HUMAN HEALTH MONITORING PROGRAM

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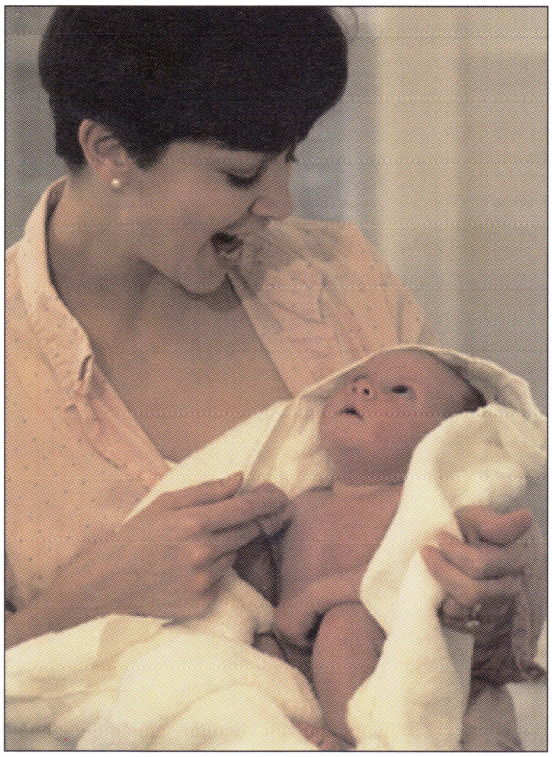
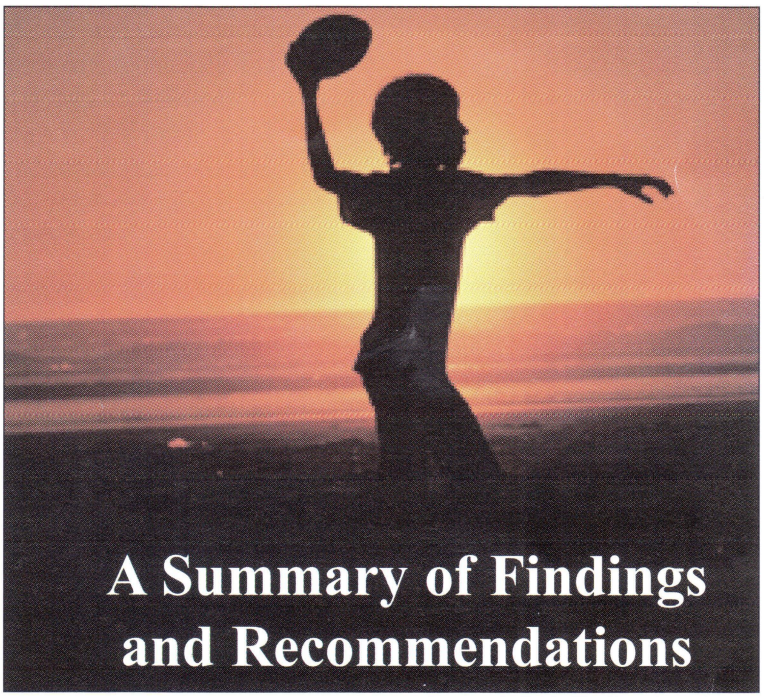




A Summary of Findings and Recommendations

NORTHERN RIVER BASINS
Human Health Monitoring Program

Raising the Questions

Human Health Monitoring Program
A Summary of Findings and Recommendations

AN INTRODUCTION:

Why was the Human Health Monitoring Program launched?

The Human Health Monitoring Program (HHMP) was initiated in 1994 to collect information relating to human health and the environment within northern Alberta. The Program was launched following a request by the Northern River Basins Study, a $12 million federal/provincial study which conducted scientific work in northern Alberta and southern Northwest Territories between 1991-96.

What is the connection between the two studies?

The Northern River Basin Study conducted research and other scientific work to examine the relationship between industrial, municipal and other human development and the Peace, Athabasca and Slave rivers basins, and included the study of contaminants, nutrients, river flow, drinking water and other factors. During a series of public meetings throughout northern Alberta, the study's management board heard requests from members of the public for a specific program to be launched to examine the relationship between human health and the environment. In 1994, the Minister of Health initiated the Human Health Monitoring Program and provided $350,000 to fund the collection of information and to facilitate a public consultation process.

