

THE NOVA SCOTIA MEDICAL JOURNAL

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The Balance of Summer

Things to do in summer. Go to graduations and weddings, eat strawberry shortcake. Hang a hammock and take a nap, go swimming, make ice cream in an old fashion freezer. Avoid poison ivy, get to work on handmade Christmas gifts, go to a beach and build a sand castle, wade in the creek, go to a baseball game, pick cherries and berries and ride on ferries.

The above quotation is from the *Saturday Evening Post Norman Rockwell Book*. It serves to remind us of the many simple pleasures of summer. We often take ourselves too seriously and it is one of the many dangers for those of us who have taken up a challenge of the practise of medicine. Still, part of that challenge lies in attempting to maintain a balance as a dedicated physician with the never ending demands of patients, continuing education, and the need of a decent standard of living.

If it were not difficult enough to draw the fine line delineating the limits of reasonableness with all these aspects of professional life, we also face the challenge of our personal lives. How much time should we allow for our wife, children, ourselves to meet our recreational, spiritual and cultural needs?

Fortunately, Nova Scotia's short but intensely pleasant summers remind us of the necessity to make a grab for the fun and good times as we seek to golf, sail, camp or sun our way to the balanced equation that will carry us through a long winter. The very shortness of the time of good sailing weather or good camping or fishing opportunities demands we forget our professional life for a while and grasp the opportunity before it passes. It takes us to our cottages, lodges and vacation spots and forces us to spend some time with the non sick. The change in perspective cannot help but be refreshing.

There is no simple solution to the personal/professional equation that requires balancing but summer is the reminder that we sometimes need a few sunsets over a lake and a good book. Time spent now in summer pursuits. . . will do much for your patients in January when fatigue and frustration threaten. A little meditation time on the balance in your life both professionally and personally seems most appropriate at this time.

The *Journal* and Staff wish you all the best of a Nova Scotian summer, as you seek the balance we all need as physicians.

June was named to honour Juniors, the younger men of Rome, as May honoured the elders. July was named for Julius Caesar, who was born in that month. August was the sixth month, called Sextiles until the Roman calendar was reformed by Emperor Augustus who renamed this month for himself.

□

J.F.O'C.

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GUIDELINES FOR AUTHORS

The entire manuscript should be typed double-spaced on one side only, with generous margins on all four sides. Tables should not be included in the text but typed on separate pages, as should the references and the legends for any figures and illustrations.

Non-metric units should not be used in scientific contributions. Parts of the SI system are controversial or unfamiliar, especially concentrations of substances, gas tensions, blood pressure and radiological units, so that authors should provide conversion factors. Abbreviations should be defined when first mentioned and, if numerous, the author should provide a glossary which will be printed separately in a prominent place in the article.

In general, papers reporting on studies should adhere to the following sequence:

- a) **Title page** — title of article (concise but informative); first name, middle initial and surname of each author, with academic degrees; names of department or institution to which the work should be attributed; name and address of author responsible for correspondence or reprints; source of support (if any).
- b) **Summary or Abstract** — not over 150 words, summarizing the purpose, basic procedures, main findings and principal conclusions.
- c) **Materials and Methods** — describe the selection of subjects, the techniques and equipment employed, the types of data collected, and the statistical tests used to analyze the data.
- d) **Results** — describe in logical sequence, using tables and illustrations.
- e) **Discussion** — emphasize new and important aspects, and the conclusions that follow from them. Recommendations, when appropriate, may be included.

f) **Acknowledgements** — only those persons who have made substantial contributions to the study.

g) **References** — usually limited to 10 for short papers and to a maximum of 20 for review articles. Number in sequence, in the order they are first mentioned in the text, with journal titles abbreviated as in *Index Medicus*.

Examples of the new format are:

1. Journal articles — list all authors when six or less (surnames followed by initials without periods); when seven or more, list only the first three and add *et al.*

Epstein SW, Manning CPR, Ashley MJ, Corey PN. Survey of the clinical use of pressurized aerosol inhalers. *Can Med Assoc J* 1979; 120:813-816.

2. Book —

Fletcher C, Peto R, Tinker C, Speizer FE. *The Natural History of Chronic Bronchitis and Emphysema*. Oxford: Oxford University Press, 1976.

3. Chapter in book —

Deusche KW. Tuberculosis. In: Clark DW, MacMahon B, eds. *Preventive Medicine*. Boston: Little, Brown, 1967: pg 509-523.

h) **Tables** — type each on a separate sheet, number consecutively with *roman* numerals. Supply a brief title for each, give each column a short or abbreviated heading, and reserve explanatory material for footnotes.

i) **Figures and Illustrations** — professionally drawn and photographed, as glossy black and white prints, numbered consecutively with *arabic* numerals. List all legends on one page and state magnification of photomicrographs.

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1. warranting that this manuscript has not been published previously and that none of this material is currently under consideration for publication elsewhere;
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3. indicating the contribution made by each of the co-authors (for multi-author papers).

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Psychiatric Services in Nova Scotia

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Since the 1960s Nova Scotia has had mental health services in every region of the Province. In recent years the Department of Health, committed to the principle of decentralization, has been promoting the development of these services through its regional hospital system. This paper represents an initial attempt to describe the services and includes an overview of programmes throughout the province as well as a comprehensive outline of psychiatric services provided by the major psychiatric facilities in the Halifax-Dartmouth metropolitan area including child and adolescent mental health services.

A FRAMEWORK WITH POTENTIAL

As the result of a remarkable foresight by the Nova Scotia Department of Health in the 1960s, our province has the framework for one of the best integrated mental health services in Canada. Unfortunately, because of a lack of well-trained psychiatrists and frequent failure to define aims and roles, the full potential of the service has never been realized. In the past few years there has been a growing move to improve recruiting and training and to begin to integrate Nova Scotia's mental health services, to develop programmes dedicated to outstanding needs, and to make the treatment of mental disorder a truly team effort.

METRO HALIFAX LEADERSHIP AND PROVINCE-WIDE DEVELOPMENT

The Halifax-Dartmouth metro region, as the largest community in the Maritimes, has to take the lead in service delivery. It has to try to develop high quality psychiatric services for its citizens, but also provide extra-specialized programmes for people throughout the Province and from other parts of the Maritimes. Then, the rest of Nova Scotia can hope to develop adequate services to deal with the bulk of mental illness locally, while knowing that they have resources at the centre on which they can rely when necessary.

DECENTRALIZATION AND REGIONAL HOSPITAL DEVELOPMENT

The Nova Scotia Department of Health and Fitness is committed to the principle of decentralization and to the development of regional hospital services throughout the Province. It is the intent of the Department that each

region will have partial hospitalization and inpatient services, in addition to existing outpatient programmes. This means that patients may be treated closer to their homes or in their homes and maximize available family and community supports.

Since a complete range of services cannot be provided in every region, it will be necessary to develop tertiary services in the Halifax-Dartmouth metropolitan region. Thus for adults such services as forensic, psychogeriatric, extended care with rehabilitation programmes and treatment for very severe behavioural problems — are provided by the Nova Scotia Hospital in Dartmouth. That hospital also functions as the psychiatric regional centre for the City of Dartmouth and for the Sackville and eastern shore areas of Halifax County. Likewise the Department of Psychiatry of Camp Hill Medical Centre is the psychiatric regional centre for the peninsula area of Halifax City. Both of these hospitals, along with the Victoria General Hospital in Halifax, offer tertiary services for the remainder of the Province.

For children and adolescents, there are inpatient units at both the Izaak Walton Killam Hospital for Children and the Nova Scotia Hospital, with the Izaak Walton Killam providing other tertiary services (see details under the section on children's psychiatric services).

It was recognized several years ago that there is a need to rationalize in particular the tertiary services offered by the Halifax-Dartmouth area hospitals. The following outline represents an initial attempt to describe these services and, as shown below in Table I, the location and range of all mental health services in Nova Scotia:

A BRIEF OUTLINE OF PSYCHIATRIC SERVICES IN THE HALIFAX-DARTMOUTH REGION

Adult Psychiatric Services

All inpatient services require pre-admission psychiatric assessment. As expected, there is some overlapping of services, particularly in the area of General Psychiatry. A major determining factor will be the availability of beds. The Nova Scotia Hospital and Camp Hill Medical Centre accept patients *for observation*, either (1) under medical certificate or (2) on a voluntary basis. They also accept as *formal (involuntary) admissions*, those patients who have been transferred from a psychiatric facility so designated under the Hospitals Act of Nova Scotia. Admission policies and other pertinent information on each of the three Halifax-Dartmouth area hospitals are shown below.

Executive Director, Metropolitan Mental Health Planning Board, 1529 Dresden Row, Second Floor, Halifax, N.S. B3J 2K3.

TABLE I

LOCATIONS, FACILITIES AND PROGRAMMES ON MENTAL HEALTH SERVICES IN NOVA SCOTIA

Location	Hospital or Centre	Psychiatric Hospital Beds	Day Hospital * Programme	Outpatient Services
Antigonish	St. Martha's Hospital	Under Construction	Being Planned	Yes
Amherst	Highland View Hospital	—	Yes	Yes
Bridgewater	South Shore Reg. Hospital	Under Construction	Being Planned	Yes
Dartmouth	Nova Scotia Hospital	See details on separate pages for all its services		
Halifax	Atlantic Child Guidance Centre Up to 19 Years	Not Applicable	—	Yes
Halifax	Camp Hill Medical Centre	See details on separate pages for all its services		
Halifax	IWK Up to 16 years	10	—	Yes
Halifax	Victoria General Hospital	See details on separate pages for all its services		
Halifax	Halifax Infirmary	Inpatient unit closed December 1987 but psychiatric consultant being provided by Camp Hill Medical Centre		
Kentville	Valley Health Services	45	Yes	Yes
New Glasgow	Aberdeen Hospital	Being Planned	Being Planned	Yes
Sydney	Cape Breton Hospital	62	Yes	Yes
Truro	Colchester Regional	—	Yes	Yes
Windsor	Hants Community Hospital	—	—	Yes
Yarmouth	Yarmouth Regional Hospital	17	Yes	Yes

* A Day Hospital Programme is an alternative to inpatient treatment. It may provide short term care to acutely ill patients or longer term treatment for chronically ill persons.

A. Camp Hill Medical Centre-Psychiatric Services

1. General Psychiatric Services — for acute cases and for patients requiring investigation.
2. Acute Observation Unit — for patients requiring intensive psychiatric and nursing management.
3. Psychiatric Outpatient Department.
4. Psychiatric Day Hospital.
5. Lane Community Clinic — primarily for rehabilitation for ages 18 to 35. There is a regular program and a maintenance program.
6. Psychiatric Consultation/Liaison Services — for other Camp Hill departments and for the Halifax Infirmary Hospital.

B. Nova Scotia Hospital

Inpatient Services

1. Adult General Services are provided for —
 - a) Patients of its own catchment area (Dartmouth and Halifax County East)
 - b) Back-up services for the entire province for more difficult cases and where services have not yet been developed.
 - c) Specialty services for the entire province (see items 2,3 and 4 below.)
2. The Psychogeriatric Service — for assessment and management of elderly people with mental disorders.
3. Forensic Unit — assessment and treatment of criminal offenders referred by the courts.
4. Extended Care Unit — now in the advanced stages of planning. Will provide extended care with rehabilitation services.

Outpatient Services

1. Day Hospital — a short stay alternative to inpatient services.
2. Day-Care Program — for longer stay than Day Hospital — mainly for chronic schizophrenic patients.
3. Dartmouth Mental Health Centre — for Dartmouth and Eastern Halifax County.
4. Satellite Outpatient Clinics — Sackville (Cobequid Multi-Service Centre), Musquodoboit Harbour (Twin Oaks Memorial Hospital), Sheet Harbour (Eastern Shore Memorial Hospital).

C. Victoria General Hospital

1. Inpatient Services

- a) Eating Disorders Program: for anorexia and/or bulimia.
- b) Refractory Depression Program: for patients who have not responded to the usual therapy.
- c) Neuropsychiatry Program: in the developmental stage.
- d) General Psychiatry Program.

2. *Outpatient Services:* for psychopharmacology consultation and for eating disorders, and for those patients selected from the refractory depression programme. There is no general psychiatry outpatient service.

3. *Consultation/Liaison Service:* for other departments of the hospital.

4. *Emergency Service:* 24-hour service, in close liaison with Camp Hill Medical Centre Outpatient Psychiatry Service.

Children's Mental Health Services

Specialized mental health services for children/adolescents in Nova Scotia are essentially all located in the Halifax-Dartmouth region and are provided by:

Atlantic Child Guidance Centre — an outpatient service for children up to 19 years of age, and serving for the most part, those living within Halifax County, including the cities of Halifax and Dartmouth and the Town of Bedford.

