$3.51	$2.39	$6.55	$3.69
Eggs (1 doz, large)	$1.97	$1.99	$2.59	$2.60	$2.75	$2.99	$2.99
Hamburger Meat (lean, 1 kg)	$6.49	$7.29	$6.69	$8.60	$9.00	$3.99	$3.99
Carrots (2 lb.)	$1.59	$2.19	$1.49	$3.79	$3.25	$4.43	$2.79
Oranges (1 kg)	$2.19 or $0.43 each	$2.65	$2.99	$4.82 or $0.90 each	$0.65 each	$0.92 each	n/a
Orange Juice (1 can frozen)	$1.49	$2.39	$2.99	$2.99	$2.79	$2.99	$2.99

Promoting Health and Nutritional Well-being

Programs and services, activities, strategies and policies to support basic food requirements of women in the childbearing years require further development. International literature strongly suggests that prenatal programs which focus on nutritional intervention can improve pregnancy outcomes, particularly in the case of low-income women. Maternal food supplements, coupled with individual nutrition counselling, have been shown to be effective in increasing the nutritional status of pregnant women and in improving birth outcomes.[4]

Health workers, at all levels, can help women experiance healthier pregnancies and improved birth outcomes. The following are some suggestions for consideration:

- Develop and promote an awareness of local services and programs that support disadvantaged women;
- Identify pregnant women who may be at risk for nutritional deficit. Refer at risk women to appropriate services and programs such as the Canada Prenatal Nutrition Program (CPNP). (In 1999/00, there were 21 CPNP programs in the NWT).
- Provide education, promotion and counselling in an innovative and and non-threatening manner.*
- Encourage decision-makers to promote territorial, regional and community-based policies and programs that protect the nutritional health of prenatal and lactating women.

1 Part I appeared in *EpiNorth*, Spring 2000, Vol. 12, Issue 1.
2 The *NWT Health Status Report*, Department of Health and Social Services, 1999.
3 Canada Prenatal Nutrition Program, Individual Client Questionnaire Summary Report, April 1,1998 - March 31, 1999, *Health Canada*.
4 Nutrition for a Healthy Pregnancy, National Guidelines for the Childbearing Years, *Health Canada*, 1999.
5 Bureau of Statistics, *GNWT*.
6 Department of Education, Culture and Employment, Income Support.
7 Food prices collected by Growing Together, Hay River; Dogrib Rae Band and IRHSSB between June 22 - July 6, 2000.
8 Information provided by the Pacific Region Nutritionist, First Nations and Inuit Health.
9 Information provided by the Saskatchewan Region Nutritionist, First Nations and Inuit Health.

* An innovative example is a game developed by Medical Services Branch entitled 'Nutrition Bingo with Native Foods.'

Fall Vaccine Programs

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Now that the longest days of summer are past, it is time to prepare for the coming fall vaccination programs. Summer is the time to review charts, determine target populations and prepare orders for Influenza, Pneumococcal and Hepatitis B vaccines.

For those who are new to these programs (or need a refresher), here is a quick review of the NWT/Nunavut recommendations for the Influenza, Pneumococcal and Hepatitis B immunization programs.

Influenza vaccine

Recommendations for the 2000/2001 Influenza season

The antigenic characteristics of the circulating and emerging influenza virus strains provide the basis for selecting the strains included in each year's vaccine. In Canada, the National Advisory Committee on Immunization (NACI) recommends the following combination of influenza vaccines for the 2000/2001 season:

- A/Moscow/10/99(H3N2) - like strain
- A/NewCalidonia/20/99(H1N1) -like strain
- B/Bejing/184/93 -like strain.

In the NWT/Nunavut the vaccine should be offered free of charge to the following risk groups:

- adults aged 65 years and older in the NWT;
- adults aged 50 years and older in Nunavut (the lowered age criteria in Nunavut is in response to greater prevalence of respiratory illness);
- adults and children with chronic cardiac or pulmonary disorders (including bronchopulmonary dysplasia, cystic fibrosis and asthma) severe enough to require medical follow-up or hospital care;
- adults and children with chronic conditions such as diabetes or other metabolic diseases, cancer, immunodeficiency (including HIV infection), renal disease, immunosuppression, anemia and hemoglobinopathy;
- persons of any age who are residents of nursing homes or other chronic care facilities;
- children and adolescents (aged 6 months to 18 years) with conditions treated for long periods with acetylsalicylic acid (ASA therapy may increase the incidence of Reyes Syndrome after influenza);
- persons at high risk of influenza complications who have trips planned to destinations where influenza is likely to be circulating.