- The Minister stated that this human health initiative was distinct and unique from the Northern River Basins Study.

- The Minister appointed an independent eight person committee to manage the Program. This committee was made up of representatives from the environmental community, Regional Health Authorities, industry, the Northern River Basins Study and the public at large. The committee also included representatives of Alberta Health, Health Canada and Alberta Environmental Protection.

What was the official mandate of the Human Health Monitoring Program?

The Program's mandate was to study data and other available information to see if trends, connections and other relationships could be identified.

How was this approached?

Research teams undertook to assemble two data bases. A health data base was developed composed of information from Alberta Health Care, physician billing trends, hospitals and health care centers, disease registries, statistical bureaus and other sources. Work also began on a second data base composed of available data and other information from air, water and soil samples.

What was the aim of this process?

Scientists and members of the Program Committee hoped to produce a series of maps and other information, and to compare regional trends between the health and environmental information collected.

◆ This was the first time in Canada that such an extensive project of this kind had been undertaken over such a large geographical area.

How long did this work last?

Work lasted about four years. This included assembling the Project research team, identifying where data was located, and developing maps and computer systems to assemble the information collected.

How was this work communicated to members of the public?

The Human Health Monitoring Program kept members of the public and other parties up to date with regard to its ongoing work and results. In addition to a series of newsletters, the Human Health Monitoring Program communicated results to communities through video presentations, "face to face" briefings with community leaders and health officials, and through aboriginal language radio broadcasts.
In addition, a series of seven public information meetings was held during October and November, 1998, to share scientific information and to answer questions. At these meetings members of the Program Committee also wanted to hear comments from members of the public and other parties before developing its recommendations to the Minister of Health.

THE SCIENCE PROGRAM:

How successful was the Program in reaching its goal?

The Program achieved success in assembling health data. It relied largely on information assembled by Alberta Health Care during 1980's and 1990's to develop a data base and a series of maps on where certain diseases, conditions and visits to physicians and hospitals were reported.

◆ The Program produced one of the most extensive health data bases for any province in Canada.

◆ The data base was developed in manner which will enable scientists and health officials to follow trends on an ongoing basis. The Human Health Monitoring maps and other information will provide a baseline for the future.

What about the environmental data base?

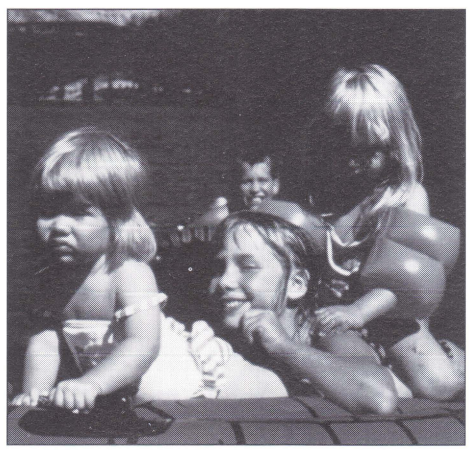
The Human Health Monitoring Program did not succeed as it had hoped in the development of a complete environmental data base.

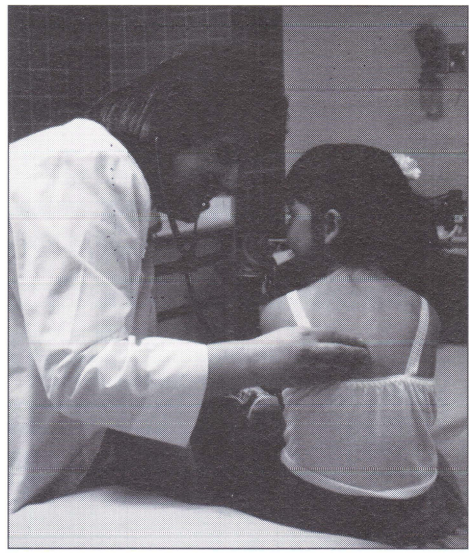
Why was this?

HHMP researchers found that information on soil, water and air samples was scattered, and in many cases was in formats which did not lend themselves to health assessments. The task of assembling an extensive environmental data base was more difficult and complicated than originally anticipated.

Can this task be completed in future?

