THE NOVA SCOTIA MEDICAL BULLETIN

Nova Scotia, New Brunswick, Prince Edward Island: A Community Invitation

In the recent Opinion Survey of the members of the Medical society of Nova Scotia, 91% of the members found *The Nova Scotia Medical Bulletin* "useful" in some way. This is stated here, remembering that Eaton's and Simpson's catalogues once had a traditional "usefulness" in the outhouses of the nation. Also more than 80% of the survey returns indicated some degree of satisfaction with the *Bulletin* as it is, and 20% felt it should be expanded. These results, of course, provide some satisfaction to the Editorial Board, but has left us with some difficulties. The indication that a good number of members of the Society actually read or "use" the *Bulletin* is flattering, considering the profusion of journals crossing the desk of an average physician. It is an indication that our *Bulletin* probably attracts more readers than many of the other "throw away" journals that gather dust in many of our offices.

The reasons for this are open to speculation. Perhaps we are superior in our publishing format, have the best scientific articles and the most literate authors. Much more likely however is that we provide a journal of relatively good quality to a population that is in a way a community in itself. The magazine is produced and written by people we recognize, studied with, learned from and/or have some interaction with on a continuing basis. We can weigh what we read often by personal knowledge of what we know about the author and circumstances. Perhaps the readers are just interested on a personal basis. In a society with less and less personal contact and sense of community, the *Bulletin* has helped a group of physicians to function and interact in a useful way.

In an effort to facilitiate this function, this issue of the *Bulletin* is going out to all New Brunswick and Prince Edward Island physicians, as well as those in Nova Scotia. After all these physicians are very much a part of a community that often studied together, attends the same C.M.E. courses, and refers to the same tertiary care facilities; in fact in terms of health planning the three provinces make up one functional unit.

The manpower needs of the area are interrelated, and the funding of much of the training of new physicians is partially shared by the three provinces. Many of the problems, as well as many strengths are found to be similar. Perhaps, communication of these strengths and weaknesses could benefit both ourselves and the health care system. Certainly without good communication we will not understand what uniqueness we might have.

One of the better examples of cooperation among the three provinces has been the I.W.K. Hospital for Children. As Richard Goldbloom leaves his former position as Chief of Pediatrics there, a clinical meeting to mark this occasion has given us the opportunity to print some of the papers presented at that time.

Also, as the Dean of the Medical School changes, we also give the new Dean an opportunity to speak to physicians in all three provinces to which he has a responsibility.

New Brunswick and Prince Edward Island do not have, until now, a journal of local character, and we are inviting them to join Nova Scotia physicians in making this journal a better publication. Only this issue will be free but the subscription rate to our colleagues in the neighbouring provinces will be minimal.

We offer them an outlet to which they can submit any work that they think would be of interest to the Maritime community of physicians. Not only will we gain their readership, but with increased submission of articles, the quality of the journal can be improved. Better planning can be carried out and the magazine distributed more regularly.

In summary then, with one university in common and a common community of interest, we are inviting the physicians of New Brunswick and Prince Edward Island to become both readers and contributors to *The Nova Scotia Medical Bulletin*. We would welcome their comments, suggestions and especially articles. We have much to share with each other. □

J.F.O'C

William K. (Bill) Martin

DIRECTOR OF COMMUNICATIONS

The Medical Society of Nova Scotia has a new voice in its Halifax office. Former broadcaster and publisher Bill Martin has moved from Port Hawkesbury to become the Society's Director of Communications.

Bill, as he prefers over Mr. Martin, has been active in the media and politics during the last 13 years. His list of community activities reads like a directory.

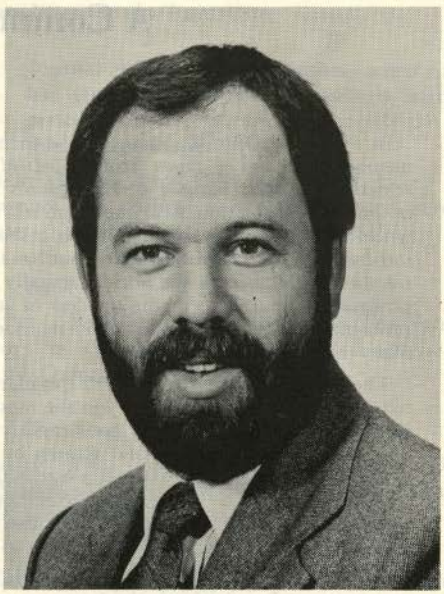
This 38 year old, Ontario native, came to Nova Scotia in 1968. He played professional golf in Yarmouth until a wrist injury ended his career hopes. The golf experience allowed him to work closely with the media and he made a transition into radio at CKBW in Bridgewater. It was there that Bill first dabbled with politics and served as Executive Assistant to Dr. Mike Delory when he was Minister of Lands and Forests.

Bill was called back to radio in 1975 with the opening of a new station CIGO in Port Hawkesbury. Within a few short years Bill moved from heading the news department to managing the company.

In 1981 Bill opened two new ventures, a media consulting firm and a weekly newspaper. *The Reporter* quickly grew as a community paper serving the four counties in the Strait of Canso area. The consulting firm, Martin Communications Limited, grew quietly allowing Bill an opportunity to serve many masters and face many challenges.

Bill has really been involved in community affairs where ever he lived. He has served in an executive position with such ranging organizations as The Arthritis Society, the Nova Scotia Hockey Association, Chamber of Commerce and Toastmasters, along with leadership roles in business organizations.

Bill is married to the former Jacki Johansen of Lunenburg County and they have two sons, Jay 7 and Corey 5. The Martins are looking forward to their move to the Provincial capital. Bill says, "I've covered the Province, my wife is from the South Shore and my boys are considered 'Capers'. Collectively, we can bring a regional flare to the big city."



The Communications Director will continue to work closely with Doug Peacocke to ensure the best perception of the Society's effort in the eyes of the medical profession, the government and the public. Bill hopes his experience with the media will facilitate the enhancement of the Society's public image while he works closely with government officials to further develop the Society's already good relationship.

For the last 10 years Bill has ended his business letter with the same line and he says it applies even more to his new position. The line simply states "Looking forward to your partnership in communicating with people . . .". □

An Interview with Dean Thomas John ("Jock") Murray

In August of 1985, Dr. T.J. Murray became Dean of the Faculty of Medicine at Dalhousie University. The University has both a direct and indirect impact on the health care and practices of Nova Scotia physicians. As he begins his labors, the *Bulletin* thought it appropriate to present him with a few questions about his attitudes and plans.