Influenza vaccine should also be actively promoted and offered to:

- health care workers and other caregivers who may transmit the virus to those at risk; *(NB: Studies of health care workers report low coverage rates (26%-61%). In most reviews of institutional Influenza outbreaks, unimmunized health care workers is the leading factor that contributes to outbreak activity.)*
- people who provide essential services to the community (e.g., firefighters, police officers);
- household contacts of high risk individuals (including children of parents who either cannot be vaccinated or may not respond to vaccination).

Members of the general public (including children) should also be provided access to the influenza vaccine on a cost-recovery basis, once appropriate supplies have been secured for priority groups.

Annual immunization is required because there is constant change in the vaccine response to antigenic drift. As well, immunity declines quickly in the year following vaccination. Each 0.5-ml of the vaccine will contain 15 µg of hemagglutinin of influenza specific antigen. The vaccine is available as a split-virus (chemically disrupted) preparation. Protection from the vaccine generally begins 2 weeks after immunization and may last longer than 6 months. In the elderly, however, antibody levels can fall below protective levels in less than 4 months. October to mid-November is the recommended time for influenza vaccination.

Health care workers should use every opportunity to give the vaccine to individuals at risk who have not been immunized during the current season, even after influenza activity has been documented in the community.

Pneumococcal Vaccine

Pneumococcal vaccine should be offered free of charge to the following groups:*

- adults aged 65 years or older in the NWT;
- adults aged 50 years or older in Nunavut (the lowered age criteria in Nunavut is in response to the increased prevalence of respiratory illness);
- adults with chronic conditions: cardiac, respiratory, renal disease, alcoholism, diabetes mellitus, chronic cerebrospinal leak, asplenia, and other conditions associated with immunosuppression;
- children 2 years of age or older with asplenia, splenic dysfunction, nephrotic syndrome, chronic cerebrospinal fluid leak and other conditions associated with immunosuppression; and
- HIV positive individuals over the age of 2 years.

** Generally, no boosters are required, except for patients with: nephrotic syndrome, asplenia, debilitating cardiopulmonary disease, hepatic cirrhosis, HIV infection, or immunosuppression related to disease therapy. (for those individuals, boosters are recommended every six years).*

Universal Hepatitis B Program and Catch-up

Hepatitis B vaccination is recommended for:

- all newborns in the NWT and Nunavut;
- all students entering grade four.

Schedule:

This is a three-dose schedule. The second booster follows one month after the first dose and the third booster follows six months after the first dose.

Dosage:

Infants to 10 years: Recombivax 0.25mL

11-19 years: Recombivax 0.5mL

Good planning will lead to better coverage rates, thus it is important to prepare for the fall immunization programs. If you have any questions about the NWT or Nunavut Immunization Programs, please contact your Medical Health Officer or Communicable Disease Consultant. A reminder to prepare for the programs will be sent to all health care centres in the NWT and Nunavut early in September. (*NB. The catch-up program should be completed by now. All students in grades 8-12 should be immunized against hepatitis B.)*

This section lists health-related conferences and workshops hosted in the coming year. To list an upcoming event please email, fax or mail the information to *EpiNorth*.

Conferences/Workshops

Immunization in the 21st Century – Progress Through Education

4th Canadian National Immunization Conference
December 3-6, 2000
World Trade and Convention Centre
Halifax, Nova Scotia

Sponsors:
The Laboratory Centre for Disease Control, Health Canada and the Canadian Paediatric Society.

Goals and Objectives:

- Increase information exchange on immunization issues;
- Explore myths, truth and logic about immunization;
- Share information on immunization initiatives, new vaccines and vaccine programs;
- Discuss late breakers;
- Educate professionals and discuss the place of immunization in medical and nursing curricula.