The Program Committee strongly believes that current or future programs, studies or projects should complete this environmental data collection.





◆ The Program Committee believes that there is value in examining the extensive health information collected, for current use, and to serve as a baseline for future monitoring.

◆ The Committee was not able to develop conclusions regarding the causes of some of the diseases and health trends identified.

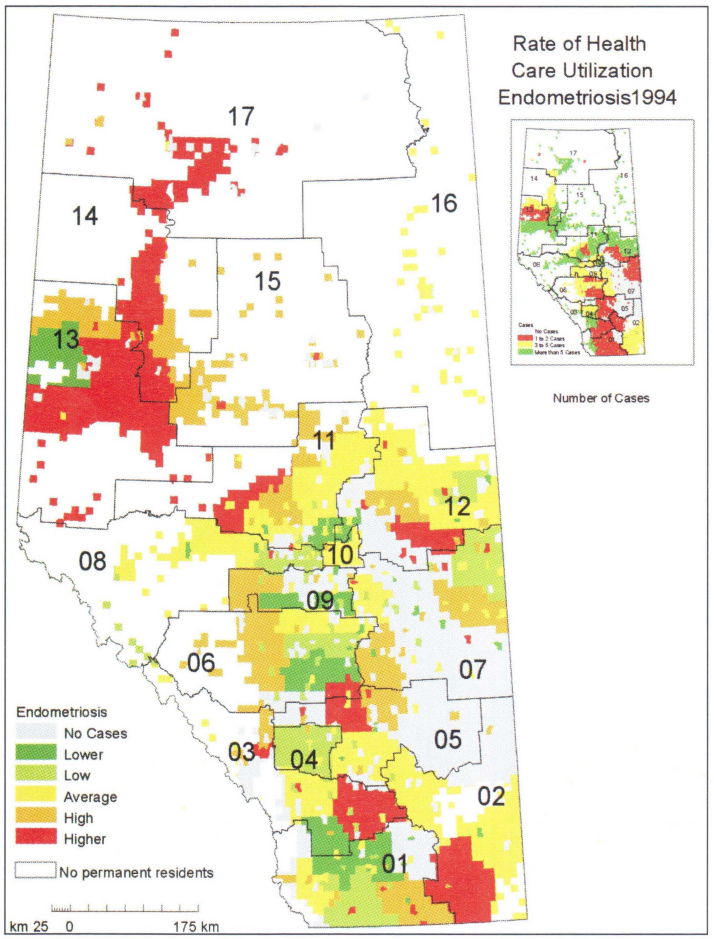
◆ The Committee's recommendations to the Minister of Health offer advice on addressing health trends identified.

Program's Health Findings:

A number of health trends were identified. Maps were produced identifying areas of lower, low, average, high and higher rates of diseases or other health conditions. Significant findings include:

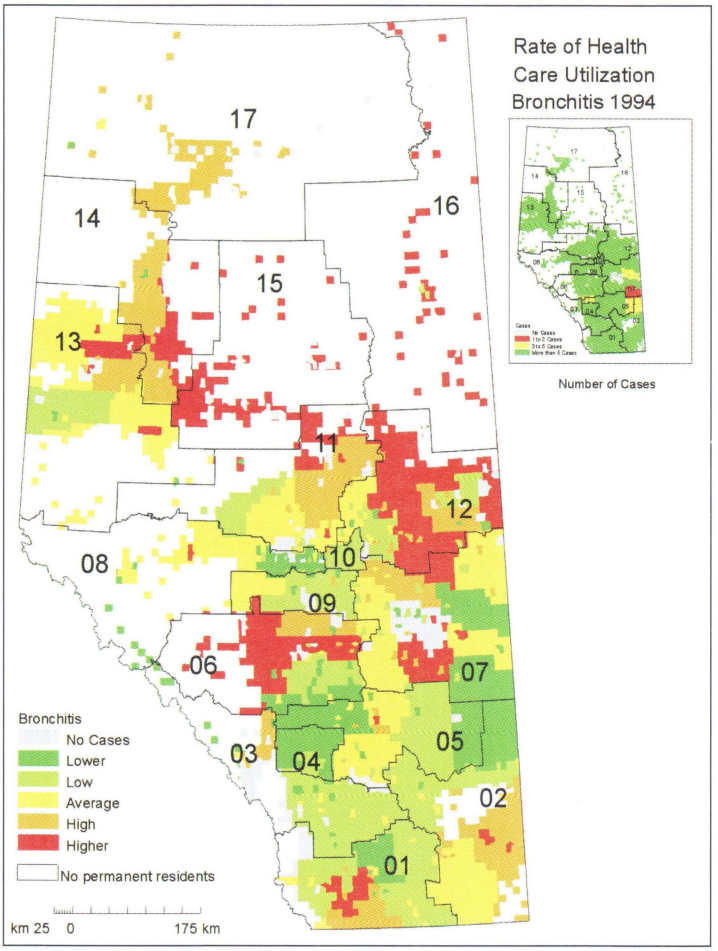
Endometriosis:

HHMP data showed that more women who live in northwestern Alberta seek medical attention for endometriosis than in other areas of Alberta. Endometriosis is a condition which causes certain cells to grow outside the uterus and may cause reproductive difficulties. Scientists say a more detailed and individual study of women with this diagnosis is needed.



Asthma and Upper Respiratory Infections:

Incidence of asthma and upper respiratory infections appear lower in northern Alberta than in central and southern areas of the province.



Pneumonia and Bronchitis:

There appears to be a higher incidence of pneumonia and bronchitis in North Central Alberta than in other areas of Alberta. This is particularly true in the Keeweetinok Regional Health Authority which serves the High Prairie and Slave Lake area.

Epilepsy:

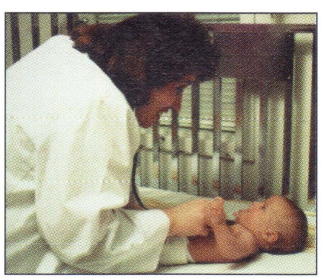
There appears to be a higher incidence of epilepsy in northeastern Alberta, in particular in the Fort McMurray and Lac La Biche region.

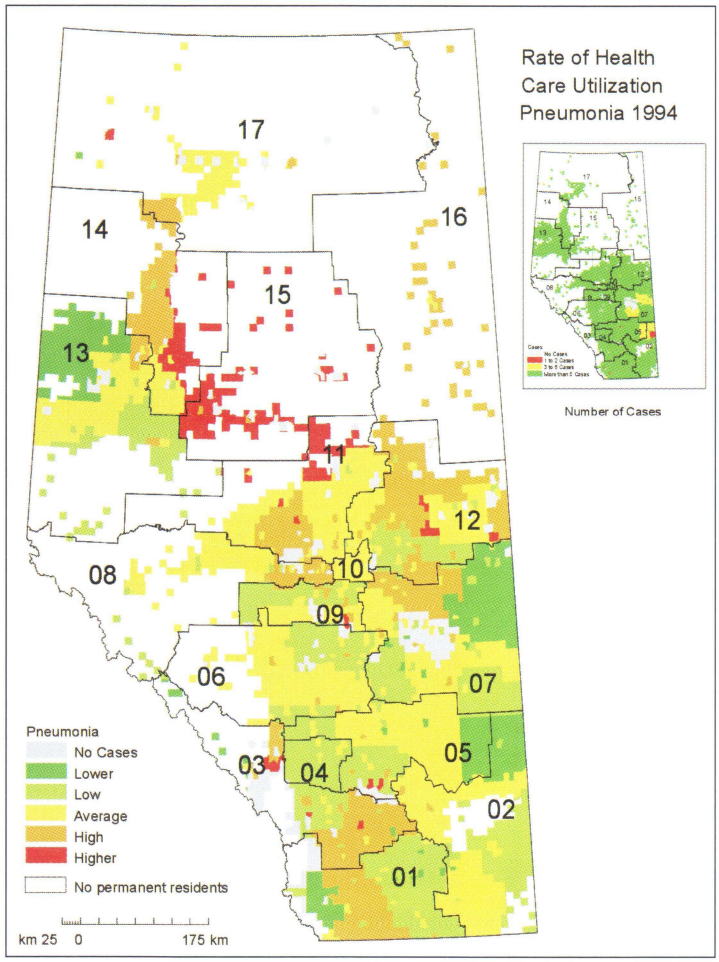
Congenital Urinary Anomalies:

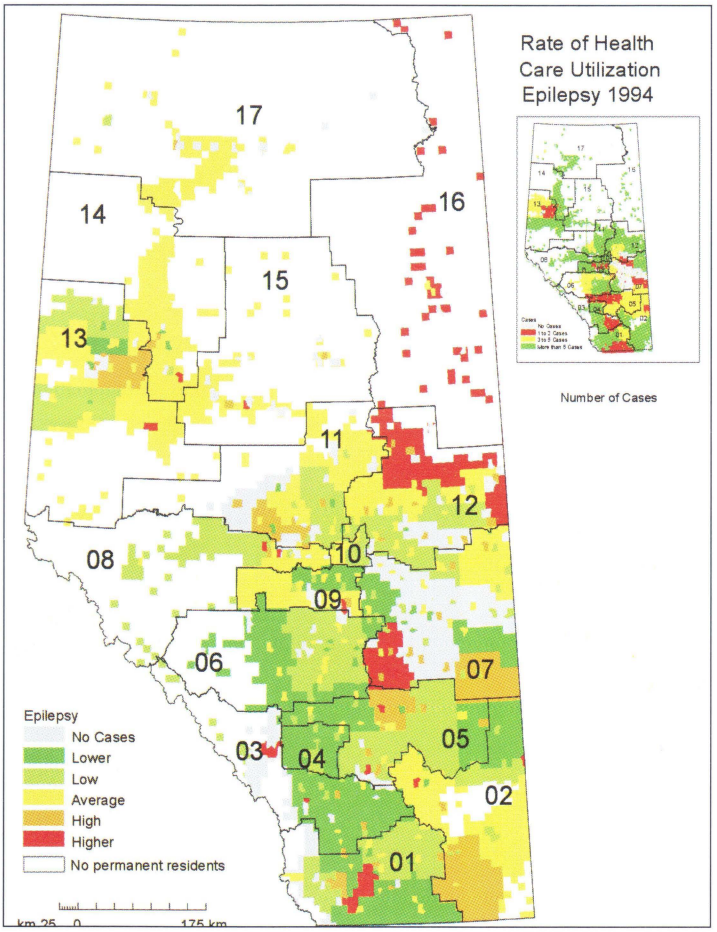
The Peace Health Region appears to have a higher incidence of urinary birth defects reported than in other regions of the province. However, scientists note that due to the small size of the Region, the actual number of cases was relatively low.

Congenital Heart Anomalies:

HHMP data indicates that reported cases of congenital heart anomalies within the Mistahia Health Region between 1991 and 1993 were twice the provincial average. A congenital heart anomaly is a type of birth defect which may include a heart murmur, or temporary delays in the natural closure of the opening between two chambers of the heart.

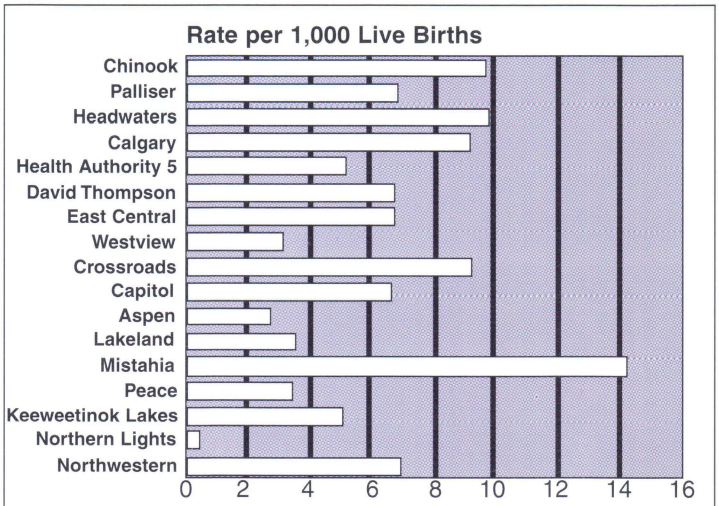






What does the HHMP report state about congenital heart anomalies?

The report states that between 1991-93, the Mistahia Health Region, centered in Grande Prairie, reported about 14 congenital heart anomalies per thousand births. This is about twice the provincial average. During this period, the Mistahia Health Region reported about 3,900 total births, of which about 50 were reported with congenital heart defects.