As a neurologist, educator and Director of the Dalhousie Multiple Sclerosis (MS) Research Unit, he is well known to the readers of the *Bulletin* because of his many articles directed to practising physicians.

Bulletin: *Do you have any initial comments on the deanship after your first few weeks in office?*

Dean Murray: I feel very positive about the future of our medical school because of the commitment of our faculty, students and staff. They have been very kind in welcoming me, although the gift I received on the first day from the Kellogg Library staff should give me some pause. They found the World War II flak helmet marked "Dean" in the basement of the previous library and presented it to me with the suggestion that in the days to come a flak helmet will be useful!

Bulletin: *What do you see as the major challenge for the medical school over the next few years?*

Dean Murray: To progress, develop and innovate in a time of increasing restraint. It is imperative that we advance. We must be able to adapt rapidly to new knowledge and change in medical science and patient care, and we must be actively involved in experimentation and research to constantly address important questions in medicine. To do this effectively we need to have a financial base that permits us to recruit bright young clinical investigators and basic science researchers in areas that are developing, and we need the resources to provide technology, laboratory space and to meet the increasing costs of research.

Certainly the most difficult challenge is to attempt to keep up with important changes in medicine, and research and to participate effectively in that process when we are not given adequate funding.

Bulletin: *Who do you have to convince about the need for increasing financing of the medical school?*

Dean Murray: The Maritime Provinces Higher Education Commission determines the level of funding of universities and they can specifically indicate the need for increasing funding of the Faculty of Medicine within Dalhousie University. In addition, we require understanding of the need to pursue excellence and to develop traditional and new programmes even when the immediate impact is not evident. For instance, the Province of Nova Scotia, the other Maritime Provinces, the public and the practising physicians note a problem if underfunding results in deficiencies of our staff or programmes in the area of provision of care. We have greater difficulty getting the support of the many groups who can address our question of underfunding, if we begin to fall behind in biomedical research, in educational programmes or other medical advances. The long-term deficiencies in these areas will have a greater impact on our whole system.

Bulletin: *As the new Dean, are there specific areas that you feel need attention?*

Dean Murray: All the major areas of our responsibility require some attention.

Going to the beginning, I would like to see a re-examination of our requirements for premedical entrance to medical school. I particularly want to see a re-assessment of our selection process and to assure that it selects the best person for the future of medicine, as best we can judge it.

Our undergraduate medical curriculum is now being carefully re-assessed by a newly formed Undergraduate Medical Education Committee and we have already seen

improvements and change from that Committee. One of the most exciting is the junior clerkship that will begin in Third Year Medicine.

But there are important issues about student life other than curriculum. I particularly want to improve the interpersonal relationships between Faculty and medical students. As our Faculty has become larger and larger, and the students organizations organized, there has been a drifting apart of the relationship. Many of our faculty do more and more things that are vital to our medical student programmes but involve less daily contact as they involve important clinical and research endeavors. This tends to encourage some personal separation, however, and we now see that the faculty feel that they are more distant from the student than they would like to be. The students also regret this. There are many ways to redress this situation immediately and I plan to make it my most immediate objective.

Our postgraduate and CME programmes will also receive attention. We are constantly reviewing and improving our postgraduate education programmes and the University administration of these programmes, under Dr. William Mason, has taken great strides in recent years. The Continuing Medical Education programmes were always leaders in the country, and we will continue to develop and improve these.

Bulletin: *How do you see the present state of the Medical School in relation to the rest of the country?*

Dean Murray: It is difficult to judge, as it depends on which factors are being assessed. Dalhousie has always been noted for the training of excellent physicians for the community. This is still so, and we would proudly compare our graduates with those of any other medical schools.

Other measures are more difficult to evaluate. The Medical Council of Canada Examinations place us in the middle, but we recognize that many other schools use cram courses to help prepare students for these examinations, which we don't. We agree with schools such as McMaster that we are designing educational programmes to train the best physician, not necessarily to pass these examinations. However, our students have asked whether or not we should put on a cram course before these examinations, because the marks are being used to compare our students nationally and we will examine the pros and cons of doing this.

Another measure is in relation to the postgraduate programmes. Some of our programmes are the best in the country. In most programmes we have an excellent pass rate at the Royal College Examinations. In a few programmes we have some difficulties, primarily related to inadequate ability to address some of the recruitment and resource requirements with our present finances.

Perhaps the most common measure being used to compare medical schools at present is the level of biomedical research funding. In this we certainly do not compare well. Unlike the rest of Canada, the Maritime Provinces do not directly support research, and we have not developed areas of excellence in clinical and biomedical research related to many areas in our Faculty. Dr. Donald Hatcher, our former Dean, made great strides to improve the funding for research in our Faculty, to recruit outstanding people, and encourage the formation of the Dalhousie Research Foundation. To him we owe a great debt, and it is our responsibility to continue to advance the work to which he gave such tremendous impetus.

Many of these comparisons are limited in their meaning, but they do indicate that we must do better, and we recognize this.

Bulletin: *Manpower is much in the news at present. Is Dalhousie producing enough family doctors and specialists to meet the needs of its geographic community?*

Dean Murray: We are beginning to acquire the necessary background data to answer the specific questions. It is particularly difficult now, as the situation and trends are rapidly changing. However, thesre is immediate agreement that we will not change our Medical School class size until we have a better concept of the required size, and there is some national consensus on physician training. I expect that we will see those answers in the next few years.

As a general observation, I feel strongly that we do not want to train an inappropriate number of physicians. We don't want too few, and we certainly don't want to train too many. I don't think people recognize how harmful the training of too many physicians can be to medicine and medical care. We also have to get smarter about addressing such questions in the long term. So many statements about manpower are related to what is occurring now, without any clear view of the long-term impact. Some decisions about manpower in the 1960s in the United States have resulted in serious overtraining of physicians. We, on the other hand, are under pressure to reduce some of our specialty programmes, and we can see that that will produce serious problems in some areas in the future.

I am convinced that we can make better judgements about training numbers and manpower needs. We have to get rid of some of the vested interests and some of the built-in pressures that cause us to deviate us from the right answers.

Bulletin: *How do you see the physicians, community and university interacting?*

Dean Murray: We relate to the community physicians in many ways, from the training of most of those physicians to our continuing medical education programmes. We encourage their continuing interaction with the university, through our programmes at Dalhousie and the C.M.E. programmes in the community, through the alumni, through the association between university and the medical associations, and through their very important personal relationships with our university consultants and teachers.

Bulletin: *The relationship of The Medical Society of Nova Scotia and the University has always been important to both groups. Do you see any changes in this relationship or new means of communication occurring?*

Dean Murray: I agree that the relationship has always been important, and we will work hard to make sure that it continues to be a warm relationship. I would see that the relationship with the Societies of the three provinces will be increasingly important, as together we address questions relating to government, and the long-term direction of health care change.