For a conference preview, to get on the mailing list or receive sponsorship opportunities visit the conference website:
http://www.**hc-sc**.gc.ca/hpb/lcdc/events/cnic/index.html

Or, fax your request to:
Jennifer Brousseau, Conference Coordinator
Fax: (613) 952-7948

Our Health in Our Hands

October 12-14, 2000
Fort Garry Hotel
Winnipeg, Manitoba

Sponsor:
Prairie Women's Health Centre of Excellence

A conference for researchers, policy-makers, service providers and women's health advocates.

Sara Arber, Head of Sociology Department, University of Surrey, UK, will be provide the keynote address, "Why Women's Health Matters".

Goals and Objectives:
This event will provide a forum for discussion on how health care policies have affected women as patients, as users of health services, as informal caregivers, as health care providers, and as citizens.

Participants will be engaged in the development of a women's agenda for health care, the "Action Plan for Women's Health", which will outline future directions and provide tools for change to make health programs and policies more responsive to women's needs.

For registration information and a list of session topics, visit the conference website:
http://www.escape.ca/%7Efrontlin/PWHCE/

Or, call FRONTLINE Associates
Conference Planners
Tel: (204) 489-2739

health.online

This section highlights useful online resources helpful to anyone working within a health or health-related field.

In this issue, *EpiNorth* has identified the following online resources to help you navigate your way to websites which have reliable and, in some cases, cutting-edge health information. We encourage you to add some (or all!) to your Bookmarks folders for future reference.

Useful and effective search strategies will be highlighted in the fall issue of *EpiNorth*.

General Health Websites

CANADIAN MEDICAL ASSOCIATION JOURNAL
www.cma.ca/cmaj/
Clinical Resources link provides useful resources including an excellent collection of clinical practice guidelines

BRITISH MEDICAL JOURNAL
www.bmj.com/bmj/
This site is indexed by both issue and topic. Provides a "related articles" link to find additional resources.

EVIDENCE BASED MEDICINE
www.acponline.org/journals/ebm/ebmmenu.htm
Reviews of papers in various journals.

ANNALS OF INTERNAL MEDICINE
www.acponline.org/journals/annals
Journal articles as well as non-technical summaries.

MEDICAL INFORMATION SERVICE
www.ruralnet.ab.ca/medinfo/journals/
Provides links to online journals.

PUBMED
www.ncbi.nlm.nih.gov
Contains a powerful Journal Browser feature that displays the latest articles in various journals.

WEBDOCTOR
www.gretmar.com/webdoctor/
Provides an index by specialty of medical journals. Full text of articles are made available.

MEDICAL MATRIX
www.medmatrix.org
Lists medical journals.

INTELLIHEALTH
www.intellihealth.com
Comprehensive health information, including daily or weekly e-mail health newsletters on an a variety of topics including nutrition, children's health, women's health, men's health, AIDs, etc. Offers latest news on medical research and treatments.

MAYO CLINIC HEALTH OASIS
www.mayo.health.org
Provides information on a plethora of health topics, as well as health quizzes, reference articles and links to related sites.

MEDSCAPE
www.medscape.com
Research and feature articles on topics within any medical specialty. A very good resource for anyone looking for current, in-depth health information.

SYMPATICO HEALTHY WAY/HEALTH CENTRAL
www.Sympatico.healthcentral.ca
Access to loads of Canadian and international health resources. In-depth information and resources on more than 6,000 diseases. A wide range of discussion forums dealing with everything from schizophrenia to how to lose weight.

CANADIAN HEALTH NETWORK
www.canadianhealthnetwork
Easy access to a vast range of online health resources from leading Canadian and international health organizations and information providers. Emphasis on prevention and health promotion.

HEALTH CANADA ONLINE
www.hc-sc.gc.ca
Resources devoted to Canadian health news, research and healthcare policy.

CANOE'S C-HEALTH
www.canoe.ca/Health
Easy-to-read, "newsy" human-interest articles on a wide range of health topics.

HEART AND STROKE FOUNDATION
www.hsf.ca
User-friendly resource. Information on preventing, diagnosing, treating and living with heart disease and strokes.

ON HEALTH
www.onhealth.com
Offers a reference section, a "symptom-checking tool" developed by Harvard Medical doctors, live chats with experts, regular newsletters, in-depth consumer articles by leading doctors, and quizzes on more than 350 ailments.

MEDEXPLORER
www.medexplorer.com
Index site provides links to and short descriptions of many sites on any disease or health topic.