The Izaak Walton Killam Hospital for Children — provides both outpatient and inpatient services to children up to age 16 and has a catchment area mainly across Nova Scotia.

Nova Scotia Hospital — inpatient services for children and adolescents and serves all of Nova Scotia. Age range from five to eighteen years.

A. Atlantic Child Guidance Centre

Three Branches in Halifax County — the Centre operates three main branches, one each in Halifax (for residents of Halifax City and western Halifax County); Dartmouth (for City of Dartmouth and eastern shore of Halifax County) and Sackville (for those living in Sackville, Bedford and the surrounding areas). Each branch has authorized staffing for: psychiatrist, psychologists, social workers and a psychiatric nurse.

Program Details — the Centre provides assessment and treatment, community consultation and public education, and teaching for students and professionals. Referrals may be made by any source in the community, including the families themselves. The Centre will deal with any emotional, behavioural, psychiatric or relationship problem — provided that the problem is susceptible to outpatient treatment. The Centre does not offer an emergency service, although a rapid response system can be invoked for cases which need to be seen within two weeks. Examples of such cases would be: suicidal gestures or threats which are perceived by the referral source as not acutely life threatening; parent afraid of losing control and abusing child; incest or sexual molestation or experience of death.

Bilateral Agreements — negotiated bilateral agreements dealing with the appropriate division and routing of referrals, are in place between the Centre and the Izaak Walton Killam Hospital for Children and between the Centre and the Nova Scotia Hospital.

B. The Izaak Walton Killam Hospital for Children

Catchment Area and Age Limit — The Department of Psychiatry of the I.W.K. Hospital for Children accepts referrals from the entire province of Nova Scotia but also accepts some referrals from New Brunswick and Prince Edward Island. Because long distance travel is often involved, the referring physician and the family are contacted early to obtain preliminary information so that consultation may often be completed in a single

visit. Moreover, a physician referral is required and it is usually requested that the whole family who normally live together should all attend the visit. Hospital policy limits services to children and adolescents only up to the sixteenth birthday, unless special circumstances suggest otherwise.

Types of Referrals Accepted: Range and Limitations — The Hospital accepts referrals of problems of a complex nature which require the specialized resources of a regional children's hospital. Such problems have underlying complexes of physical, developmental, neuropsychiatric, psychological, social and emotional factors and are likely to require consultation from other specialized departments within the hospital as well as with psychiatry. Conversely the hospital would not normally accept the referral of a simple behavioural problem in a normal child.

Other Types of Appropriate Referrals — would include children with: a pervasive developmental disorder; psychosis; neuropsychiatric problems; treatment resistant anorexia nervosa; a somatoform disorder; problems adjusting to a physical illness or disability.

Relatively Uncomplicated Problems of a more behavioural nature which are not likely to require integrated medical/psychological/psychiatric assessment services are more appropriately referred first to the local mental health centre or to one of Atlantic Child Guidance Centre's branches. The I.W.K. Hospital gives second opinion consultations to these local services whenever they may request it.

Hospital Services include outpatient clinic; a 10-bed inpatient unit; consultations with other departments in the hospital; 24-hour emergency services and limited use of the CARE BY PARENT UNIT.

Travelling Consultations. The Hospital's Department of Psychiatry also offers a travelling consultation service to some local centres. Where this service exists, referrals will be re-routed to that local centre for initial work-up and consultation will occur at the next regular visit unless there are special circumstances which might suggest a more appropriate mechanism.

Second Opinion Referrals. Families receiving help from local centres sometimes request also a referral to the Izaak Walton Killam Hospital. In these situations we recommend that the attending physician speak with the local mental health centre first. If afterward a referral to the Hospital is still required, a second opinion type of consultation may be sought. Also there are a number of child psychiatrists who do private practice and can offer consultation and psychiatric care.

C. Nova Scotia Hospital

The Nova Scotia Hospital operates two units:

1. **Children** (ages 5-13) are treated in the McKay Unit. Applications for assessment should be made

by telephone or in writing to: *Dr. Ivan DeCoutere, Director of Children's Services.*

2. *Adolescents* (ages 14-18) are treated in the Princess Alexandra Unit. Applications for assessment and treatment should be directed by telephone or in writing to: *Dr. Khalil Ahmad, Director of Adolescent Services.*

Unit Operation: Treatment Methods and Approaches. These units provide a medium length (average stay six months) multidisciplinary hospital-based residential treatment programme for boys and girls aged five to eighteen years and resident in Nova Scotia. Although most recognized effective treatment methods are available on the units, a behavioural modification approach is the basis of the programmes. The units have proved most useful in the treatment of children of average mental ability with a psychiatric or behavioural disorder which has not been well enough controlled at home and school with a proper trial of outpatient treatment. To ensure that any improvement is maintained, it is essential that the parents or guardians take part in the programmes to learn how to manage their child more successfully following discharge. The decision to admit the child to the hospital is made following an assessment interview. □

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Health Care in Canada and Norway

FROM A PSYCHIATRIC PERSPECTIVE

Petter Ekern,* MD, Spec.Psyc. (Norway) and Truls Østbye,** MD, MPH,

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This article discusses and compares Canadian (Nova Scotian in particular) and Norwegian health care with a special emphasis on psychiatry. As the authors consider the cultural context to be very important for the understanding of psychiatric phenomena, certain cultural, political, and general health care aspects in the two countries are described before the situation for psychiatry is considered. The conclusion is that the two countries are quite similar. The Norwegian health care system is more homogeneous than the Canadian, but then Canada is also a much larger and more diverse country with much more power delegated to the provinces. Nevertheless, the Canadian health care system is much more similar to the Scandinavian system than to the US one. The trend towards deinstitutionalization has gone further, and the psychiatrist has also a less dominant role in Norway than in Canada (Halifax). The neurobiological basis for psychiatric treatment seems to be more developed in Canada (Halifax), while Norway has a strong psychodynamic and sociopsychiatric tradition. This is reflected in differences in diagnostic habits as well as in treatment procedures. The diagnostic differences between two patient populations, one in Halifax and one in Oslo, are discussed. There are substantial differences in the postgraduate psychiatric education system in the two countries, and there is room to improve each system by carefully incorporating the best features of the other.

Europeans who do not know Canada well, often perceive the country as being very similar to the United States politically, socially, as well as culturally. The authors, both Norwegian physicians currently working in Canada, have realized that this is not true.

Both Canada and Norway are part of the same Western cultural tradition — a century ago there was even a substantial Norwegian immigration to Canada. Today, both countries are under heavy influence of American culture in many forms, and both countries are trying to emphasize their national identity. But while Norway was defined as a nation some 1000 years ago and, ethnically, is probably one of the most homogeneous societies in the world, Canada is a very young

nation which is in a way still in the process of finding its identity, particularly as distinct from the US. East-West ties within Canada have historically been relatively weak, while North-South bonds across the US border have been stronger.¹

Bilingualism has been a major concern in both countries even if the two Norwegian languages (Bokmaal of Danish origin and New Norwegian) are much closer to each other than French and English in Canada.

The Canadian political system is a constitutional monarchy which seems to be an anachronism, but still is not particularly controversial. The real power lies in the federal government and the provinces. No other country delegates as much power to the provinces — thus the Federal Government has less power than the Norwegian Central Government has.² Norway has given some power to the so-called county communes, but far less than has been given to the provinces in Canada. This feature is important to bear in mind when the health policies are examined.

HEALTH AND HEALTH SERVICES

Some selected statistics can be cited to illustrate the health situation in the two countries. Where appropriate, comparisons with the US have also been made.^{3,4}

Unemployment rates (Table I) are higher in Canada and the US than in Norway. Suicide rates are higher in Canada than in the US, while homicide rates are similar in Canada and in Norway, and much higher in the US. Alcohol consumption is much higher in Canada and in the US than in Norway, although the Norwegian figure does not take the widespread illegal "home industry" into account.

TABLE I
SOCIAL STATISTICS

	Canada	Norway	US
Life expectancy, males, 1983	71	73	71
Life expectancy, females, 1983	78	79	78
Unemployment, 1987	9.6%	2.5%	7.0%
Homicide (% of all deaths)	0.3%(1983)	0.1%(1984)	1.3%(1983)
Suicide (% of all deaths)	1.8%(1983)	1.4%(1984)	1.4%(1983)
Alcohol consumption, litres/capita 1982	11.4	5.3	11.2

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The health care system in Canada has changed considerably in the last decade and is now based on the policy that all Canadians should have ready access to

high quality health care, regardless of their ability to pay for it.² To facilitate this, Canada has developed a provincially-administered health insurance program, financed by federal government and the provinces on a 50/50 basis. Thus, the system today is in many ways very similar to the Scandinavian concept of the Welfare Society, and is also distinctly different from the U.S. system. In the U.S., free enterprise has made health care very expensive and unevenly distributed, so that some 30 million poor Americans are unable to obtain health insurance.

Table II compares health care expenditures as a proportion of Gross Domestic Product.⁵

TABLE II
HEALTH CARE EXPENDITURE AS A PROPORTION OF GROSS DOMESTIC PRODUCT

	Total	Publicly Financed
Canada	8.5%	6.2%
U.S.	10.8%	4.5%
Norway	6.9%	6.2%

The health care system in Canada faces some major organizational problems. Because so much power is delegated to the provinces, there are substantial geographical differences and less common national health policy for Canada as a whole than for Norway.

In Norway, the parliament determines through legislation the organization and funding of health care, which means more government control of the number and size of providers.

In Canada health and social services are organized under separate ministries, while in Norway both are organized under the Ministry of Health and Social Affairs. This probably gives Norway a better opportunity to centrally regulate and integrate the two services.

Table III shows that Canada has approximately the same number of beds per capita as Norway. There are fewer beds in mental hospitals in Canada, but more beds in psychiatric departments in general hospitals. Somewhat fewer days of care per capita are given in Norway.^{6 7 8}

Table IV shows that Canada has more nurses and fewer physicians per capita than Norway. The differences, however, are not very large.

Physician Costs

The average income for physicians in Canada is about 5 times the average industrial wage, in the U.S. 5.5 times and in Norway 2.5 times.⁹

In Norway all hospital physicians are salaried. The salary is the same for all specialties and for all hospitals, and is based on average working hours. In Canada, some physicians are partly salaried with their salaries based on

local negotiations, while others work on a fee-for-service basis. This creates large differences both geographically and between specialties. Although the consultation system does not seem to be as developed as in the U.S., the system still seems strange to Norwegians, since it appears to create unfair differences both between different groups of physicians, and between them and the rest of the professions.

TABLE III
HEALTH SERVICE VOLUME (1983)

	Canada	Norway
Beds per 100,000 population:		
General Hospitals	496	493
Mental Hospitals	52	110
Psychiatric Depts. in General Hospitals	37	16
Psychiatric Institutions		
Total	89	136
Days of care per 1000 population per year:		
Mental Hospitals	290	334
Psychiatric Depts. in General Hospitals	170	68
Psychiatric Institutions		
Total	460	402

TABLE IV
HEALTH PERSONNEL: POPULATION RATIO

	Canada	Norway
Nurses	1:102 (1981)	1:126 (1983)
Physicians	1:538 (1981)	1:476 (1983)

For physicians outside hospitals there are two systems in Norway. One is based on salaried positions paid by the municipalities and partly reimbursed by the National Insurance Program. The other consists of self-employed physicians on contract with the municipalities which pay 40% of the salary, the rest being paid by the National Insurance program. In both systems the patient pays a fee limited to a maximum of \$170 a year (this includes drugs for chronic illnesses).

In principle, physicians can establish a practice without a contract, but the pay is then so much less that this happens very rarely. The county communes therefore have a very strong influence on determining how many physicians there can be in the area.

In Canada, physicians bill the provincial health insurance programmes for the whole cost of a consultation. The cost to the patients is then limited to the cost of the drugs.

Social Security

Similar benefits are provided in both countries — disability pension, unemployment insurance, sick leave, maternity leave. The differences are in the amount paid.

In the case of sick leave, there is a major difference. Norway gives full salary during periods of illness, limited to one year regardless of how long or where the employee has worked. Canada gives sick leave according to length of work, based on local negotiations between employees and employers.⁶ Those with an unstable work record like psychiatric patients would therefore have to rely more upon social service and resources provided by family in Canada than in Norway.

PSYCHIATRIC CARE

Theoretical Basis

The theoretical foundations as well as the content of the psychiatric services differ between the two countries. Norway has a strong psychodynamic and sociopsychiatric tradition while the biological approach has been less developed. A couple of decades ago it was more or less considered inappropriate to have a biological understanding of mental phenomena and to use biological therapeutic techniques. Some psychiatrists even officially denounced their own medical background. This was partly due to strong criticism from the psychologists in the battle for positions and power, and partly due to the antipsychiatry movement. In the last few years a more eclectic approach has come to be accepted, but still the main conceptual framework is psychodynamic, sociopsychiatric and, lately, based upon systems theory.