Bulletin: *What do you see as the main priorities for Dalhousie in the short and long term?*

Dean Murray: I think I have touched on most of the areas on which we have to work immediately. The major short- and long-term goals are those that we have always maintained for our Medical School. In these difficult times we always have to keep our goals and objectives clearly in front of us. These are clearly stated in relation to our programmes in education, clinical care and research.

Bulletin: *What do you see as the major personal challenge for you?*

Dean Murray: I guess the major challenge is to try and see most clearly what needs to be done, and assist my faculty in addressing these issues. I would hope that at the end of my term I can see that our undergraduate education programme has become more innovative and appropriate to the training of a modern physician; that our relationship with students is much improved; that we have been able to recruit bright and talented young clinical investigators and researchers to our Faculty; that our research contribution has improved; that our relationship with our teaching hospitals, community physicians and medical societies has improved, and that the Medical School's impact in developing health care directions in the Maritimes has advanced. But these things are not done by the Dean — they are done by our faculty and many others. It is the Dean's job to help them carry out the tasks.

Bulletin: *Will you be able to continue as a clinician?*

Dean Murray: I was told by students and faculty that it was a good time for a Dean who was a clinician and teacher. I am not sure of that, but I know I feel it is important that I continue to act as a clinician, be visible to the students and continue my teaching. I think it's important in improving the relationships with our teaching hospitals and with our students and it's important to me as a physician-teacher. I will continue my involvement in clinical research programmes in the Dalhousie MS Research Unit as well.

Bulletin: *Do you think it will be possible to do this with the increasing pressures of administration?*

Dean Murray: Yes, with some organization and some very able support from our Medical School staff. In addition, my family is very important to me, and I will have to become increasingly innovative to allow time with my wife and children. I was initially very concerned about the time pressures on my family, but they have been very supportive and understanding. I now feel very reassured about this. Shannon, Bruce, Suellen and Brian are all adults and in charge of their own directions in life. My wife, Janet, understands and is very commmitted to the concept of university, from her own university background, our 25 years together and her recent three terms as Chairman of the Board of Governors of Mount Saint Vincent University.

Bulletin: *Do you have any final comments?*

Dean Murray: Just to state that, despite the pressures, the restraint, and the rapidly changing times, I am positive and excited about the future at Dalhousie and our ability to progress and do good things. We have an excellent and very committed faculty and staff, and we have the support of the University, the three Departments of Health, and the community physicians, who all want us to take our proper place.

And now, with my helmet ready at my side, I must return to the work at hand. Thank you for your interest. □

Changing Morbidity in Childhood: Old, Older, New and Newer

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Montreal, Quebec

Looking at a crystal ball to predict what illnesses pediatricians will be seeing in the future is probably as good a technique for forecasting as any other. Unfortunately I lack such equipment and will have to make do with the less reliable methods of epidemiologists who cover their ignorance with numbers and some obscure terminology.

The first number I offer, however, is not obscure. It is the date chosen to operationalize what I have in mind by "the future". The date is the year 2010, chosen not for it's cinematic allusions, but for two other reasons: First, I have three children who, like Alton's might some day decide to become pediatricians. They are now between the ages of 14 and 21 so if they do make this wise choice, in the year 2010 they would be about 10 years into a practice career. So I ask what kinds of illnesses will their patients have?

Second, I reason that if all else fails, by 2010 my children are likely to have produced some grandchildren and thus contribute indirectly to the wellbeing of our profession. Again I ask "what sorts of problems are these children and their friends likely to have?"

THE DENOMINATOR

Before attempting to answer these questions let me explain how I arrived at some of my conculsions in the absence of a crystal ball. After setting the date I tried to project the size of the child population for the year in question. Will it be growing, contracting or be about the same as today?

One approach to this question is to begin by examining the shape of our population pyramid, paying particular attention to the base, since it is this base moved upwards by 25 years that is the best predictor of future fertility rates. (Figure 1.)

As you know, these rates were falling rapidly until the 1950s when we experienced a small baby boom. Since 1970, however, the base has begun to shrink again and this means that the number of women of child bearing age in 2010 will be considerably smaller than it is today. So, even without any other major changes in the 100 or so other factors that influence fertility (among which the economy and war are the most important), there is good reason to predict a shortage of babies.

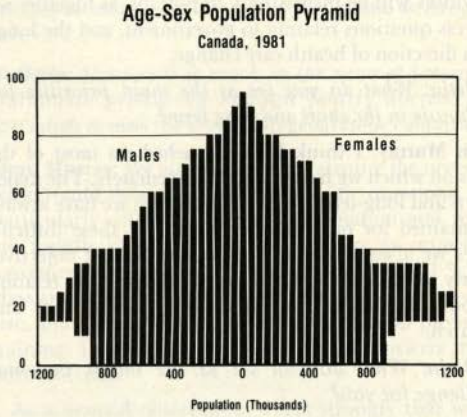

Fig. 1

To make other predictions involves moving from facts to guess work. This is illustrated by predictions based on extrapolations from current trends in birth rates, fertility rates, and infant mortality rates. In the case of birth rates there was a fall from 24 per 10,000 in 1960 to about 15 at present. Fertility rates have likewise declined, from nearly 120 per 10,000 women of child bearing age (15 to 44 years) to just under 70. Both rates show signs of levelling off over the last few years, as does infant mortality, which has fallen from 26 per 1,000 in 1960 to about 10 per 1,000 at present.

In spite of all the miracles ahead, it seems likely that each of these rates will continue to decline and will eventually level off. Of special importance is what happens to infant mortality, where the great achievements since the mid-sixties have come mostly from better health care for the poor, liberalized abortion and, above all, in recent years, the salvage of low birth weight babies. This illustrates well one of the main themes of this presentation; there is little doubt that further technologic advances could push the figure even lower. What is in doubt is the quality of the lives being saved. This is still highly controversial but some very recent evidence suggests that most babies under 750 gm born in the last few years have some neurological abnormality or are in a doubtful category.

To summarize, all things considered it seems that there may well be a shrinking child population 25 years from now. So much for the Denominator. We turn now to examine some factors affecting the Numerator — the illnesses in the future.

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THE DATA BASE: SUPPLY FACTORS

The variables one has to guess about here fall into two broad categories, crudely described as "supply" (or provider) factors, and "demand" or illness factors.