Special Interest Websites

WOMEN'S HEALTH MATTERS
www.womenshealthmatters.c**a**
Developed by Toronto's Sunnybrook and Women's College Health Sciences Centre, and the Centre for Research in Women's Health. Health Bytes section provides information on a wide range of topics related to women's health.

MENTAL HEALTH NET
www.mentalhelp.net
Provides a mental health glossary, symptom lists, and questionnaires on mania, depression and other mental health conditions.

YOUR CHILD'S HEALTH
www.yourchildshealth.echn.ca
Highly reliable information on common childhood ailments.

NATIONAL CENTER FOR INFECTIOUS DISEASES TRAVELLERS' HEALTH
www.cdc.gov/travel
Provides useful tips on how to prevent infectious diseases such as malaria if you are planning a trip to a tropical region.

Notifiable Diseases by Territory and Region: for the Northwest Territories (NWT) and Nunavut (NU) April - June 2000*

		April - June 2000		Cumulative 2000 Totals		Regional Cumulative Totals - 2000				
		NWT	NU	NWT	NU	Inuvik	Fort Smith	Baffin	Keewatin	Kitikmeot
Vaccine Preventable Diseases	Hepatitis B	0	0	0	0	0	0	0	0	0
	Haemophilus Influenzae	0	1	0	1	0	0	0	0	1
	Influenzae	1	1	1	152	0	1	1	151	0
	Pertussis	1	0	3	0	1	2	0	0	0
Sexually Transmitted/ Bloodborne Diseases	Chlamydia	141	202	256	381	93	163	167	170	44
	Gonorrhea	33	24	76	51	26	50	32	16	3
	Hepatitis C	10	1	19	3	7	12	1	1	1
	Hepatitis, Other	0	0	0	0	0	0	0	0	0
	Syphilis	0	0	0	0	0	0	0	0	0
Diseases by Direct Contact/ Respiratory Route	Chicken Pox	22	4	27	124	12	15	13	3	108
	Group A Strep	0	0	0	1	0	0	0	0	1
	Invasive Strep Pneumoniae	2	2	2	6	0	2	4	2	0
	Legionellosis	0	0	0	0	0	0	0	0	0
	Meningitis, Pneumococcal	0	0	0	0	0	0	0	0	0
	Meningitis, Other Bacterial	0	0	0	0	0	0	0	0	0
	Meningitis/Unspecified	0	0	1	0	0	1	0	0	0
	Meningitis, Viral	0	0	0	0	0	0	0	0	0
	Meningococcal Infections	0	0	0	0	0	0	0	0	0
	Respiratory Syncytial Virus	3	28	3	28	0	3	3	7	18
	Tuberculosis	3	15	6	25	2	4	17	8	0
Enteric, Food and Waterborne Diseases	Botulism	1	0	1	0	1	0	0	0	0
	Campylobacteriosis	3	0	4	0	0	4	0	0	0
	Crytosporidiosis	0	0	0	0	0	0	0	0	0
	E.Coli 0157:H7	4	3	4	5	1	3	0	2	3
	Food Poisoning	0	0	0	0	0	0	0	0	0
	Giardiasis	1	2	4	2	2	2	2	0	0
	Hepatitis A	0	0	0	0	0	0	0	0	0
	Salmonellosis	1	6	1	9	0	1	2	6	1
	Shigellosis	0	0	0	0	0	0	0	0	0
	Tapeworm Infestation	0	0	0	0	0	0	0	0	0
	Trichinosis	0	0	0	0	0	0	0	0	0
	Yersinia	0	0	0	0	0	0	0	0	0
Vectorborne/ Other Zoonotic Diseases	Brucellosis	0	0	0	1	0	0	0	1	0
	Malaria	0	0	0	0	0	0	0	0	0
	Rabies Exposure	1	0	1	1	1	0	1	0	0
Antibiotic resistant micro-organisms	Methicillin-resistant Staph. Aureus	3	0	5	0	1	4	0	0	0
	Vancomycin-resistant Enteroccci	0	0	1	0	0	1	0	0	0

HIV Infections Reported in NWT Residents

Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
NWT	2	1	1	2	1	8	0	2	0	2	0	1	0
NU	0	1	2	1	2	1	3	0	0	0	1	0	0

*Statistics are based on currently available data and previous data may be subject to change.