Canada is of course a much larger country than Norway, and the therapeutic approaches differ more. Our experiences are from Nova Scotia where the biological approach and therapeutic techniques seem to be much more common, although probably less so than in Britain.¹⁰ As a contrast to Norway, even the psychology profession in Canada is far more oriented towards neuropsychology, and they can even be seen competing with the psychiatrists in the biological field.

While there has been concern in Norway as to the level of biological knowledge among psychiatrists, the President of the Canadian Psychiatric Association, Dr. Stanley Greben, questioned whether psychotherapeutic skills were well enough developed and used by Canadian psychiatrists. (Speech, Dalhousie University, Spring 1987).

Organization

The same division between mental hospitals and psychiatric units in general hospitals can be seen in both countries, as can the shift of emphasis from the former towards the latter. Decentralization and more concentration on services outside hospitals take place in both countries, even if the use of hospital beds is higher in Canada than in Norway (Table III).

The principle of catchment areas is used in both countries. If we take a concrete example, Oslo has a more rigid catchment area system than Halifax, probably even too rigid. It is almost impossible to get

patients admitted across the borders and this creates difficulties such as:

- a) discontinuity of care if patients move from one catchment area to another within the city, and
- b) uneven access to certain specialized programs only available in some areas

From our observations in Oslo and Halifax, we believe that catchment areas should be enforced only for regular first and second line programs but be flexible for third line (long-term and special programs). The system should also be flexible enough to provide continuity of care.

Canada provides a higher volume of inpatient care than Norway in general hospitals. On the other hand, the volume of services provided in psychiatric hospitals is quite similar, and decreasing, in both countries. In Norway, two of the biggest mental hospitals will close completely in the near future.

This tendency towards deinstitutionalization creates greater demands either for beds in general hospitals, for outpatient services, or both.

Norway has an official policy on developing services outside hospitals. This means that the traditional settings and working methods have to change towards a more integrated service where the different parts of health and social services have to cooperate and develop new approaches in order to keep the patients out of hospital.

The problem is that the deinstitutionalization comes before the outpatient services are prepared to take over.

Table V compares one catchment area in Oslo (Oslo East) and one in Halifax (Metro Halifax).

TABLE V
USAGE OF BEDS

	Halifax 1985-86 (Camp Hill Hospital)	Oslo East 1986 (Dep. A, Ullevaal Hospital)
Population of catchment area	70000	110000
Beds	49	30
Discharges	609	518
Days of care	15875	10357
Average Length of stay (days)	26.1	19.9
Percent of beds occupied	87%	94%

Halifax provides substantially more inpatient services. Whether the stronger emphasis on inpatient services in general hospitals is good or not, is a question which has therapeutic as well as economic and political implications. Regardless of the number of beds available, they will all be used.¹¹ There should therefore not be too many beds because of the possibility of encouraging chronicity in patients.

PROFESSIONS IN PSYCHIATRIC CARE

The classes of professionals are similar, but the way they work and their roles within the system differ. We will describe these differences for the most important groups.

Physicians

The top of the hierarchy is occupied by physicians in both countries, but their position is stronger and more firmly held by our Canadian colleagues (at least in the institutions with which we are familiar). The physicians' position has been challenged more in Norway. A couple of examples may illustrate this:

In Canada (as in the U.S.) the patients are admitted "under the care of Dr. X" or "to the service of Dr. Y", while in Norway the patients are admitted to the hospital under the care of the team working with the patient. From a Norwegian point of view it was quite strange to see the concept of "private possession" used on the patients and services (e.g. signs on the patients' doors with the name of the patient together with the name of the psychiatrist).

The staff psychiatrists in Canada have to make decisions which in Norway would be made by residents, nurses or even the patients themselves. They also have to be very thorough and careful with documentation. This must be seen as beneficial, especially if the documentation is legible!

One problem with this strong emphasis on one staff person, is that the units are very vulnerable and dependent upon him/her. An example we experienced was a very well-functioning psychogeriatric unit which had to close because the staff psychiatrist left. In Norway this would have been solved by giving a senior resident a locum position as staff psychiatrist.

We are not quite sure if this situation has arisen because the doctors really want it. Another possible explanation is because of legislation. As in the U.S., a consequence of giving so much power and responsibility to the staff person is that there is an increasing number of lawsuits being raised. The malpractice insurance premiums increase accordingly. Before physicians are given hospital privileges to practise in Canada they have to have adequate malpractice insurance, usually through membership of the Canadian Medical Protective Association. The following is taken from their information booklet:¹²

"If you are faced with serious complaints or threat of suit:

1. Say that the work you did was the best of which you were capable.
2. Notify the Association at once. . .
5. Do not discuss the case with anyone. . .
8. Do not tell patients you are a member of this Association, suits are more likely if patient thinks money is obtainable from an organization."

The rate for psychiatrists for malpractice insurance is \$950 in Canada, \$50 in Norway. (For "riskier" specialties, the differences are even more striking: a neurosurgeon, for example, is in Norway paying the same premium as a psychiatrist, i.e. \$50, in Canada \$9800!)

The number of malpractice suits is much smaller in Norway than in Canada, and in most cases it is the hospital that would be sued, not the individual physician.

We believe that this situation makes Canadian physicians:

- a) admit patients more frequently
- b) delay discharging them, and
- c) have to take more responsibility than necessary (and desirable?) in order to cover themselves.

Psychologists

In Canada, at least as we have seen in Halifax, psychologists work as consultants and are not actively involved in therapeutic work in the wards as they are in Norway. There is more emphasis on testing, and they have a very high level of neuropsychological knowledge.

In Norway, psychologists are involved in clinical work on the wards as members of the therapeutic teams. Sometimes they are leaders of such teams, and function more or less on the same level as the psychiatrists.

These differences are probably explained by differences in education, by the stronger position of the psychiatrists in Canada, or maybe the Canadian psychologists prefer to be in this consultative situation?

The Norwegian experience is that psychologists can give valuable contributions to clinical work both in inpatient and outpatient settings, and the Canadian system may therefore seem a little extravagant when it comes to manpower.

On the other hand, the high level of knowledge about neuropsychology and testing skills would be very useful in Norway.

Nurses

The nurses' working situations are more similar. Differences are:

- a) Norway offers a fairly broad two-year post graduate education in psychiatric nursing which gives a good basis for working as psychiatric nurses. In Canada there is no such formal education, but many nurses take post graduate education in different fields relevant to psychiatry.
- b) The nurses in Norway have more responsibility and are more involved in therapy than in Canada, even if the Canadian nursing profession seems highly qualified and have developed (at least in Halifax) an impressive nursing assessment routine. The problem is perhaps that they are not allowed to use their knowledge as much as they could. Neither in Norway

nor in Canada does it seem as if nurses are given enough credit for their education and therapeutic skills.

Other Professions

Other health professionals have quite similar working situations in the two countries.

Occupational therapists in Canada are consultants in the same way as the psychologists, providing assessments regarding level of functioning, planning for and developing necessary skills for life outside the hospital. In Norway, their emphasis is more on therapy, called 'ergotherapy', and considered to be an important part of the overall treatment plan.

Another professional group normally present in psychiatric departments in Norway is the physiotherapists. Quite often they have special postgraduate education in psychiatry. This is apparently not the case in Canada.

"Professionalism"

The 'battle' between the professions is inevitable and due to many factors. As long as a strong hierarchy exists, with unfair differences in power, salary and prospects for professional development, this battle may be detrimental to the professions and the patients. Each professional group has a legitimate need for defining its role and the content of its work. If this process is hindered, a situation of destructive competition may develop, causing burn out and bad patient care as a final result.

In Norway this battle was intense a few years ago: between physicians and psychologists, physicians and nurses, nurses and social workers, nurses and nursing aides, and everybody against the physicians. Each profession tried to come up with a definition of what made them special, and tried to get credit for this among the other professions. Then, on the other hand, all professions tried to be equal in the sense that everyone wanted to be therapists.

Nurses especially had a hard time getting rid of their "Florence Nightingale complex" — their submissive position as physicians' helpers, and the physicians had a difficult time in adjusting to the nurses' new and more independent role. The battle has now calmed somewhat.

In Canada, on the other hand, we now see signs of an increasing tension, especially between the nurses and the physicians.

From our experience from Norway we would recommend not resisting the change in the direction of more equality in the possibilities for professional development. Otherwise there is a danger of overreactions.

PSYCHIATRIC PATIENT POPULATION

Since the cultural differences are not very large, there are no major differences in the way psychiatric problems present either. The differences are in how the problems

are dealt with by the patients, their families and the professions. The differences are probably as large within each country (urban vs. rural, north vs. south) as they are between the countries.

Diagnosis

Table VI shows the diagnostic spectrum in four populations: Canada total (psychiatric hospitals and psychiatric departments in general hospitals together); psychiatric departments in general hospitals in Canada; one psychiatric department in a general hospital in Halifax; and one psychiatric department in a general hospital in Oslo with a comparable catchment area.

TABLE VI
DIAGNOSTIC CLASSES (PERCENTAGES)

	Canada Total 1982-83 ICD9	Canada Gen.Hosp. Total 1982-83 ICD9	Camp Hill Hosp. 1985-86 ICD9 (DSMIII)	Ullevaal Hospital Oslo 1986 ICD8
290 Senile Psychosis	3	4	2	3
291 Alcohol Psychosis	3	4	1	7
295 Schizophrenia	15	12	22	12
296 MAD	14	14	32	7
297-299 Other "Nonorganic" Psychosis	5	6	1	25
300 Neurosis	14	20	3	27
301 Personality Dis.	5	4	8	6
303 Alcohol Dep.	12	11	5	5
309 Adjustment Dis.	4	4	11	N/A
311 Depr. Dis. NEC.	7	8	6	N/A
Other Diagnoses	16	13	8	6
TOTAL	99	100	100	100

The large differences cannot be explained by differences in the patient population, but is more likely due to differences in the way patients are classified. This is not only a semantic problem — it also has therapeutic implications which will be discussed later.

We have to be very careful when comparing diagnostic statistics from different countries since the classification systems are different. Norway was in 1986 still using ICD8¹³ (ICD9 from 1987) while Canada was using ICD9,¹⁴ but DSM III concepts are used in parallel in both countries.¹⁵ Some differences in the table need comment:

- The high number of "other nonorganic psychosis" in Norway is a reflection of the commonly used diagnosis "reactive psychosis".
- There seems to be an over diagnosis of Major Affective Disorder (MAD) in the Halifax material while the Oslo material has a high level of depressive neurosis (16%). The classifications of effective disorders, especially depression, makes for difficult comparison. Patients are given several diagnoses: "MAD, depressed"; "depressive neurosis" (which is different from "dysthymic disorder" although it has

the same diagnostic number); "adjustment disorder depressed"; and "depressive disorder not elsewhere classified".

- c) The high number of psychotic patients in the Oslo material can be explained by the very "acute" patient population, the high turnover and a selective admission policy.

Therapy

All major therapeutic techniques are of course used in both countries but, as mentioned, the biological approach is more developed in Halifax. The high prevalence of the diagnosis MAD in Halifax is reflected in a much more common use of ECT and lithium than in Norway. ECT is seldom used in Norway and then almost only for deep melancholia.

The use of major tranquilizers is similar, but in Norway benzodiazepines are used less, and MAO inhibitors are not registered because of their side-effects. All in all, there are also fewer drugs on the Norwegian market due to strict government control and registration. In both countries drugs are used in situations where other therapeutic techniques would have been better. It is always important to ask whether the therapy may contribute to an increased pathology. We also feel that the context outside the traditional therapeutic setting is very important and should be used therapeutically much more than at present in both countries.

POSTGRADUATE EDUCATION IN PSYCHIATRY

It is beyond the scope of this article to address every aspect of the educational system for every profession involved in the psychiatric field. We will therefore only consider the differences in postgraduate psychiatric education for physicians, but some of the comments are applicable to postgraduate education for other professions in psychiatry as well. The main differences are shown in Table VII.

TABLE VII

POST GRADUATE EDUCATION IN PSYCHIATRY

	Canada	Norway
Length	4 years	min. 5 yrs. Average 6½-7 yrs.
Organization	University program Applications to the university	Clinical jobs with educational possibilities if wanted. Applications to the hospital. The universities not involved. Each hospital responsible for their own educational program controlled by the Ministry of Health.
	Fixed periods of work in each setting, 3-6 months "school system"	No fixed periods. Usually at least 1 year in each place. No "school system".
	Formal oral and written examinations	No examinations

The best aspects of the Canadian system are:

- better quality control (of certain aspects?)
- emphasis on education and research in addition to clinical experience
- good connections between the clinical departments and the universities.