First a comment on the role of the former. What pediatricians will have to offer in the future will, presumably, reflect changes in demand, but not necessarily so. I'm not one of those who believe, as some government spokesmen argue, that demand is largely generated by the number and training of doctors. However, we cannot, in honesty, argue that there is *no* truth in this argument. There is much evidence that doctors do, up to a point, "define illness" as sociologists have long alleged. Put more simply, for example, if parents view their child's doctor as well qualified to treat school or behavior problems, and eager to do so, then they will bring such problems to a doctor. If they do not, a diagnosis may never be made. The point is that to some extent morbidity in the future will be determined by what we choose to regard as illness. If we choose not to accept that emotional or social problems are a part of health—a view I do not hold but I respect others who do—then much of what I have to say may be ignored.

This point is important for another, essentially, methodologic reason. Most data about morbidity come from studies of pediatric practices, that is from information reported by doctors. As has been suggested, this may not reflect accurately what really exists in the population because of various selection factors introduced both by parents and by doctors.

This point may be illustrated with the example of emotional problems by comparing an estimate of the rate in the general population from a study in London with figures from a sample of practices in Rochester. The discrepancy is almost 20%; that is to say these data show that there are many more children with such problems in the general population than are being recognized by pediatricians in day to day practice.

On the one hand, it makes sense to rely on practice data because it would be foolish to depend exclusively on parents' reports of symptoms of asthma, for example, if the diagnosis had never been confirmed by a doctor. On the other hand, it is well known that for a variety of reasons, ranging from ignorance, to economics, to subtle messages of disinterest by the physician, many illnesses which do exist may not be counted if they are not brought to the doctor's attention.

FRAME OF REFERENCE: DEMAND FACTORS

Before proceeding much further, an explanation may be in order regarding the title of this presentation.

Old Morbidity

"Old morbidity" is meant to convey all the conventional diseases of our generation—congenital and hereditary disorders, infectious diseases, nutritional disorders, etc. It also includes rheumatic fever, nephritis, TB and poliomyelitis, all of which are nearly extinct, along with a whole range of other chronic disorders still treated, for the most part, in a rather conservative, traditional, organ-specific manner. As the arsenal of new forms of therapy continues to increase, it is reasonable to assume, however, that just as new vaccines and better hygiene eliminated so much of the morbidity commonly seen by Alton Goldbloom, most of what remains of this "old morbidity" will likewise surrender to these advances.

It seems hard to imagine that pediatricians in 2010 will, for example, spend nearly three quarters of their time providing well child care and treating viral or bacterial respiratory or gastrointestinal disorders—as they do today. Most of what remains of communicable diseases will virtually disappear, along with otitis, croup and gastroenteritis.

I also assume that the combination of good sense, economics and politics will succeed in persuading pediatricians to accept graciously and enthusiastically the services of pediatric nurse practitioners—providing their advanced training and Masters degrees does not preclude them providing other elements of the rich tradition of nursing, including sitting at the bedside of a sick child to comfort and reassure. It has already been shown that they provide well child care or health maintenance as well as pediatricians, so there is no reason for them not to do so and thus free the doctor for more challenging tasks.

I hasten to add, however, that the methods of health maintenance will be far more challenging, complex and interesting in 2010 than they are today. For example, a large part of the maintenance package will consist of computerised registries to help follow children at high risk for any reason; and will include such procedures as biofeedback, or computer assisted learning to modify lifestyles so as to prevent accidents or other important diseases of childhood and adulthood. This includes diseases related to smoking, lack of exercise, and poor nutrition. Preventive pediatrics will therefore be highly expanded. Nonetheless, I still hope that much of it will be left to nurse practitioners — of both the old and new breed.

New Morbidity

"New morbidity" is a term introduced by Haggerty to focus attention on the emerging importance of such issues as accidents, the care of chronic diseases, behavioral, school and learning problems and those of adolescence.

What in the world then is meant then by "Older and Newer Morbidity"?

Older Morbidity

The term "older morbidity" is intended to remind you that most of these comments are based on a Western world frame of reference. But if present trends continue, by the year 2010 much of the developing world will still be

plagued by diseases that we no longer include even in our list of old morbidity. The nutritional problems alone of children in the Third World are today the shame of the Western world. If they persist for another 25 years, "shame" will be much too mild a word to describe our unthinkable indifference.

Newer Morbidity

By "newer" morbidity I have in mind several ideas which together constitute the main theme of this presentation. First, it refers to a substantial increase in new morbidity problems just described because of the persistence of the same phenomenon that brought them into focus in the first place; that is, a relative decline in old diseases, alongside other changes which stimulate the growth of these conditions.

Second, it refers to similar problems which might be termed "iatrogenic" because they arise out of the array of medical marvels still to come. These include major ethical, social and psychological problems, related, for example, to the use of infusion pumps for diabetes or thalassemia, and the problems of compliance associated with them. All of these should be a part of child health care in the future.

Third, we must anticipate that a whole new set of medical problems will emerge as side effects or "spill offs" of the use of these newer, more powerful weapons of detection and therapy. Some of these will be represented by new forms of physical morbidity as, for example, the care of the immunosuppressed child following organ transplantation. In this group I include a sub-set of "uncertainty issues" by which I mean the myriad of instances of therapies about which we know little or nothing regarding their long term physical effects. These include old therapies with new hazards e.g blood transfusions which may lead to AIDS; newer therapies such as cytotoxic drugs; and the hundreds more now in use or coming on line where the later consequences are simply unknown! It is worth emphasising that these effects may never be known unless there are research funds available to study them properly. The uncertainty group has a second component as well. Stated simply, we need to be prepared to expect the unexpected because much of what will surely happen in the area of technology cannot be foreseen.

Finally, Newer Morbidity must include a sepraate category specially reserved for the very profound effects improved gene detection may have on child health — for better and worse.

CHANGING AGENTS OF DISEASE

The main influences on the spectrum of newer morbidity will not therefore be changes in the old agents of disease but rather the by products of new diagnostic and therapeutic procedures as well as problems that arise out of the dramatic changes that will take place in the host child and his environment.

By now I hope you are waiting with bated breath to hear more about what I mean by the "newer morbidity" — what I think will be left when most of the infectious diseases are gone; when well child care is in the hands of a capable colleague; and when much of the management of other, more devastating chronic disorders of today are eliminated by the rapidly expanding skills of the transplant teams, geneticists, and the manufactureres of artificial organs, limbs and joints.