Source: Alberta Vital Statistics, 1996

Why are congenital heart anomalies reported more frequently in the Grande Prairie region?

The Human Health Monitoring Program was not able to speculate or offer explanations with regard to this matter. However, a subsequent study has been launched by Alberta Health and the Mistahia Health Region to better understand the nature of each case reported.

- The new study, to be completed in 1999, will examine each case reported during 1991-93, and will also study the reporting methods of physicians and hospitals in reporting these anomalies.
- The program does recommend that future work in this area be completed with a minimum of delay.

WHAT CAN CAUSE AN ANOMALY?

The following are some factors which scientists say can contribute to birth defects.

- Infections (rubella)
- Family history (genetic factors)
- Alcohol use during pregnancy
- Use of drugs and medication during pregnancy
- Maternal exposure to certain chemicals (mercury, PCP's, lead, pesticides)
- Occupational exposures
- Smoking during pregnancy
- Paternal exposure to radiation, fire, pesticides etc.
- Maternal productive characteristics including age of delivery, history of stillbirth, multiple births etc.

Other Health Information

Did the Program examine cancer rates?

The Alberta Cancer Board recently published an extensive profile of cancer trends throughout the Province. For this reason, the Human Health Monitoring program did not directly study cancer trends.

What other health trends did the Program identify?

The Program concluded that rates of Alzheimer's Disease, Parkinson's Disease and Multiple Sclerosis are the same or lower in northern Alberta than the provincial average. There was also no difference between incidence of circulatory disorders in northern Alberta than in the rest of the Province.

What about trends in aboriginal communities?

Information specific to Alberta aboriginal people was not assembled. However, scientists did review Canada wide health information on aboriginal people which indicated that aboriginal people, Canada wide, have three times the incidence of diabetes than the remainder of the Canadian population.

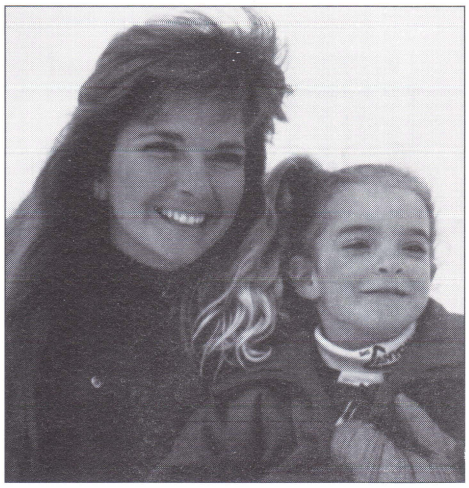
Drinking Water:

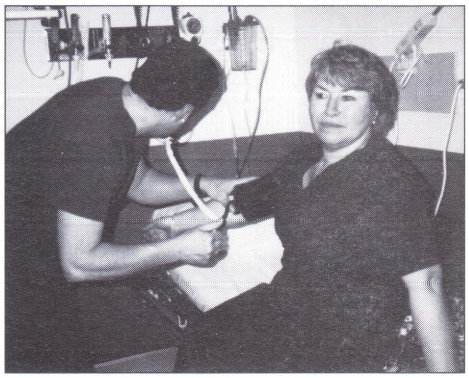
The Program noted a connection between water supplies in some smaller communities and human health. Information revealed a higher level of stomach illness including giardiasis (beaver fever) and shigellosis. These findings are consistent with those assembled from across North America which indicate that smaller communities often have poorer water treatment.

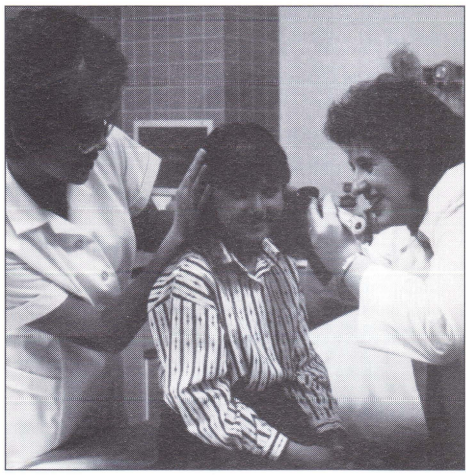
Why is this?