The disadvantages seem to be:

- too short periods in each location
- too short training period overall (?)
- emphasis on knowledge rather than personal skills (does the system create "streamlined psychiatrists"?)

The best aspects of the Norwegian system are:

- there is enough time to get to know the wards
- it allows for individual interests
- strong emphasis on personal skills.

Disadvantages are:

- weak links to the university environment
- the quality of education may vary depending on geographical location of training position
- less formal quality control

We are very impressed with the educational system as we have seen it at Dalhousie University. The close relationship between the teaching hospitals and universities could be applied with great benefit in Norway.

CONCLUSION

This comparison between psychiatry in Norway and Canada has led us to conclude that the two countries are quite similar. The Norwegian health care system is more homogeneous than the Canadian, but then Canada is also a much larger and more diverse country, with much more power delegated to the provinces. The trend towards deinstitutionalization has gone further in Norway, and the psychiatrist has a less dominant position than in Canada. The neurobiological basis for psychiatric treatment is strong in Canada (Halifax), while Norway has a strong psychodynamic and sociopsychiatric tradition. This is reflected in differences in diagnostic habits as well as in treatment procedures.

There are substantial differences in the postgraduate psychiatric education in the two countries, and both education systems could probably be improved by each carefully examining the other and incorporating its best features. □

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References on page 137

Attention-Deficit Hyperactivity Disorder

A DIAGNOSIS TO BE CONSIDERED IN ADULT PSYCHIATRY?

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Since the beginning of this century, certain children have been identified with problems of inattentiveness, impulsivity and hyperactivity. All these merge into normal behaviours but cause difficulties because of their extremes. Once the syndromal quality of these difficulties was recognized, various labels began to be applied. The earlier labels were descriptive (for example, hyperkinetic reaction and hyperactive child syndrome) but later became based on proposed but unproved etiologies; minimal brain dysfunction and attention deficit disorder being the most frequently used.

DMS III considered attention deficit disorder (ADD) as consisting of inattention and impulsivity, in each case three points having to be met from a list of criteria (such as "fails to finish things" or "needs a lot of supervision").¹ Hyperactivity could or could not be present in addition to the inattention and impulsivity. A residual state was recognized in which the individual once met the criteria for ADD with hyperactivity (ADHD) and the signs of hyperactivity were no longer present, but other signs had persisted and continued to cause problems socially and/or occupationally. ADD, or its residual state, could not be diagnosed when secondary to other psychiatric or neurological problems such as schizophrenia or mental retardation.

The DSM III Revised diagnosis of Attention-Deficit Hyperactivity Disorder (ADHD), does not divide criteria into different categories but requires a total of at least eight out of one list of fourteen criteria be met, thus eliminating the old distinction between ADD and ADHD.² Onset must be before the age of 7 years and a history of at least six months is required (as before). This diagnosis can be made in children with mental retardation if the relevant symptoms are excessive for the child's mental age, but not in a child with Pervasive Developmental Disorder. An index of severity (mild, moderate or severe) is also given. If signs of impulsiveness and hyperactivity are not present, the diagnosis of Undifferentiated Attention-Deficit Disorder applies.

We know these children do poorly socially and educationally with resulting low self esteem, and it is these problems that often lead to presentation. We also know that drug treatment is available to increase concentration and decrease levels of motor activity in the short term; behaviour modification also giving benefits especially if used in conjunction with medication. What

we do not know is how long treatment is required, if it is of benefit in the long term or even if it causes harm. Do children grow out of ADD as they mature and if not, what becomes of them as adults?

Considerable problems exist in attempting to answer these questions. In Britain ADD was not felt to exist as a clinical entity; the closest equivalent diagnosis being "hyperkinetic syndrome". This consists of severe pervasive over-activity occurring in all situations and is associated with short attention span and distractibility. Most children given this diagnosis have mental retardation or a major neurological disorder such as epilepsy, though it is theoretically not incompatible with a normal I.Q. and neurological functioning. No specific etiology is proposed, the disorder being felt to arise in a number of ways, including being a feature of developmental delay, form of high anxiety or iatrogenic, (as with phenobarbital for epilepsy), and only some cases are felt to be associated with poor attention span, emotional lability and impulsiveness. The prevalence of hyperkinetic syndrome is thus much lower than the prevalence of ADD, Rutter's Isle of Wight study giving a prevalence of 0.1% of children with hyperkinetic syndrome, compared to figures for Canadian children of around 3% with ADD.³ This leads to considerable difficulty in comparing work from the two sides of the Atlantic! Similar problems exist, but to a lesser extent, between Canada and areas of America.

DSM III R is too recent for papers to have been published using its criteria and the DSM III had only been in use since 1980. Our British colleagues claim that the diagnosis of ADD was inconsistent, varying from centre to centre, even with the use of diagnostic criteria. Prior to DSM III more variation in diagnosis is seen, both across time and geographically, ranging from the restrictive European approach to an overinclusive group of fairly active but normal children. Hyperactivity is a popular diagnosis, one-third of mothers in Britain and one-half of mothers in the U.S.A. claiming their normal children are hyperactive, if asked. Scientific methods have also changed and measures advanced, tests used even as recently as the 1960s appearing crude by today's standards.

Despite these difficulties some clear trends are emerging. Several theories have been proposed over the years as to the etiology of ADHD and hence its expected outcome. Some feel it represents a developmental lag in which children are developing along the right lines but at a slower rate than normal. Symptoms are expected to

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disappear by adolescence as a result of maturation of the central nervous system, and the syndrome is therefore of little concern to adult psychiatrists. Others suggest that core symptoms reflect a permanent problem in cognition and expect them to persist, resulting in a residual state with other symptoms, such as a low self esteem, arising out of this. Concerns have also been raised that ADHD may represent a predecessor to more serious psychopathology such as antisocial personality disorder or schizophrenia in adult life.

ADHD is usually diagnosed at around the age of 8 when children are expected to be settling down to more serious school work. We are fortunate that Campbell identified "hyperactive" preschoolers in a research nursery at the age of four.⁴ These children were followed up at 6½ and 7½ years of age by which time they were in school. Teacher ratings and individual assessment showed the group were receiving more negative feedback from the teacher, (despite the presence of the observer tending to increase positive behaviours towards the child under study), and were already expressing low self esteem more often than their peers. Teachers rated them as significantly more active and they were engaged in more disruptive behaviours than the controls.

This study would seem to indicate that hyperactivity persisted even from an early age, but Heussy's study of 500 children in grade two (when aged 7½ years) and later in grade five, did not entirely confirm this.⁵ All 500 children were rated by their teachers on various scales and the top 43 designated as "problem children" in the initial study. Two and a half years later, on retesting, 14 of the original "problem children" remained in this group, the other 27 having shown major changes and joined the ranks of "normal" children. Of the 14 who continued to have problems, 3 were in special classes and 2 had needed to repeat a grade. These were joined by 27 children previously considered to be "normal" but now showing a major change in score that placed them in the "problem" group. Only one child in this group, which consisted predominantly (80%) of boys, had needed to repeat a grade. Although this would seem to indicate variation over time in symptoms within an individual, the children were identified by a screening questionnaire and were not experiencing problems severe enough to lead to referral to a child psychiatrist.

Weiss *et al.* followed a group of children who had been diagnosed as being severely handicapped by hyperactivity between the ages of 6 and 13 years old. (All had an I.Q. of over 84 and no major brain damage or dysfunction, such as epilepsy). The group were re-examined at about 5 and 10 years after the initial assessments.^{6,7} At the 5 year follow up, the children were aged 10 to 18 years old. Hyperactivity was no longer the main complaint, although 30% of mothers reported their child as "restless". In class, more sedentary activity (such as pencil twiddling), had replaced the previous locomotor activity, hyperactivity being expressed in less distressing ways. Distractibility was the main complaint

of 46% of mothers and in addition the children had also begun to complain of difficulties in concentration. However, levels of distractibility had reduced on neuropsychological testing, though they were still not in the normal range.

Aggressivity scores had also decreased (but again not to normal levels) although 25% had a history of antisocial behaviour resulting in 10 children (out of 64) having had court referrals. This correlated with initial findings of high levels of aggression and "pathological" families in which child rearing practices were punitive, the mother-child bonding poor and the parents likely to have psychiatric diagnoses. It was not correlated with the degree of hyperactivity or impulsiveness, socio-economic class or I.Q.

Poor academic functioning was found in 80%, having persisted from the earlier study; i.e., the children had neither fallen further behind nor caught up with their peers. Fair or good academic performance correlated with I.Q. and not the degree of hyperactivity or impulsivity.

Other problems identified were of emotional immaturity (70%), a lack of steady friends (30%) and lack of ambition (30%). No child was psychotic, and although 3 showed schizoid traits, these had been present initially but masked by the degree of hyperactivity.

These results were supported by a five year follow up by Hoy *et al.* of 15 children diagnosed as having ADD and pre-selected controls.⁸ On neuropsychological testing the ADD group showed worse scores in sustained attention, visuomotor and motor tasks, and half of the reading tasks. They also reported lower self esteem and sociability on self rating.

At 10 year follow-up Weiss' group of hyperactive children were 17 to 24 years old.⁷ None had been treated with methylphenidate, though chlorpromazine and other drugs had been used to a variable extent. Unfortunately, the controls used were not the same as at 5 year follow-up, but clear differences still emerged, the ADD group having been involved in more car accidents, made more geographical moves and received less education. In addition they were more likely to describe their childhood as unhappy. Only 5 (out of 75) subjects were still involved in sociopathic behaviour. Of these, one was in jail and one in a boys detention home. A third subject had "jumped jail" the day before and was unavailable for interview!

No difference was found between the two groups in job status and satisfaction, employers ratings of ADD employees showing no significant difference from controls. However, of the children still at school, teachers ratings were significantly inferior in the ADD group.

Subjects showed a trend towards being more involved in selling non-medical drugs over the previous five years but not the previous year, and a significant difference in

rates of non-medical drug abuse over the previous five years but again, not over the previous year. This would seem to indicate that the ADD group were changing in drug habits towards the norm with increasing age. Interestingly, the control group had used significantly more hallucinogens than the ADD group who had used very little! It was noted that some symptoms of ADD still persisted, mainly that of impulsivity.

Gittleman also published a 10 year follow-up of children identified as being hyperactive when between the ages of 6 and 12, using siblings with no history of behaviour problems as controls.⁹ This was an extensive study in which 90% of the original controls were retraced, giving 101 children who had ADD and 100 controls. Using DSM III criteria, ADD could still be diagnosed in 31% (compared with 3% of controls). One of the features of interest of this paper is that, in contrast to the DSM III definition of the residual state, any two of the triad of hyperactivity, impulsivity and inattentiveness had persisted; hyperactivity not necessarily being the symptom that disappeared over time. Furthermore, if only one of the symptom cluster persisted, there was no difference between this subgroup and controls. This would seem to support the syndromal quality of the disorder in adolescence and early adulthood.

Conduct and substance abuse disorders were significantly more common in probands with continuing ADDH, the former having initially been screened out as well as could be determined. The 27 probands with conduct disorder on follow-up included 48% of the subgroup considered to still have ADD and only 13% of the subgroup no longer supporting the diagnosis, representing a significant proportion of the ADD group. Furthermore substance abuse followed development of conduct disorder in most cases; substance abuse not occurring in any of the group who were not conduct disordered. It would appear that the continuation of ADDH increases the risk of development of conduct disorder, in turn leading to substance abuse in a substantial number of patients.

Satterfield *et al.* have been following a large group of previously diagnosed hyperactive children and normal controls, specifically recording official arrests.¹⁰ Rates of both single and multiple serious offences are higher in the hyperactive group, 46% of them having been arrested at least once. Rates of institutionalization are also higher, (27% compared with 1% of controls), and social class does not appear to have the same protective effect against offences and arrests as it did in the normal group. This confirms Gittleman's study that a substantial number of hyperactive children develop secondary antisocial behaviour in adolescence.

Although Weiss' 10 year follow-up had found no difference in socio-economic class of the ADD group, this did not agree with Borland's earlier work.¹¹ A retrospective diagnosis of hyperactive child syndrome was made by examining 25 year old charts. Subjects were

then traced and interviewed with their brothers, who acted as a control group. 18 of the 20 probands had completed high school, were steadily employed and self-supporting, but despite normal I.Q.'s, had not achieved the socio-economic class of their fathers or sibs. One half continued to show symptoms such as impulsivity and a half had psychiatric problems. It was suggested that these emotional problems resulted from the persistence of symptoms and that social and psychiatric consequences related to the presence of hyperactivity in childhood as well as its persistence into adult life.