CHANGING HOSTS AND ENVIRONMENTS

To find the rest of the answer we must examine closely the other major influences on child health. I've talked briefly about the control of some of the main *agents* of disease, such as "bad viruses", and also about new methods of treatment of the host whose "bad organs" may be replaced with artificial ones or transplanted. To this list must be added, "bad genes" some of which will be detected early by gene probes using samples of maternal blood. Presumably when the results are positive, steps can be taken to prevent their phenotypic expression. Still others may be modified by the miracles of genetic engineering. Scriver estimates that about 20% of Mendelian disorders will soon be treatable, especially those instances when the gene product is accessible in the extracellular fluid. However, he cautions that our hopes for genetic engineering may be too high; that this approach will be feasible for only a fraction of the 3,000 or so genes of medical interest.

But for the epidemiologist, there remains a third part of the holy trilogy of causation—agent, host, and environment—the environment. I subdivide this into *three* parts: the micro-environment of the family; the meso-environment of society; and the macro-environment of air, sea, water, housing and roads. Each of these is changing as rapidly as medical technology and as each changes it must have an impact on child morbidity.

The Micro-Environment

A useful starting point is to consider the child's micro-environmment—the family. I feel confident in predicting that most children will still have mothers in the year 2010, but my confidence ends there. The family unit has changed so rapidly even in my relatively short professional lifetime, that it seems bound to continue to do so. Not only will there be more single and more older parents, by choice as well as by accident, but there will certainly be more children where the paternal contribution to the genetic makeup is not known because of sperm banks, artificial insemination, etc. This conjures up all sorts of problems, not simply for the geneticist but for the ethicist as well as the paediatrician.

I also predict that there will be still fewer large and extended families as mobility increases and there will be many more working mothers. Based on the present rates of divorce, about 40% of children will have "lost" a parent by age 16. Many remain as single parents while others marry again and plunge the child into the uncertainties of a "reconstituted" family.

These may all be on the deficit side. On the positive side there will probably be more time for parents to spend with their children. More parents will work fewer hours and more will work from their homes, using computers linked to other places.

The net effect of these changes is hard to predict. However, my best guess is that we will have more children subjected to more stresses as a result of being raised in a micro-environment of family types and lifestyles that are not what nature intended. If true, this will result in many more behaviour and school difficulties than we see today.

The Meso-Environment

At the meso-environmental level, it seems clear that radical social changes will also affect child morbidity. I have already mentioned changes in the workplace and in the provision of day care which, overall, should benefit children. But in addition to this list, there is a wide range of other shifts in values, attitudes and behaviours that will inevitably take place and which are relevent to child health. This includes the use of drugs and alcohol; changes in reproductive behaviour and factors influencing rates and forms of juvenile delinquency. The media already exerts an enormous—and generally unfavourable—influence on our social behaviours and this must surely increase as its technology expands. The impact of computers on our society a mere five years from now, let alone 25 years hence, is almost impossible to imagine. We may wish to consider also what changes in health care financing of the kind some politicians are now advocating could have on the health care of children. There are many other rapidly changing social factors, many like the pill and abortion, the by-products of technology — the effects of which are obviously very difficult to estimate.

But present trends—our best predictor of the future—are not encouraging. There has been a dramatic increase in deaths due to suicide and homicide over the last 20 years. We can all guess at some of the reasons.

The sources of violence and despair that lead adolescents—and younger children—to suicide and homicide, rates that have nearly doubled in the last decade, are not hard to find. We know what our children see on T.V.; we know of their anxieties about unemployment; we know the visual images some of the rock groups convey; we should know what our kids think and fear about the arms race. Our 14 year old often has nightmares about nuclear war; he has trouble falling asleep and our older children are loathe to discuss the topic.

The Changing Macro-Environment

We should also try to remember how important the rivers and lakes, hills and parks were to us as children and that, in the short span of 20 years, we can no longer swim or fish in the St. Lawrence. I suspect that even here in Halifax, 200 miles further downwind from Inco in Sudbury, or Ontario Hydro's generating plants, or Eldorado's nuclear waste piles in Port Hope, the same problem has emerged with dramatic intensity. Whether the acid rain that is destroying this vital component of our living space comes from the U.S. or Canada is not the issue. Nor is it important where the PCBs and other garbage being dumped in the Niagara River originates. The issue of how radioactive waste will be disposed of is largely ignored by the public and by our profession; we know little about how changes in trace elements affects the quality of food and water; and the controversy over th extent and consequences of lead in the air and dust is still not resolved.

All that really matters in the end is that in a very real sense the physical world in which our children will bring their children is likely to be much less attractive and healthy, if not actually more dangerous, than that in which we grew up. We simply do not know what morbidity all this will generate but we cannot continue responsibly to ignore what little we do know about the effects of low level radioactivity, for example.

This forces me to end on a sober note. Apart from reminding you of the point I made earlier about the growing possibility of turmoil of unimaginable proportions, if we continue to neglect the basic needs of the Third World for another 25 years, I must remind you also of the simple fact that if physicians in general, and pediatricians in particular, continue to behave fatalistically and passively towards the arms race, the chances are very great that the year 2010 will be marked by the great paradox of child morbidity: as we stand on the threshold of a new world, armed with wonderful weapons for diagnosis and therapy, we may face an old world that has been totally destroyed. The ultimate irony is that there will be no diseases of childhood in the year 2010 because there will be no children left to experience them. □

EARLY DETECTION ON OCULAR AMOMALIES

Continued from page 118.

such a detection possible can be very rapid and simple. That extra two to three minutes spent with the infant can save many years of fruitless attempts to treat a congenital ocular anomaly detected only later in life. □

Additional Reading

Pediatric Ophthalmology; Nelson, L.B., Saunders 1984 Phildelphia.

Ophthalmology for the Pediatric Practitioner; Robb, R.M.; Lettle Bran Co., 1981 Boston.

General Ophthalmology; Vaughan, D. and Asbury, T.; Lange M. Public 1983 Los Altos.

My Spotty Teenager

J.B. Ross,* M.B., F.R.C.P.(C),

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INTRODUCTION

The face of acne vulgaris has changed dramatically in the last thirty years. Since the 1970s scientific research into the mechanism of production of acne and its optimal treatment, coupled with pharmaceutical advances, has removed hordes of miserable scarred adolescents that used to haunt our streets. The challenge now is to ensure that these benefits are available to all for whom physicians care and that the physical and economic toll is kept to a minimum.

PATHOPHYSIOLOGY OF ACNE

Acne vulgaris is a disorder of keratinization of the pilo-sebaceous orifice. Probably, it will be shown in the future that it is only one group of disorders of pilo-sebaceous keratinization each having a different natural history. For example, hidradenitis suppurativa also starts with blackhead-like occlusion of the pores but affects different sites over a different time span.