Poorer water treatment or use of non-conventional water sources may produce an environment for residents to contract microbial diseases at a higher rate than residents in larger towns or cities.

◆ In recent years, efforts by Health Canada, Alberta Health and Alberta Environmental Protection have attempted to reverse this trend by supporting better training of water treatment operators, and helping to improve water treatment facilities.







NORTHERN RIVER BASINS Human Health Monitoring Program

The Human Health Monitoring Program was funded by Alberta Health and managed by a seven person multi-stakeholder committee.

The HHMP's science program was coordinated by **Dr. Stephan Gabos**, Senior Team Leader, Health Surveillance, Alberta Health.

COMMITTEE MEMBERS AND THEIR CONSTITUENCIES INCLUDE:
Connie MacRae, Chair, (Regional Health Authorities)
Lucille Partington, (Northern River Basins Study)
Lucille Polukoshko, (Public at Large)
David Bougher, (Alberta Health)
Sally Ulfsten, (Non Government Environmental Organizations)
Dr. Stella Swanson, (Industry)
Dr. Dennis Stokes, (Alberta Environmental Protection)

OBSERVERS:
Health Canada, Medical Services Branch
Government of the Northwest Territories

Support for the publication of this report was provided by Health Canada, Medical Services Branch

Recommendations

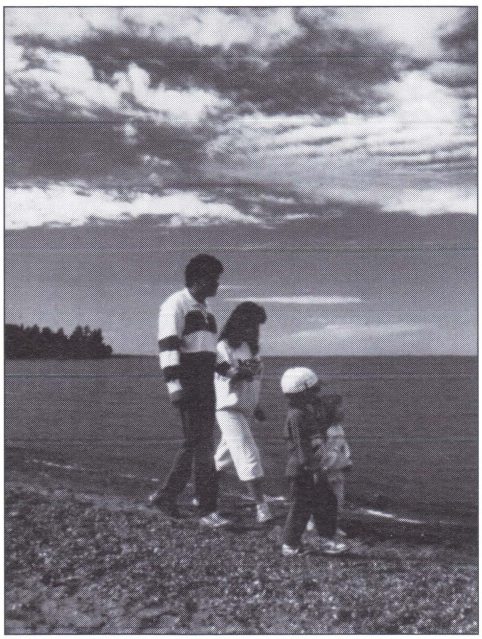
The following are recommendations which are included in the Human Health Monitoring program final report:

1.

The Committee recommends that a Northern Alberta Monitoring Council (NAMC) be established to ensure coordination of future ecological and health monitoring programs.

* The Deputy Minister of Executive Council would coordinate between ministers and would ensure that a legislative mandate, a budget and the necessary authority is provided to the NAMC.

* * The federal government should participate in this process



2.

Continue the implementation of Northern River Basin Study (NRBS) recommendations relevant to human health

3.

The Committee strongly recommends that prioritization of future health studies be conducted using a set of consistent principles.

- **Short-listing contaminants of concern:**

  A systematic prioritization of the contaminants of concern that are present in the Northern River Basins is required to ensure that monitoring effort is focussed on the contaminants that pose the greatest potential risk to human health. This prioritization should be based on monitored levels of these contaminants and on potential for human toxicity, and should include evaluation of uncertainties. The prioritization should be balanced by their health concerns in the area, such as nutrition, tobacco and alcohol use, as well as accidental death and injury.

- **Developing New Initiatives:**

  The committee believes as well that a series of well designed exposure assessments should be developed to investigate issues raised in this report, and others identified throughout the province. These assessments would enable scientists to focus on specific health and environmental issues. Such an assessment, launched in 1997 in Fort McMurray, focused specifically on air quality and health in the community. It is also important to redesign health and environmental studies using innovative study design, maximum stakeholder participation, and existing and leading edge technology.

4.

Create a Memorandum of Understanding between federal, provincial and First Nation governments that will ensure co-ordination of programs that deal with First Nations health issues (such as diabetes, water-borne diseases).

MONITORING RECOMMENDATIONS

AGRICULTURAL RECOMMENDATIONS

Due to significant expansion of agriculture in northern Alberta, the committee specifically recommends:

1) Baseline, province-wide monitoring for cryptosparidia and giardia should be undertaken with the participation of all agencies.