Even adults who have done well despite ADD may later encounter problems when placed under stress that emphasizes their difficulties. Shelley identified 16 adults (14 male, 2 female) who had not received a diagnosis of ADD as a child but who showed evidence of dysfunction as adults.¹² They were all in the Air Force and had been referred with difficulties in learning basic tasks such as marching and folding equipment as required! In addition, enquiry showed them to be irritable, anxious, emotionally labile and self depreciatory. Most complained of having poor concentration and all gave a history of impulsiveness and aggressiveness as children. However, symptoms had improved with age and allowed school performance to rise, with high school being completed. Some had gone on to complete college and all had been accepted for the forces. None had psychiatric problems or problems with peers and they had previously avoided situations requiring perceptual motor competence.

Menkes' study of 14 subjects 25 years after having been seen at the Johns Hopkins Clinic is more concerning.¹³ On follow up 4 were psychotic, 2 mentally handicapped and dependent on their families and 4 had spent time in institutions. However, 4 had an I.Q. of less than 80 and 6 came from the lowest socio-economic group.

Reider and Nichols study of the children of schizophrenic fathers showed high rates of ADD but this tended to settle when the children were fostered or adopted.¹⁴ It seems unlikely that this represents a pre-schizophrenic state. Menkes and other studies have found psychosis in later life in some ADD children.¹³ However, when I.Q. is controlled as in Weiss and Hechtman⁷ and in the study by Gittleman *et al.* no excess of psychosis is found.⁹

It would seem that a few children with ADD learn to cope with their difficulties and go on to have a normal or near normal life, but most continue to show difficulties attributable to ADD, such as impulsivity, low academic achievement (for I.Q. and social background) and low self esteem. Unlike the delinquency of antisocial conduct disordered children most seem to gain sufficient control by the time they are adults and do not continue to show an excess of court referrals. Although some studies include ADD children who become diagnosed as personality disordered in adulthood, this is not a

usual or expected outcome and may be the result of other factors, or represent a small subgroup of ADD children.

Despite subjects' increase in concentration with methylphenidate, there is no clear evidence yet that treatment leads to better academic achievement in the long run. Unfortunately many of the studies do not mention if drug treatment was given. Weiss and Hechtman's study included children who had been given chlorpromazine.⁶ Laufer followed up, by questionnaire, 100 children originally put on methylphenidate 12 years prior to his study.¹⁵ Only 66 replied, and of these 50 had required special schooling, though 14 of the 37 college aged children were at college. 59% had received further psychiatric help and 30% had been involved with the law, though none were in prison at the time of the survey. It would appear that the use of methylphenidate as a child had not had profound long term effects. However, children given methylphenidate only show its effect when they take the drug — it does not cure but relieves the symptoms of poor concentration and restlessness.

It has therefore been questioned whether adults with symptoms suggestive of ADD or the residual state should be given methylphenidate. Research seems to suggest that this is indeed the case. Wender *et al.* identified adults who met the DSM III criteria for ADD and ran a double blind trial of placebo and pemoline.¹⁶ Both led to improvement, with no significant difference. However, if the group with a childhood history suggestive of ADD at that time were examined separately, pemoline showed a significant advantage to the placebo. It was noticeable that subjects tended to consistently underestimate response to treatment and that parents or spouses gave more accurate feedback.

Klorman *et al.* studied 19 adolescents with a childhood diagnosis of ADD.¹⁷ A double blind cross-over trial of methylphenidate or placebo showed a slow reduction in inattention, overactivity and non-compliance on parents and teachers weekly ratings. In addition, on interview there was less dysphoria. The previously treated group did not differ from the never treated.

Earlier, Wood *et al.* had tested the hypothesis that "minimal brain dysfunction" continues into adulthood.¹⁸ They identified 15 adults with features that they felt were suggestive of minimal brain dysfunction, such as irritability. Looking at their histories, diagnoses of antisocial personality disorder or generalized anxiety disorder could well have been given as adults. Eleven were given a trial of methylphenidate, 8 of whom responded. All 15 were given trials of pemoline and imipramine or amitriptyline. Of the 15, 8 showed a good response to any of these drugs. Two showed a moderate response and 5 were unresponsive.

It would therefore appear that treatment with stimulants can be of benefit in adolescence and early adulthood. In patients who present with anxiety, low

self esteem and irritability as adults, enquiring into childhood symptoms of ADD may enable us to offer relief of symptoms in appropriate cases with methylphenidate or other psychostimulants, possibly allowing for psychotherapy to deal with problems arising from a lifetime of hardship. ADD is not only a diagnosis relevant to child psychiatrists, but should be borne in mind when adults present with long standing problems suggestive of this disorder. □

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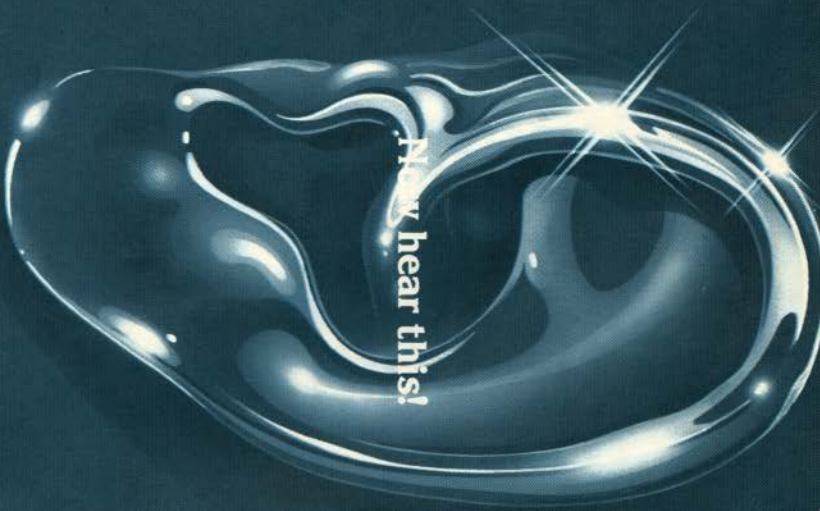
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Hypotheses always remain hypotheses, that is, suppositions to the complete certainty of which we can never attain.

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The Vital Component: Cardiac Rehabilitation

Crystal Hennigar,*

Halifax, N.S.

Cardiac rehabilitation has greatly advanced since the 1950s when post-MI patients were treated with six weeks of complete bedrest in the hospital. As a result, these patients suffered such complications as severe deconditioning and venous thrombosis. Now we witness patients without any complications going home after an average stay of ten to fourteen days. This vast improvement is based on the rehabilitation which the patient receives while in the hospital. This includes early and progressive ambulation and having the patients engage in their normal self-care. To prevent complications and to continue with this autonomy after discharge from the hospital, the patient must continue with his/her rehabilitation.

There are programs throughout Nova Scotia which allow the post-MI patient to continue with this progression of normal activity and merge into a normal way of life again. These provincial programs are listed in the conclusion of this article.

Cardiac rehabilitation consists of all efforts aimed at restoring or maintaining the cardiac patient to his/her optimum level of psychological, physical, social and vocational function. Goals of cardiac rehabilitation include:

- the delay or prevention of complications
- prevention or reversal of deconditioning
- improvement in ability to participate in chosen activities (e.g. exercise, work, sex)
- minimization of time away from work
- improvement in psychological adjustment
- identification of risk factors.¹

Physical training programs provide many benefits to the post-MI patient. Research indicates that such programs improve physical work capacity and decrease systolic blood pressure, heart rate and myocardium oxygen requirements at submaximal levels of work. An increased level of high density lipoproteins and decreased serum cholesterol have also been proven to result from exercise programs.²

Though there is an absence of conclusive research proving the reduction in morbidity and mortality from this exercise training, the improved quality of life which results provides the participants the greatest advantages. Along with the stated physical benefits, the psychological ones include:

- diminished feelings of anxiety and fear of engaging in normal activity
- improved self-confidence

- more balanced emotional stability.³

These positive outcomes can be traced to the group support which develops among the members of the class and helps alleviate the reactive depression which commonly occurs after an MI.

These components of exercise training and group support are integrated in the rehabilitation programs throughout Nova Scotia.

The *Change of Heart* program provided by the Preventive Medicine Centre at the YMCA of Metro Halifax, is an example of such a service. Membership includes men and women of all ages who have suffered an MI. They must first obtain a referral from their physician to be able to participate in the *Change of Heart* classes. The physician co-ordinator of the program administers a fitness test which helps in formulating an individualized exercise prescription. This regimen may consist of walking, jogging or peddling a stationary bike. The group convenes two evenings a week to "fill" their fitness prescription in the presence of a qualified physician and two cardiac nurses. A physical fitness instructor also leads a ten-minute warm-up and ten-minute cool-down during the fitness session.

Supplementing the exercise classes are education and support components. Once a month the members can attend an educational lecture given by a guest speaker on health-related topics. These discussions concentrate on promoting a healthy post-MI life. A group discussion time for the spouses and family members of the MI victims is also provided.

This Halifax program is similar but not identical to other programs in the province which differ slightly in their format. These provincial programs include:

The Aberdeen Hospital and Pictou County "Heart Pacers", with Dr. John Williston as Medical Director and Phyllis Glenn as Nursing Co-ordinator.

The Bridgewater "Have A Heart" program, co-ordinated by Dr. Ron Hatheway and Carol Tawse.

The Sydney and District "Heartbeats", co-ordinated by Dr. Bev Trask.

It is of great benefit to the community if health professionals can enhance the life and health of those having suffered a traumatic event such as a myocardial infarction. It is obvious that a physical training program for our post-MI patients is a step toward a healthier lifestyle which increases the quality of life — a goal of the health profession. □

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References on page 129.

The Marine Vibrios

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Marine vibrio infections have recently become of interest with the reporting of three cases from the Maritime region. A number of reports of environmental studies show that at particular times of the year these organisms can result in clinical infections. Most infections are related to saltwater and symptomatology can vary from enteritis to septicæmia. In order to recognize these pathogens an understanding of their epidemiology is essential and for effective therapy their presence must be suspected in clinical situations.

To most health care professionals practising in Nova Scotia today, the name vibrio conjures up descriptions of classical *Vibrio cholerae* infection. And while Nova Scotia is no stranger to the ravages of this enteric pathogen, the last case was reported prior to 1924. Occasional cases may still be detected, but true *Vibrio cholerae* infection is now generally an imported disease in Canada, mainly from outside North America. The last case was reported in 1986 from Ontario province.

Previous medical-school teaching on the vibrio group of organisms centered around *Vibrio cholerae* and its ability to cause potentially fatal fluid loss in the unsuspecting tourist who ingested contaminated water or foodstuffs. Texts were replete with descriptions of cholera beds and occasional photographs of survivors surrounded by large numbers of expended intravenous-fluid containers, testimony to the unique fluid depletion which occurs in this disease. For most of us, we thought, the main possibility of seeing vibrio infection resided in the chance acquiring of cholera while on foreign travel.

This is not the case. At least three published reports indicate vibrio species are not unusual in our local environment.^{8 20 25} These reports describe the finding of marine vibrios in clinical infections, environmental samples and fish products associated with our coastal waters. This is, initially, somewhat surprising as most published reports of vibrio infections relate to warmer climates but, as we previously pointed out,⁸ our coastal waters can and do reach surprisingly high temperatures for short periods of the year.^{20 9} These temperatures are sufficiently high to allow the proliferation of marine vibrio species and thereby increase the likelihood of their causing human infections under appropriate circumstances.^{3 12} The period of time in which our marine

environment is most used is also the time when marine vibrio numbers will be at their highest.

Historically, most interest has centered on *Vibrio cholera*, subsequently renamed *Vibrio cholerae*. In 1980, the vibrio genus and a biochemically related genus Beneckea were re-evaluated and most members reclassified into the vibrio genus. *Vibrio cholerae* has been subdivided into 01 and non-01 strains. Non-01 strains, while non-halophilic, are unable to cause cholera as they lack the ability to produce the necessary cholera toxin and behave in the same manner as marine vibrios. 01 strains on the other hand are true *V. cholera* and cause full blown cholera. Strains are designated 01 or non-01 on the basis of easily detectable surface antigens. Since 1980, a total of 26 members of the vibrio genus have been described but only 11 members have, up to now, been shown to be true human pathogens (Table 1).