The orifice of the pilo-sebaceous canal is a complex structure. In health, a loose basket-work of stratum corneum surrounds lipid material produced by the sebaceous gland, mixed with contents of the hair canal. The ecology is also complex. Four distinct microbiologic groups can be recognised.

1. *Propionobacterium acnes.* (The "acne bacillus").

2. Transient and resident bacteria such as *Staphylococcus aureus, Staph.albus* and a number of other species.

3. Transient and resident yeasts such as *Pityrosporum ovale, Candida albicans* and other species.

4. *Demodex follicularum,* an obligate human mite which is a permanent resident of the pilo-sebaceous canals of the face of post-pubertal subjects.

FACTORS ASSOCIATED WITH ACNE

Presence of *P.* acnes.
Increased pilo-sebaceous lipid production.
Presence of C3 in canal wall.
Polymorphonuclear leucotaxis.

A total explanation of the pathogenesis of acne is still elusive. It is thought that an excess of *P. acnes,* set in a particular hormonally-medicated background, modifies the nature of the poral lipid plug. The next stage is more speculative but assumes that the conversion of even-number chained fatty acid present in health to uneven number chains, is the cause of an inflammatory reaction in the hair-canal wall. The appearance of C3 is the initial immunologic step of inflammation, followed by a polymophonuclear leucotaxis. This then is the beginning of the superficial acne papules and pustules and of the deeper inflammatory cystic lesions. The development of acne is shown in Figures 1 to 5.

Thus a classification of acne as

Superficial and Deep
Inflamed and Uninflamed

replaces the traditional one of a large number of different clinical states recognised on a empiric basis.

The modern management of acne is based on an understanding of these mechanisms. Many of the agents used for the treatment of acne are now known to specifically affect one or several stages of the reaction. These agents become the tools of a clinical craftsman to be manipulated with the same sort of skill an an organist pulling different stops to achieve a specific sound color. The goal is generally not to cure but to achieve maximum benefit and to maintain it that way.

DIAGNOSIS

Even though acne vulgaris is the commonest acne appearing in adolescents, other causes should be considered if only to be dismissed.

Endogenous hypersteroidism and androgenization (Cushing's Syndrome etc.).

Iatrogenic hypersteroidism (decadron acne, oral steroids)

Drugs: Diphenylhydantoin, bromides, iodides, actinomycin etc.,

Extrinsic acne (industrial tar, chlorine etc.,)

Chromosomal abnormalities: XYY syndrome

CLINICAL FEATURES

Can be considered as four different stages any of which can exist alone or as a mixture of some or all.

Uninflamed comedones.
Superficial papules and pustules.
Deeper cystic lesions.
Conglobate lesions.

MANAGEMENT

Normal washing procedures and diet are advised. The following groups of agents are available, and a general

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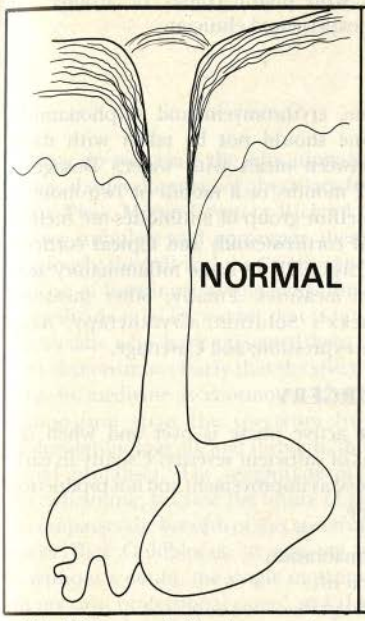

Fig. 1 The normal pilo-sebaceous unit.

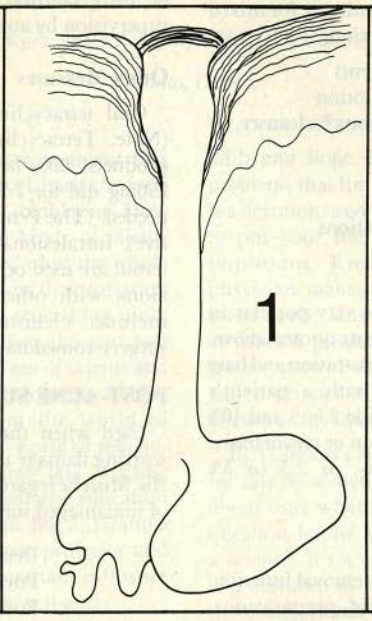

Fig. 2 First change is keratin modification with expansion and thickening of pore content.

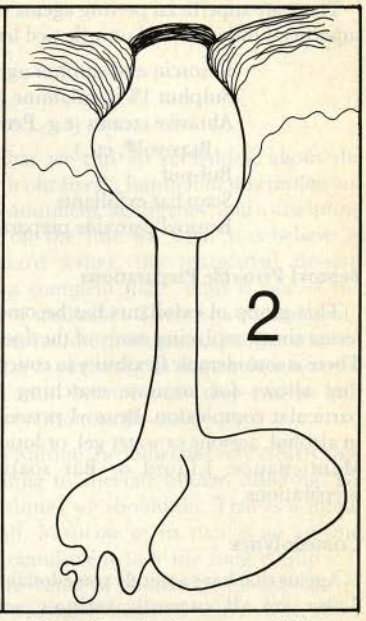

Fig. 3. Comedone becomes established.

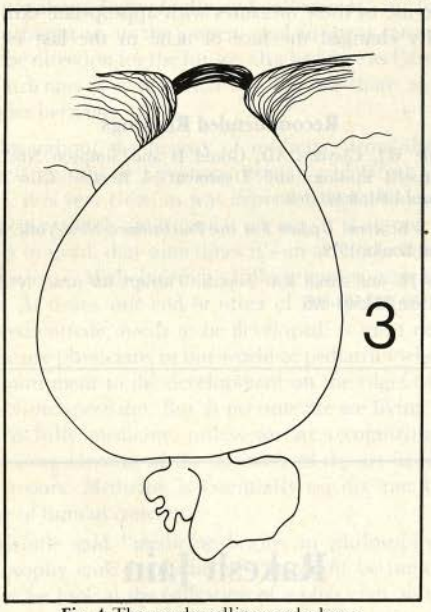

Fig. 4. The poral swelling can be large without inflammation.