2) Coordinated province-wide monitoring program be undertaken for the impact of agricultural practices on surface water, ground water and air quality.

AIR QUALITY RECOMMENDATIONS

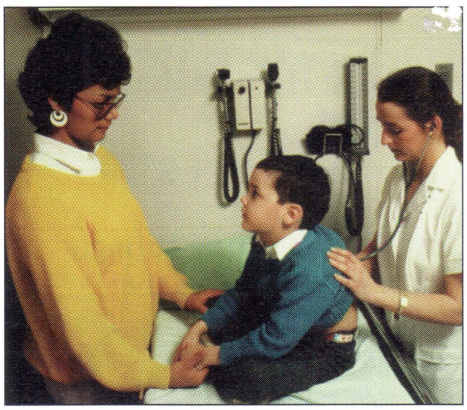
The committee recommends: that there be **improved monitoring** where there is evidence of data gaps.

SCIENCE RECOMMENDATIONS

Health

1. DEVELOP the capacity to monitor environmental inputs and health outcomes more effectively through the development of data and monitoring systems with participation of governments, universities, industries, research organizations, and health authorities.

2. MAKE BETTER AND MORE EFFECTIVE USE of the routinely collected administrative health data. Ensure the timely collection of high quality, valid and appropriate data throughout the health systems.



3. EXPAND the monitoring of illnesses and health condition beyond the common communicable diseases.

4. IDENTIFY contaminants of concern in the local environment and monitor exposure, early biological changes and health outcomes.

5. ESTABLISH a process to regularly monitor select contaminants in wild animal and fish used for human consumption to assess variations and detect changes over time.

6. ENSURE current regulations and guidelines support continuous improvement of industry emissions.

7. INITIATE action to better understand the higher incidence of congenital anomalies in the Mistahia and Peace Health regions.

OPERATIONAL RECOMMENDATIONS

1. Future monitoring activities should be managed and operated at arms length from government. The management committee should be made up of representatives of a wide range of groups and interests.

2. Efforts should be made so that future management committees include appropriate technical and scientific expertise.

3. The chair of future management committees should be selected by the members of the committee.

4. RHAs should continue to provide a leadership role in the planning and management in future monitoring activities.

5. Since the practice of providing **timely** and **open communications** proved successful for the HHMP, it is recommended that future studies of this kind communicate their results and ongoing progress in an open and timely manner.

6. Since the practice of development **culturally sensitive communications materials** proved successful for the HHMP, it is suggested that future studies of this kind communicate their results and ongoing progress in a manner which is culturally sensitive to aboriginal communities, and to other unique groups.

FOLLOW UP:

What will be done with this information?

The information collected by the HHMP will be available for distribution to members of the public, health officials, governments, aboriginal groups and other interested parties. The report to the Minister includes an extensive report document, and a summary or "bridging" report. The full report is available on the Internet at www.health.gov.ab.ca . A CD Rom of the entire report is available by contacting The Alberta Health Surveillance. Branch.

What will be done with the recommendations?

The Minister of Health will review the recommendations for potential follow up. The information and recommendations will also be forwarded to the Northern Rivers Ecosystem Initiative, an initiative currently being coordinated by the governments of Canada and Alberta, to follow up the recommendations of the original Northern River Basins Study.

SUMMARY POINTS:

- The Human Health Monitoring Program assembled one of the most extensive human health data bases for any province in Canada
- The Human Health Monitoring Program was not successful in assembling a complete environmental data base, but strongly recommends that such efforts continue.
- The Human Health information will serve as a baseline for future monitoring of human health trends.
- Health information assembled by the HHMP was shared with members of the public and other interested parties in an open and timely manner.
- The Human Health Monitoring program has provided important information on human health which will play a role in guiding future "evidence based decision making. " The Management Committee hopes that its work will assist decision makers in allocating future resources towards protecting the health of Albertans.

ADDITIONAL INFORMATION:

For additional information, please contact
The Alberta Health Surveillance Branch at 24th Floor, 10025 Jasper Ave, Edmonton, Alberta, T5J 2N5.

A toll free line will be in operation until April 30, 1999

1-877-5RIVERS (574-8377).

After April 30, 1999, information can be obtained by calling (780) 427-4518.