TABLE 1
CLASSIFICATION OF THE VIBRIO GENUS

Human pathogens		
Non Halophilic	Halophilic	
Vibrio cholerae	<i>V. algenolyticus</i>	<i>V. metschnikovii</i>
01 and non-01	<i>V. furnessii</i>	<i>V. parahaemolyticus</i>
<i>V. mimicus</i>	<i>V. fluvialis</i>	<i>V. vulnificus</i>
	<i>V. damsela</i>	<i>V. cincinnatiensis</i>
	<i>V. hollisae</i>	
Non human pathogens		
	<i>V. aestuarianis</i>	<i>V. natriegens</i>
	<i>V. anguillarum</i>	<i>V. nereis</i>
	<i>V. campbelli</i>	<i>V. nigrripulcritudo</i>
	<i>V. costicola</i>	<i>V. ordali</i>
	<i>V. diazotrophicus</i>	<i>V. orientalis</i>
	<i>V. fischeri</i>	<i>V. pelagius</i>
	<i>V. gazogenes</i>	<i>V. proteolyticus</i>
	<i>V. harveyi</i>	<i>V. splendidus</i>
	<i>V. loei</i>	<i>V. tubiashii</i>

It must be remembered that at one time or other most marine vibrios have been described as non-pathogenic for humans so there is potential for this group to become larger. Bachman¹ in 1983 described only six recognized pathogenic members of the vibrio genus at that time and the most recent addition to the pathogenic group, *V. cincinnatiensis*, was included in the list of pathogens in 1986.⁴

The term "marine vibrio" first appears in relation to human infections in *The New England Medical Journal* in 1979.² Up to that time, and to a lesser extent since then, non-cholera vibrios were called halophilic vibrios. This name both distinguished them from *V. cholerae*

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and noted one of their most characteristic features, tolerance and dependence on NaCl in the support medium used to culture these strains in the laboratory. Attempts to isolate them requires special media containing at least 1% to 2% NaCl added to the medium. While most laboratory media do contain NaCl, the concentration is around 0.25% to 0.5% or less and is sub-optimal for most marine vibrios except *V. mimicus*. *Vibrio mimicus* acquires its name from its similarity to *V. cholera*, but only under laboratory conditions. *V. cholerae* on the other hand will grow at these low salt concentrations.¹⁵ These characteristics allow for easy differentiation and identification of the two groups in the routine laboratory. Because of these special requirements, some indication is required for the laboratory to provide optimal conditions for recovery of the organisms from clinical specimens.

The name marine vibrio, on the other hand, is more descriptive of the natural reservoir and situations in which human infections are likely to be acquired. Marine vibrios can cause two main types of infection in humans: gastroenteritis and/or extraintestinal infection. Extraintestinal infections can be either superficial or deep tissue pyogenic infections, sometimes with accompanying septicaemia. Which of these clinical presentations will predominate, depends on the infecting strain of vibrio and the route of entry into the host. Table II shows the common presentations of the marine vibrio group. Note, only two species can give rise to both soft tissue and gastrointestinal symptoms: *V. vulnificus* and *V. parahaemolyticus*. The remaining eight species are confined to one or other clinical role.

TABLE II
CLINICAL PRESENTATIONS OF
MARINE VIBRIO INFECTIONS

Species	Gastrointestinal symptoms	Other symptoms
<i>V. damsella</i>	none	common
<i>V. alginolyticus</i>	none	common
<i>V. cincinnatiensis</i>	none	common
<i>V. vulnificus</i>	rare	common*
<i>V. parahaemolyticus</i>	common	rare
<i>V. fluvialis</i>	common	none
<i>V. mimicus</i>	common	none
<i>V. hollisae</i>	common	none
<i>V. furnissii</i>	common	none

** only one case reported (see text)

The following case history highlights some of the salient features in acquiring non-enteric marine vibrio infection.

CASE HISTORY

M.S. was a 27 year old male in previously good health. He worked aboard a factory trawler off the east coast of Canada for about one year. In September 1987, he was attending a fish auger aboard his trawler when his left hand became trapped in its mechanism. His injuries

were considered severe and he was air-lifted to shore and admitted to the Victoria General Hospital.

On admission, five hours after the incident, his wound was described as foul-smelling and grossly contaminated with fish tissues. Swabs taken, following cleaning of his wounds, subsequently grew *Proteus mirabilis* and *Pseudomonas aeruginosa*, and two unidentifiable gram negative rods eventually identified as *Vibrio alginolyticus* and *Vibrio furnissii*. Following examination, it was decided that amputation of the hand was the only feasible course of action in view of the severe crush injuries received. At this time he was afebrile with no systemic signs of infection but he was treated with penicillin, tobramycin and cephalixin. Recovery was satisfactory and he was discharged on the 18th post-operative day.

DISCUSSION

This case history and three others previously described illustrate the close association between marine vibrios, either recreational or work-related activities, and seawater.⁸ Most cases occur during the warmer months of the year. Numerous reports describe associations including insect bites while at sea, pneumonia following near drowning in seawater, immersion of previously abraded skin in seawater, contamination of C.A.P.D. equipment while scuba diving and shark bite contamination.^{1 16 23 13 6 24}

It is also notable in many of these reports that patients have had underlying diseases including alcoholism, diabetes mellitus or other immunocompromising processes. Recovery is the usual outcome in most cases but infections are frequently severe. While the amputation process in the above case was for unrelated purposes, it served to remove the infecting organisms. The severity of extra-intestinal infections is considered to be a product of a number of necrolytic enzymes produced by these organisms and their antiphagocytic surface capsules. These necrolytic activities promote septicaemia as a common accompaniment of tissue infections.¹⁴

Enteric infections due to marine vibrios have been documented for many years, and *V. parahaemolyticus* infection in Japan was the first.²¹ Since then, enteric infections due to marine vibrios have been recorded from most countries including Canada. While all marine vibrios are heat sensitive, practices of consuming raw or mildly cooked seafoods have been instrumental in promoting gastroenteritis. Pathogenic factors e.g. haemolysins, responsible for the Kanagawa test, have been shown to be capable of inducing enteritis in animals. Extension through the bowel wall may also occur causing septicaemia.²²

Therapy for marine vibrio infections falls into one of the following three modalities:

A) *Gastrointestinal disease*. Antibiotic therapy is not required for this group of patients. The disease process is

seldom life-threatening and therapy consists mainly of supportive measures, electrolyte and fluid replacement.¹⁰

B) *Tissue infections* require both prompt debridement of the primary focus and antimicrobial therapy. Evidence from individual case reports and animal experiments indicate that while most marine vibrios are generally sensitive on susceptibility testing to commonly used antimicrobials, individual isolates can vary. Experience, from the same sources, has shown in-vivo responses to most antimicrobials are less than satisfactory, even to antimicrobials indicated as being effective on susceptibility testing. Tetracycline sensitivity is one of the more stable susceptibility results and clinically it has been shown to be the most effective antimicrobial, both for experimental and clinical infections.^{17 18 19 7 11 5} Because of the particular virulence of *V. vulnificus*, this pathogen should be suspected in all saltwater related infections and tetracycline included in antimicrobial therapy either from the outset or added when there is an unsatisfactory response.¹¹

With this regimen most other marine vibrio infections will be automatically treated. Unfortunately staphylococcal, gram negative and some streptococcal infections may not give a satisfactory clinical response to the above regimen and isolation plus identification frequently are necessary to indicate optimal therapy. Fortunately marine vibrio infections are rare outside the well-defined circumstances described above and index of clinical suspicion may be used to guide therapy.

C) *Septicaemia* can occur as a result of soft tissue infection or gastroenteritis. In either situation septicaemia is the main factor requiring antimicrobial therapy. Comprehensive studies have not been reported but evidence exists, that for optimal therapy, tetracycline must be included in the antimicrobial regimen.⁵ Like other gram negative rods, marine vibrios contain endotoxin and can produce potent exotoxins resulting in endotoxic shock and disseminated intravascular coagulation which can comprise a satisfactory outcome to therapy.¹¹

Recent widely reported events have demonstrated the impact of marine related infections in our society. Although marine vibrios are unrelated to mussel toxin episodes their importance has, in the past, not been fully acknowledged. Methods of preventing these infections must begin with a wider understanding of their epidemiology and pathogenic potential. □

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THE VITAL COMPONENT: CARDIAC REHABILITATION Continued from page 126.

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Cystic Fibrosis and Crohn's Disease:

A CASE REPORT

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A 19 year old male with known cystic fibrosis developed intestinal obstruction. Emergency laparotomy with right hemicolectomy (resection of terminal ileum and cecum) was performed. Grossly, the resected specimen revealed hose-pipe terminal ileum with mucosal cobble stoning, serpentine ulcers, fissures and luminal narrowing. Microscopically, it showed transmural patchy inflammation, epithelioid granulomata and serosal fibrosis consistent with Crohn's disease. In addition, there was thick carpet-like mucus over the mucosa with dilated crypts with mucinous material compatible with cystic fibrosis noted. Three other reported cases were from Australia, U.S.A. and U.K. So far, no such case has been reported in Canada.

O'Connor and Lawson reported a case of a newborn girl with cystic fibrosis and Crohn's disease.¹ The diagnosis was made on the resected terminal ileum. She developed progressive Crohn's disease with the left colon and anal canal involvement. Eular and Ament reported an 8½ year old boy with cystic fibrosis and Crohn's disease of the terminal ileum.² He was clinically alright even after 19 years of the disease. Ojeda *et al.*, reported the third case of cystic fibrosis and Crohn's disease in a 23 year old man.³ This paper described a 19 year old male with cystic fibrosis and Crohn's disease presented with intestinal obstruction.

REPORT OF A CASE

Clinical Summary: The 19 year old male diagnosed as having Cystic Fibrosis at age 7 months has been well controlled on Cotazym 7 tabs ac meals, Zantac 150 mg am and hs, ABDEC caps. 1 daily, Aquasol E caps 1 bid, Maximist inhalation (Isuprel .5 cc and Tobramycin .5 cc with basic solution 2.5 cc bid), postural drainage and occasional Ilosone.

One Saturday evening he had a large bag of peanuts and, on Sunday afternoon, started to develop some crampy, central abdominal pain, associated with nausea; two episodes of vomiting; and the pain kept him awake through the night. Monday, it increased in intensity, described as more or less steady with intermittent cramps

every few minutes; again two episodes of vomiting; and he did have a small bowel movement. He was unable to sleep again at night and the pain persisted through the day. His mother had given him some warm fluids as well as a suppository but without relief. He had one episode of bilious vomiting and no bowel movement or passing flatus. He was well, other than the cystic fibrosis. He has no known drug allergies. Three years ago he developed microcytic hypochromic type anemia. This was investigated but the etiology was never found.

Physical Findings: 19 year old slender, white male, appears to be in moderate abdominal distress, somewhat lethargic, afebrile. Temp. 36.2 degrees C., pulse 104, B.P. 130/70. Heart sounds normal. Peripheral pulses present. No peripheral edema. Chest is clear. Abdomen — soft, scaphoid, definite left-sided abdominal tenderness with slight guarding and definite rebound, bowel sounds are high pitched and rushes so that one hears only a few bowel sounds at any one time. (Mother states that the cramps were much more severe at home and she was able to hear his bowels rumbling — borborygmi.) No palpable abdominal masses, no organomegaly. External genitalia normal. Both testicles down. No inguinal hernias. Rectum appears tender anteriorly on digital examination empty, no rectal mass, no rectal shelf and no blood on the examining glove.

Investigations: Hgb. 13.1 gm/dL; WBC 13,400, 81% polys, 11% bands; red cells are microcytic hypochromic; platelet count normal; urinalysis normal; x-ray three views of the abdomen (Air fluid levels, stepladder pattern of small bowel suggesting small bowel obstruction).

It was thought that he had a small bowel obstruction of unknown etiology. However, it was felt that the presentation, physical findings, investigations justify exploratory laparotomy.

PATHOLOGICAL FINDINGS

Macroscopic Examination: The specimen consists of right hemicolectomy consisting of 16 cm colon and 7 cm terminal ileum including the appendix and mesentery. The terminal ileum is hose-pipe appearance with serosal fibrosis and fat creeping. The lumen is narrow with almost obliteration. The mucosa shows linear ulcers with anastomosis, featuring a cobblestone pattern and fissures. The wall is edematous and thickened up to 0.8 cm. The appendix is swollen and edematous. The mesenteric lymph nodes are enlarged with a greatest

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diameter of 1.5 cm. The mesentery is covered with fibrinous exudate.

Microscopic Examination: The terminal ileum and cecum show transmural patchy inflammation consisting of lymphocytes, plasma cells, polymorphs and eosinophils. There is formation of lymphoid follicles with prominent germinal centres. Focal cryptitis and crypt abscesses are also seen. There is serosal and submucosal fibrosis. There are epithelioid granulomata involving the submucosa, muscle layer, serosa, as well as, the mesenteric lymph nodes. The mucosal crypts of colon and ileum show dilatation with accumulation of the mucine with increased in number of goblet cells and thick carpet-like, mucinous layer over the surface epithelium. There are no microorganisms by gram, acid-fast and fungal stains.