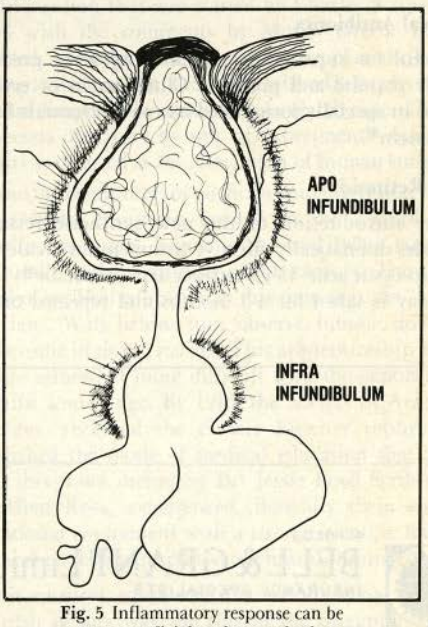

Fig. 5 Inflammatory response can be superficial or deep or, both. Individual units joined forming conglobate acne.

guide to their indications is given. The best prescribing becomes a skill based on familiarity of use. Hence, as with many drugs and agents, it is best to become familiar with a few preparations agents only, with confident predictability.

Many feel that it is best to treat adolescent acne as soon as the first physical signs appear. Thus many of the providers of health care . . . pharmacist, family doctor and dermatologist . . . can be of benefit to the patient acting independently or together.

Exfoliants

These are superficial peeling agents suitable for mixed superficial inflamed and uninflamed lesions.

Resorcin and sulphur agents
Sulphur 1% in calamine lotion
Abrasive creams (e.g. Pernox® cleanser, Brasivol®, etc.)
Buf-puf
Soap bar exfoliants
Benzoyl peroxide preparations

Benzoyl Peroxide Preparations

This group of exfoliants has become very popular in recent times, replacing many of the agents quoted above. There is considerable flexibility in concentration and base that allows for accurate matching with a patient's particular complexion. Benzoyl peroxide 2.5, 5 and 10% in alcohol, acetone or water gel, or lotion or cream bases. Maintenance: Liquid or Bar soaps, or 2.5 or 5% preparations.

Comedolytics

Agents that have a purely comedonal removal function. These are all currently retinoic acid preparations. Retinoic Acid 0.01, 0.025, 0.5% in lotion, gel or cream base.

Topical Antibiotics

Useful for superficial inflammatory acne, predominantly papules and pustules. Clindamycin or erythromycin in specially formulated bases e.g. Duonalc lotion or Staticin®.

Oral Retinoid

The introduction of the new synthetic retinoids provides dramatically effective treatment for recalcitrant nodulo-cystic acne. 13-cis retinoic acid (Accutane®) 1 mg/kilo/day is taken for 4-5 months and repeated once if necessary. Because of toxic potential physicians should be fully familiar with pharmacology or arrange for supervision by an experienced clinician.

Other Measures

Oral tetracycline, erythromycin and sulphonamide. (Note: Tetracycline should not be taken with dairy products; take between meals with water.) Dosage is 250mg qid for 1-2 months or a month or two more as needed. (The Penicillin group of antibiotics are ineffective). Intralesional corticosteroids and topical corticosteroid are used occasionally in acute inflammatory acne along with other measures. Finally, other measures include: Vleminckx's Solution; Cryotherapy; Acne surgery-comedone expression; and Curettage.

POST-ACNE SURGERY

Used when the active phase is over and when the scarring damage is of sufficient severity. Usually in early 20s. Must be regarded as improvement and not production of undamaged state.

Dermabrasion.
Poral lift.
Poral graft.
Excision.
Collagen injection.

The use of these measures with appropriate skill has literally changed the face of acne in the last twenty years. □

Recommended Readings

Cunliffe WJ, Clayden AD, Gould D and Simpson NB: Acne Vulgaris-Its Etiology and Treatment: A Review. *Clin Exper Dermatol* 1981; **6**:461-469.

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The Pediatrician of The Future

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How do we create the educational environment that fosters the development of physicians like Charles Scriver, Barry Pless, Morris Green or Richard Goldbloom? How do we stimulate and encourage these kinds of talent? Obviously they all had the "right genes", but the whole process of learning and role modelling in the profession of medicine is so important that it is a crucial question. Physicians who have presented here over the past two days demonstrate clearly that the spectrum of talents and gifts in medicine is enormous. The comments of this symposium span the spectrum from the world of molecular biology to, and through, the world of psychosocial pediatrics. The magnitude of my task is quite overwhelming, because the future of pediatric education encompasses the breadth of this spectrum. But.....I trained under Dick Goldbloom, he was my first professor and is without a doubt, the single most important influence on my own professional career, so I'll give it a try.

We cannot assess our future validly unless we reassess our past. I'd like us to reflect on the profession; the calling that we share. Individually and collectively, our history has brought us to the present and in great measure it sets the direction for the future. Our heritage as Canadian pediatricians is a very rich one but we share an even broader heritage.

Throughout the history of medicine, from the very earliest writing of Egyptian, Roman and Greek physicians, it is very clear, as was expressed again today, that medicine is both an art and a science. It is a grave error for us to think that sometimes it's an art and sometimes it's a science. Medicine, in it's fullest expression, is always both. At times, one end or other of the spectrum seems to predominate; needs to be developed; is most needed. There are physicians in our world of pediatrics who find a commitment to the development on the edges of each end of the spectrum. But at no time are we living a life that is fully medicine, unless we are recognizing that there is an element of the science and the art in all our endeavours. Medicine is essentially science put to the cause of human concern.

Aristotle said "medicine begins in philosophy and philosophy ends in medicine". It might be important before we look at the education of a physician, to reflect on some of the philosophy that underlies contemporary medicine. What are we about? T.C. Tosteson in the *New England Journal of Medicine* special article, "Learning in Medicine", said "the philosophy in which medicine begins is a devotion to learning, a devotion built on the faith and hope that we can do something about the problems that limit our lives". Implicit in this profession is a devotion, a commitment, an urgency, and a discipline to put your life on the line for what you believe is important. Richard Asher, the insightful British physician makes a comment that "sloth is one of the seven deadly sins of medicine:. There is a commitment, at times a passion, for the profession, for the science, for the patient that is necessary in the environment in which physicians train because only then can we put science at the cause of human dis-ease.

In Tosteson's definition, he indictates very clearly that we can do something to alleviate human suffering. He doesn't say what things we should do. That is a moral question for us all. Medicine at its root is an art and a science. It's a commitment to a life long enquiry. It is a devotion to the cause of knowledge for the sake of those individuals who have disease. I believe with Barry Pless' very broad definition that the scope of the problems to which we have committed ourselves is as broad as the discussdion that was started by Charles Scriber and ended with the comments by Morris Green. Harvey exhorted, when the scientific component of medicine was coming to the fore, that those who wished to be physicians must be "impelled by a curiosity to search out and study the secrets of nature by way of experiment". Scientific enquiry is directed at the alleviation of human suffering.