FOLLOW-UP

The patient had uneventful post operative course. He had no gastrointestinal tract complaints. He had normal respiratory function tests. He looked well and gained 3 kg in weight in three months. He is attending University in good condition.

DISCUSSION

This patient fulfilled the criteria of cystic fibrosis and Crohn's disease. Cystic fibrosis is a genetic disease manifested in the child with multisystem involvement. Because of the improved therapy, the patient survived to adulthood. However, they do not get rid of the complications of the disease process, and so, an increasing number of patients develop intestinal obstruction which is the meconium ileus equivalent. The various gastrointestinal manifestation and incidence were reviewed by Park and Eman.⁴ (Table I)

TABLE I
GASTROINTESTINAL MANIFESTATIONS IN
CYSTIC FIBROSIS

Organ	Complication	Approximate Frequency
PANCREAS	Total achylia	85%-90%
	Partial or normal function	15%-20%
	Pancreatitis	----
	Abnormal glucose tolerance	20%-30%
INTESTINE	Diabetes	1%- 2%
	Meconium ileus	10%-15%
	Rectal prolapse	20%
	Distal intestinal obstruction syndrome ("meconium ileus equivalent")	10%-20%
LIVER	Fatty liver	15%-20%
	Focal biliary	25%
	Cirrhosis with portal hypertension	2%- 5%
BILIARY	Gall bladder abnormal, non-functional or small	45%
	Gall stones	4%-12%
	Cholecystitis	----

It is quite common, the meconium ileus equivalent in the adult or intestinal obstruction (21 percent with repeated episodes).⁵ Among the extra intestinal manifestations, pulmonary manifestation is quite common in cystic fibrosis. However, there is mild respiratory complaints in our patient. Although, the cystic fibrosis is a genetic disease, the etiology of Crohn's disease is unknown. However, microbiological agents and immunologic mechanisms have been postulated but not yet confirmed. The association of these two diseases is not known. It may be merely coincidental. □

ACKNOWLEDGMENTS

We thank Dr. D.A. Malatjalian, Victoria General Hospital, Dr. B.E. Favara, Isaac Walton Killam Hospital For Children, Halifax and Dr. G.K. Kini, Yarmouth Regional Hospital for their valuable opinion on this case. We also thank Darlene Fox and Frances Meuse for their secretarial assistance.

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PROVISION OF HEPATITIS B VACCINE — HBIG TO HEMOPHILIACS

The availability of enhanced viral inactivated clotting factor will facilitate a significant reduction in the risk of exposure to Hepatitis B in hemophiliacs. The inherent nature of this disease may however continue to place hemophiliacs at a slightly higher risk of exposure to Hepatitis B compared to the general public secondary to the potential need for other blood products.

Routine immunization of all susceptible hemophiliacs with Hepatitis B vaccine would appear to have merit. The Department of Health & Fitness maintains a supply of Hepatitis B vaccine including a vaccine produced via recombinant DNA technology. Based on a physicians request, the Department of Health & Fitness will provide all susceptible hemophiliacs with Hepatitis B vaccine at no cost. The Department will continue to provide Hepatitis B vaccine and HBIG at no cost for patients exposed to Hepatitis B virus in the community setting based on a physicians request. These biologicals can be obtained through any of the regional Health Unit offices in Nova Scotia.

The Role of Somatostatin Analogue in the Treatment of Carcinoid Tumors

R. MacCormick,* MD,FRCP(C),

Halifax, N.S.

Carcinoid tumors are relatively slow growing neoplasms. Prior to metastasizing, their major clinical importance is related to their mass effect. However, with development of liver metastases, severe clinical symptoms such as flushing, diarrhea, asthma and cardiac failure may occur. These symptoms collectively are called the carcinoid syndrome. These symptoms are due to release from the tumor of pharmacologically active agents including serotonin and bradykinin. Treatment of metastatic disease is directed at the control of symptoms since cure is an unreasonable expectation. Debulking surgery or embolization of tumor vessels often results in prolonged symptomatic improvement. Treatment with the chemotherapeutic agents 5-flourouracil and streptozocin is associated with response rates of approximately 30%.¹ A new alternative, and the subject of this report, is somatostatin analogue. Following are case reports on two patients recently treated with somatostatin analogue at the Cancer Treatment and Research Foundation of Nova Scotia.

Case #1

A 65 year old woman was documented to have carcinoid tumor with liver metastasis and associated carcinoid syndrome in 1981. At that time she was noted to have persistent elevation of urinary 5-hydroxyindoleacetic acid (5-HIAA). She was treated with 5-FU and streptozocin on an intermittent basis but became refractory to treatment in February 1987. Her major symptom upon presentation at that time was severe episodic flushing associated with symptomatic hypotension. This occurred approximately 3-4 times per day. Her 5-HIAA at that time was 427 micromoles per total volume in a 24 hour urine, with the normal being 10-40. An attempt was made to embolize her hepatic artery to necrose the tumor mass but this was unsuccessful.

She was then started on somatostatin analogue, initially at a dose of 125 micrograms subcutaneously b.i.d. She had no improvement in symptoms and the dose was increased to 250 micrograms t.i.d. Within one week of initiating this last dose, her flushing discontinued and she remained asymptomatic for the next seven months. A repeat 5-HIAA was done and was reported as 12 micromoles per total volume in a 24 hour urine. After seven months of treatment her flushing recurred and the dose of her somatostatin analogue was increased to 500 micrograms t.i.d. with good control of symptoms since that time.

Case #2

A 62 year old woman was diagnosed in 1985 with metastatic carcinoid. She complained of weakness, flushing, and diarrhea. At that time she was treated with chemotherapy which she did not tolerate well. Attempts were made to control her diarrhea with diphenoxylate and codeine, and her flushing with antihistamines. Control of her symptoms was poor.

In July 1987 she complained of diarrhea occurring 6-7 times per day. At that time she was still complaining of frequent flushing. A 24 hour urinary 5-HIAA was 361 micromoles. She was started on somatostatin analogue 250 micrograms t.i.d. Her flushing disappeared and her diarrhea decreased to 2-3 episodes per day. A further increase in her dose to 500 micrograms t.i.d. has further controlled her diarrhea. A recent urinary 5-HIAA was negative.

DISCUSSION

The physiologic action of somatostatin is an inhibitory effect on virtually all gastrointestinal and pancreatic exocrine and endocrine functions.² Somatostatin analogue is a super agonist and therefore it can suppress the secretion of all known gut peptides including gastrin, cholecystokinin, vasoactive intestinal polypeptide (VIP), gut glucagon and secretin.

Carcinoid tumors may oversecrete serotonin in 16-18% of patients resulting in carcinoid syndrome.³⁻⁵ It is also known that carcinoids may contain gastrin, VIP, and glucagon.⁶

As noted above, the secretion of these hormones may be controlled with somatostatin analogue and, although the release control mechanism of serotonin is not known, it is felt that it may be released from enterochromaffin cells along with other secretory granules.⁷

Because of this antagonism of gastrointestinal hormone release by somatostatin, the symptoms of carcinoid syndrome can be controlled. Also of interest is the observation that actual reduction in tumor size can also be seen in these tumors on occasion.⁸

Overall, control of symptoms has been reported in up to 80% of patients with duration of response from 6 weeks to more than 2 years, with a median response duration of 20 weeks.⁸ Dose limiting toxicity appears due to steatorrhea.⁹

*Medical Oncologist, Cancer Treatment and Research Foundation of Nova Scotia, 5820 University Ave., Halifax, N.S. B3H 1V7.

CONCLUSION

The symptoms of carcinoid syndrome may be effectively controlled with the somatostatin analogue, even after failure of debulking surgery and chemotherapy. □

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CoActifed contains codeine; may be habit forming. Use with caution in patients with hypertension and in patients receiving MAO inhibitors.

Patients should be cautioned not to operate vehicles or hazardous machinery until their response to the drug has been determined. Since the depressant effects of antihistamines are additive to those of other drugs affecting the CNS, patients should be cautioned against drinking alcoholic beverages or taking hypnotics, sedatives, psychotherapeutic agents or other drugs with CNS depressant effects during antihistaminic therapy.

Adverse Effects: In some patients, drowsiness, dizziness, dry mouth, nausea and vomiting or mild stimulation may occur.

Overdose: Symptoms: Narcosis is usually present, sometimes associated with convulsions. Tachycardia, pupillary constriction, nausea, vomiting and respiratory depression can occur.

Treatment: If respiration is severely depressed, administer the narcotic antagonist, naloxone. Adults: 400 µg by i.v., i.m. or s.c. routes and repeated at 2 to 3 minute intervals if necessary. Children: 10 µg/kg by i.v., i.m. or s.c. routes. Dosage may be repeated as for the adult administration. Failure to obtain significant improvement after 2 to 3 doses suggests that causes other than narcotic overdose may be responsible for the patient's condition.

If naloxone is unsuccessful, institute intubation and respiratory support or conduct gastric lavage in the unconscious patient.

Dosage: Children 2 to under 6 years: 2.5 mL 4 times a day. Children 6 to under 12 years: 5 mL or ½ tablet 4 times a day. Adults and children 12 years and older: 10 mL or 1 tablet 4 times a day.

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PARTICIPATION

Current Topics in Community Health

Selected by: Dr. Frank M.M. White
Department of Community Health and Epidemiology
Dalhousie University, Halifax, N.S.

CARDIOVASCULAR DISEASE PREVENTION

Notes from New Brunswick

Diseases of the circulatory system constitute the leading cause of hospitalization in New Brunswick (Table I) for both males and females. A large proportion of these hospital days are associated with the major cardiovascular diseases. Ischemic heart disease and strokes together accounted for 63% and 60% of the total number of hospital days for circulatory diseases for males and females respectively.

TABLE I

Five leading causes of hospital utilization for males and females according to total hospital care days and hospital care days per 1,000 population, New Brunswick, 1984-85.

Disease Categories	Males		Females*	
	Total Hospital Care Days	Rate per 1,000 Population	Total Hospital Care Days	Rate per 1,000 Population
1. Circulatory System	124691	360	119592	341
2. Respiratory System	74529	215	51195	146
3. Digestive System	62151	180	64578	184
4. Neoplasms	56486	163	53883	154
5. Mental Disorders	56140	162	71312	204

*Note: Complications of pregnancy, childbirth and the puerperium excluded from ranking for females. This accounted for 201 hospital care days per 1,000 population.

Source: N.B. Hospital Utilization Database, 1984-85.

The second leading cause of hospitalization for males was respiratory diseases which was the fifth leading cause of hospitalization for females. The rate of hospital care days per 1,000 population for diseases associated with the respiratory system was about one and a half times more for males than females. Diseases of the digestive system were the third leading cause of hospital utilization with females having a slightly higher number of hospital days than males. Total hospital days and rate per 1,000 population for neoplasms were higher for males than females. However, mental disorders were the second leading cause of total hospital days for females, whereas it was the fifth leading cause of hospitalization for males.

There were 1,770 hospital care days per 1,000 male population compared with 1968 hospital care days per 1,000 female population in the province. These five leading causes of hospitalization accounted for 61% and 52% of the total number of hospital care days for males and females respectively during 1984-85.

Discussion

Recently, there has been renewed interest in the prevention of coronary heart disease (CHD) by controlling plasma cholesterol levels, and this interest has been kindled by three developments. The first was the discovery of cell surface receptors for low density lipoproteins, which provided valuable information on how plasma cholesterol levels are controlled. Another factor was the results of the Lipid Research Clinic's Coronary Primary Prevention Trial which showed that by lowering the plasma cholesterol using bile acid sequestrants, the incidence of several manifestations of CHD including myocardial infarction can be reduced. The third was the development of a new class of cholesterol lowering drugs which competitively inhibit the rate limiting enzyme in cholesterol synthesis, 3-hydroxy-3-methylglutaryl coenzyme A reductase, which results in the lowering of cholesterol levels.

Our increased awareness of the mechanisms and methods for lowering cholesterol levels are important to our understanding on how to control elevated plasma cholesterol levels. There are, however, investigators who believe that drugs are not the only method for reducing cholesterol levels for the general public, or even for those patients with frank hypercholesterolemia. This would lead us to the question whether plasma cholesterol levels can be lowered adequately without the use of drugs and presumably with diet. Today, we accept the fact that there is a relation between plasma cholesterol level and coronary heart disease. Scientific evidence shows that by lowering low density lipid concentrations, we can reduce the risk of CHD; nevertheless, we are faced with important decisions on how to apply this knowledge to control high plasma cholesterol levels in the population.

Source: Dr. B. Christofer Balram, Provincial Epidemiologist, New Brunswick.

PEANUTS BETTER OPTION FOR TOBACCO FARMERS

Farmers in Southern Ontario who are looking for an alternative to the once-lucrative tobacco crop have been advised to consider growing peanuts. The advice comes from University of Guelph crop scientist Tom Michaels, who says that with double the acreage of last year and five times as many growers, the Ontario peanut harvest this fall reached an all-time high.

Dr. Michaels, who is head of the university's peanut breeding and evaluation program, is convinced that peanuts represent one of the "better options" for tobacco farmers, now that the demand for that product has fallen considerably. By contrast, he says, the peanut market in Canada can still absorb a great deal more production.

At present most of our supply — above 90 per cent — comes from the United States, largely for the peanut butter trade. But since industry analysts agree that American peanuts are not as sweet as the ones grown in Canada, Dr. Michael is urging Canadian growers go after the cocktail party market — the "party peanut" trade.

But first, Canada's party peanut crop has to grow up. Although it is sweeter than its American counterpart, it is also significantly smaller and less attractive to retailers. So at test plots at the university and federal research stations in Southern Ontario, crossbreeding experiments are being carried out to beef it up.

"By looking for uniformity in the growing plants that we are breeding, we have seen increases of up to 10 per cent", says Dr. Michaels, adding "We would like to get them about 20 percent bigger yet." Even so, Dr. Michaels says the Ontario peanut crop will likely reach 1,000 acres this year and, if a local growers co-op is successful in obtaining the financial assistance it needs to acquire a packaging and shelling plant, Dr. Michaels goes on to predict that the industry will have reached a milestone in its development.

Source: *University Affairs*, May 1988. □

Dr. Thomas C. Coyle, (67) of Dartmouth, N.S. died June 13, 1988. Born in Glasgow, Scotland, he received his medical degree from Glasgow University in 1952 and then went on to specialize in pathology. He is survived by his wife and three daughters, to whom the *Journal* extends sincere sympathy.

Dr. Clyde S. Marshall, (00) of Halifax, N.S. died July 11, 1988. He received his Medical Degree from Dalhousie in 1924, and went on to fellowship study in psychiatry and neurology. In 1930 he began teaching at Yale University returning to Dalhousie in 1941. Later he became Administrator of the Nova Scotia Hospital until he retired in 1967. He is survived by a son and daughter to whom we extend sympathy.

Dr. John J. Quinlan, (71) of Chipman Brook, N.S. died July 12, 1988. Born in Newfoundland, he graduated from Dalhousie Medical School in 1941. Following his certification in thoracic surgery, he practised at the Blanchard Fraser Memorial Hospital and the Sanatorium in Kentville and later became Chief of Staff of the Valley Health Services Association until his retirement in 1982. He is survived by his wife, Dr. Helen Holden and two daughters. We offer our deepest sympathy to his family. □

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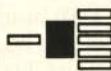
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Sam Prescott's Ride

B.R. Wheeler, MD.

Listen my children, did you all hear,
What the poet said of Paul Revere?
He did not say that by his side
Rode William Dawes on that famous ride.
Nor tell of another who joined the pair.

Sam Prescott earlier on that day,
(a medical man from Concord Town,)
Had ridden his horse the other way,
To meet his girl in Lexington.
He left her standing at the door,
When he saw the horsemen hurrying there,
William Dawes and his friend Revere,
Who had passed a moment or two before.
He cantered up to the riders side,
And learned the cause of their famous ride.
And he led them by roads as you only can
In the place where you grew, and became a man.

Then down the road to the right they see,
Red coated riders beneath a tree,
Who rode to capture the horsemen three.

A thud of hooves in the moonlit air,
A shout and a curse and a redcoat cheer,
And the soldiers are all around Revere.

Sam spurred his horse and cried "Put on".
Barging his way across the field,
He strikes with his whip till the troopers yield,
And his horse is over the wall and gone.
Galloping into the misty lane,
Scattering stones in the rough ravine,
Hoping like hell he can't be seen,
Then he's slowed by the mud in the swamp again.

Nothing to hear, the night is still
He walks his horse up the grassy hill.

And through the night went his cry of alarm,
As he called at the door of every farm,
The British were coming, to up and to arm.

It was two by the village clock,
When he came to the bridge in Concord Town,
And roused the men who came to flock,
From the leafless woods and the meadows brown.
A town was roused by this man's flight.
A nation new was born that night.

Americans are proud and free,
By this man's casual gallantry.
A man who had no proud ambition.
A man forgotten by a nation. □

Editor's note:

Dr. Wheeler, Truro, N.S., wrote to say that this verse was written in response to Dr. Jock Murray's article (Dec. 1987) on Dr. Samuel Prescott, who was "anchor man" to Paul Revere.

HEALTH CARE IN CANADA AND NORWAY Continued from page 120.

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Appreciations

DR. CHARLES ALEXANDER GORDON

With the death of Dr. Charles Alexander Gordon, age 69 on March 6, 1988, the profession of medicine lost a wonderful personality and a great Doctor.

Dr. Gordon was born in New Carlisle, Quebec and was a medical specialist in internal medicine in Halifax for thirty-seven years. He was educated at Queen's University, University of King's College and Dalhousie University. In 1944, he graduated from the Dalhousie Medical School with an MDCM. He was senior resident in medicine at Victoria General Hospital in 1947 to 1950, and was a teaching fellow in respirology at Columbia University in New York City 1950 to 1951.

He conducted his private medical practice in Halifax from 1951 to until ill health forced his retirement in 1984. Before that he was Medical Director of the Maritime Life Assurance Company and Assistant Professor of Medicine at Dalhousie University. He was a consultant in internal medicine at Camp Hill Hospital, Dartmouth General Hospital, the Halifax Infirmary, and the Victoria General Hospital; he was also a consultant at the Workers' Compensation Board and Confederation Life Insurance Company. He was a Captain in the Royal Canadian Army Medical Corps from 1944 to 1946 and was resident physician at Cornwallis Veterans' Hospital 1946 to 1947. He played a prominent part in the medical rescue team at the Springhill mine disaster. He was a Fellow of the Royal College of Physicians and Surgeons of Canada in internal medicine; he was also a Fellow of the American College of Physicians, a Fellow of the American College of Cardiology, a Fellow of the American College of Chest Physicians. He was a member of The Medical Society of Nova Scotia, the Halifax Branch of the Medical Society and he was past president of the Canadian Life Insurance Medical Officer's Association.

At the time of his death he was a medical consultant for the Nova Scotia Department of Transportation and a member of Point Pleasant Park Commission; he was also an honorary member of the Nova Scotia Yacht Squadron and a charter member of the Saraguay Club.

This outline of his many activities only begins to capture the life, personality and friendly wit which carried him through his life. His enthusiasm and wisdom will be missed by many of his patients and fellow colleagues.

He is survived by his wife, the former Marian Tegunno; a son, James S.; two daughters, Dr. Elaine F. Gordon Cragg and Dr. Sara C.; a sister, Dorothy (Mrs. Charles Kennettle), and three grandchildren, all of Halifax.

Editor

DR. LLOYD BERTRAM MACPHERSON

Dr. Lloyd Macpherson died on Monday, April 25, 1988 in the Victoria General Hospital.

Lloyd Macpherson was born in 1913 at Annapolis Royal, and received his schooling in Kentville. He went on to Acadia University and received the degree of Bachelor of Science in 1934. From there, he went to Toronto to work with Sir Frederick Banting, with whom he spent several fruitful years. Banting's example led him into medical research, where he made significant early contributions to the field of phospholipid structure and metabolism. His academic work was interrupted by service in World War II, but he returned to science and completed his Ph.D in 1949.

Lloyd Macpherson's wartime work was in technical intelligence, where he acquired a detailed knowledge of a variety of sophisticated agents in use or anticipated use at that time. He reached the rank of Major, and his military career was recognized by the award of an M.B.E.

He returned to Nova Scotia and joined the Department of Biochemistry at this University in 1952 as an Assistant Professor. Like most of the basic medical science departments at that time, the Biochemistry Department consisted of only two faculty members. He saw this establishment grow during his time to a total of twenty-one full and part-time academic members, with a vigorous research and teaching program in many fields. During the later stages of his career, Lloyd Macpherson's work was mainly administrative. He became Assistant Dean of the Faculty of Medicine in 1958 and Associate Dean in 1969. During this time, one of his major tasks was the detailed planning of the Sir Charles Tupper Building, which remains a monument to his patience and skill.

In 1971, Lloyd Macpherson was appointed Dean of Medicine, the first person in Canada without a medical degree to hold this kind of office. During his years as Assistant and Associate Dean, he had taken a special interest in and responsibility for student affairs, premedical education and curriculum development. Not many of us any longer remember the acrimonious confrontations which characterized student faculty relations in the late 1960s. It is no accident that his period as Dean was one of increasing trust and cooperation between students and faculty, and saw the appointment of students to all important committees of Faculty — a quiet revolution, but an important one.

Lloyd Macpherson's contributions to Canadian academic life were recognized by the awarding of honorary doctorates by his alma mater, Acadia, in 1971 and by Dalhousie in 1981. He retired from the University in 1978, and devoted himself enthusiastically to gardening, natural history, philately and collecting old

books. We remember him fondly as a quiet, sensible, sane man who could find reasonable solutions to most problems, and persuade people to accept them. He suffered more than most men from illness, which he bore with exemplary fortitude. He was a strong man in every sense.

Dr. Christopher Helleiner
Dr. Sydney Patrick

DR. JOHN R. STANTON

The death of Dr. John Stanton on April 29, 1988 marked the passing of an experienced general practitioner and an able health administrator. Those he cared for in his earlier years and those he later associated with, both in Nova Scotia and across Canada, will indeed miss him.

John Stanton, a native of Mulgrave, N.S., took premed at St. Francis Xavier University and medicine at Queen's University, graduating from the latter in 1940. On the completion of a year at the Ottawa General, he started in general practice in Canso and remained there until 1949. His practice there was notable for the great emphasis placed on preventive measures, the successful establishment of a Red Cross Outpost Hospital, and the high standard of care provided to a large and scattered population. It is unfortunate that some of the experiences he had during the course of his many "house calls" to the Dovers, Whiteheads, etc. in fine weather and foul, were not recorded.

John Stanton's so obvious interest in preventive medicine plus some hard selling by the writer, persuaded him to specialize in public health (Community Medicine). Accordingly, he spent a year at the School of Hygiene of the University of Toronto in 1950. Following that he took a one year residency at the Nova Scotia Sanatorium, studying diseases of the chest notably tuberculosis, which at that time was still a major public health problem.

During 1951-1957, he was the director of the Northumberland Health Unit which comprised the counties of Pictou, Antigonish and Guysborough. He then was invited to come to Halifax and take over as Director of all Health Units in Nova Scotia. In addition he functioned on numerous Provincial and Federal/Provincial advisory committees dealing with such matters as National Health Grants, etc.

Following retirement in 1976, Dr. Stanton continued his interest in the health field acting on the Senior Citizens' Health Commission and the Teachers' Pension Board.

Dr. Stanton leaves to mourn him, his wife, the former Margaret MacLean, R.N.; two sons, Terrence and Patrick; and many old patients, friends and associates who long will remember him.

G.G. Simms, M.D.

□

Correspondence

To the Editor:

I was very much impressed by your recent guest editorial ("The Doctor as a Gate" by Dr. Michael Gross). If he has any inclination in the direction of medical politics, he should be encouraged to enter the medical hierarchy!

Thank you.

Yours truly,

S.H. Dhalla, M.D.,
42 Glen Allen Dr.
Bridgewater, N.S.
B4V 3N2

To the Editor:

With reference to the article entitled "Camp Hill and the Smallpox Outbreak of 1938" authored by Ian Cameron, which appeared in the *Journal* [1988; 67: 100-103], it is always a delight to be reminded of Nova Scotia's rich medical history, and the *Journal* is to be congratulated on its encouragement of such articles.

However, in the last line of the article there is a statement that I believe is quite the opposite of what the author may have intended and certainly he would be taken to task by W.H.O. for making it. I refer to the sentence which reads "Subsequently, strict attention to vaccination programs has resulted in the irradiation of smallpox". Surely the author meant "eradication".

According to the Oxford Universal Dictionary, the following definitions are given for "eradicate" and "irradiate"

eradicate: To pull or tear up by the roots; to root out.
To extirpate, get rid of.

irradiate: To fix by the root, to enroot.

I do hope the author does not wish to enroot (irradiate) smallpox in Halifax!!!

Sincerely

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cc Dr. Ian Cameron

□