From the beginnings of medicine into this century there has been an enormous growth in the science. The scientific explosion, begun in the mid 1800s, escalated profoundly at the beginning of this century. The classic model of medical education at this time, was the "master clinician". Walk behind him, observe, imitate, do it and you become in time a master. This apprenticeship model became somewhat more difficult with the expolsion of scientific knowledge. By 1910, the Society of American Colleges, received the classic Flexner report that established the mode of medical education that all of us in this room including Dr. Jessie Boyd Scriber and Dr. Allen Ross, experienced. Basically there was an educational component with a strong scientific foundation and a subsequent period of clinical training.

This medical education that we all know, did not diminish in any way the role of the preceptor, of the mentor, but it had to take into account the enormous explosion in scientific knowledge. It was now becoming more and more difficult for the master clinician to know all. The curricular development that we know as medical undergraduate education became more and more codified and formalized. One of the dangers of that formalization I believe, is that it is separated out the basic science from

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the clinical. First, you do your two years sitting in a classroom learning the basics, then you go see patients (the "real stuff" of clinical medicine). This has created an artificial separation that to this day, can be divisive in the profession. It can present models at either end of the health care spectrum, the science or the art, and fail to demonstrate clearly that the challenge of contemporary medicine with scientific advance skyrocketing in its complexity and volume, and with the demands on the art becoming more and more intense as society changes and the doctors assumes different roles, is to keep these two aspects integral and whole.

In 1985 how do we define medicine? What is its end? It is possible that the technologies around us can force medicine into the position of being a number of means with an unclear end? What is medicine? A major inherited abnormality that could be corrected is clearly medicine in our fundamental understanding. What if it is a minor abnormality? A major facial abnormality we would classify as medical care. What of purely cosmetic surgery? Is this medicine? Does it have anything real to do with health or illness? What is health? Pediatrics teaches us well that health is not simply the absence of disease. Health is a fuller, more complete reality. Etymologically, the word health comes from the same roots as the words whole and holy — of a piece, together. The alleviation of physical suffering is an important part of our calling, an integral part. But there is another element that is the promotion of real health.

At times we look at the educational process for residents and fellows very introspectively and forget that there are larger issues that shape our world. In this day and age, with our technical and scientific and mechanical advances, we have to step back and ask "How is medicine evolving?". Is this care? Is it cure? Is this health in any meaningful definition of the word? Unless we reflect on these fundamental questions we will not know what we want our physicians in learning to become. We cannot set goals for them unless we can answer the fundamental questions.

In *Physicians for the 21st Century*, there are six major trends that the Association of American Medical Colleges have put forward for our consideration if we are to train physicians for the future.

The *first of the trends* is that the "increase in the rapid advances in biomedical knowledge and technology will continue". Self evident. The consequences of this trend have enormous effect on the educational process. It is no longer sufficient to believe that the students simply have to learn more. New knowledge is achieved at an alarming rate. Sometimes we teach as if students were floppy discs designed for information gathering and retrieval! We have not addressed well the teaching of basic principles. In the face of these rapid increases in biomedical knowledge, we must assess very carefully what and how we teach. How many of us teach as if there really were a single answer, and the fact that was discovered yesterday is dogma today? Factual information is almost always presented in a dogmatic manner to students who will spend most of their life dealing with ambiquity. How many times do we really know the diagnosis? As Dick Goldbloom asks, "Does it matter?" What really matters is that we know what the problems are. Parents are not interested at all in "the diagnosis". They only want to know "can you do something about it?" and "is my child going to get better?" as a consequence. The questions of how we present information and basic principles, are pressing. I have heard it said "education is what you have left when you have forgotten all the facts". Real education is the framework. It is the skeleton for our questions and it's the approach to our answers. It is more important to clarify and analyze the question than it is to give the answer you have today. The concern for information management demands a new approach as we strive for a return to the basics in the best of medical education.

How can we provide a learning environment that helps students to learn the expanding basic sciences and at the same time stimulates a committed awarness of all the other demands of the profession? The environment in which we currently teach, emphasizes individual facts. The facts seem to grow in number and complexity. How can we possibly provide an environment where anyone clinically trained, would wish to pursue a research career? An individual with the spirit of enquiry, the natural base for a research career, rapidly has it stamped out of them in medical school. They are too busy "getting the facts"; trying to cover the basic information so they can "get through", so they can "survive". Questions are going to become more complex for the physicians of the future and not less. The foundation in the sciences and the bridges between clincial and basic science teaching at all levels of medical education, must be preserved and protected. The individuals who bridge are rare. The danger in the future is that we may not feel it important enough to bridge those gaps. Without the bridge medicine deteriorates into some of the art or some of the science and not the fullness of either.

The *second major trend* we have to contend with is that "the biomedical, biochemical, mechanical and electronic technologies currently available for treatment and prevention will become more powerful". There was a recent cartoon in the Toronto *Globe and Mail* that had an elderly couple sitting in a store with a large glass display case. The gentleman sitting behind the desk was saying to them as they looked at boxes filled with artifical hearts, "Now this one's a pretty good deal, it was used only by a little old lady in Pasadena who used it to go to the store". Perhaps we've not gone that far in our approach to technology but that machinery can become overwhelming! The technology, itself, can be disease promoting and disease provoking. We have to learn how to help people deal with the technology so that compliance can be assured. How de we help persons whose sense of self has to be based on a unique dependence, on machinery? We very rarely discuss with

our resident staff what must it mean to a parent to walk into a room and see your baby with tubes at either end and electronic gadgets making noise. Our dependence on technology is going to become greater. The danger is that we do not reflect on the end of medicine; that we will have people thinking that they can drive their body into the shop like a car. For every piece, as it wears out we will put in another one. Is that medicine? Is that health? It is in keeping with our dependence on technology with this desire to renew the body by recharging, but is health only a bodily reality? The ability to help individuals cope with this technology, not only to understand it, is an enormours challenge for physicians of the future.

Third, "medical practice will become more and more highly specialized". Sub-specialization has occurred throughout all of medicine. We now have medical specialists who will tell you how to make sex, how to make a baby, how to feed your baby, how to die and how to mourn. These are all aspects of medicine. Every aspect of human life has become professionalized. This is not necessarily inappropriate, but specialization has created a very interesting kind of dilemma for physicians. The fundamental understanding of medicine, passed down through history and the best of the physicians that we know, sees patients as whole persons, though their knowledge might be highly specialized. Highly specialized knowledge puts great demands on communication and cooperation for the good of the whole. How characteristic of physicians are communication ability and cooperation? What is the role of the generalist in the future?

Fourth, "it will become increasingly recognized that many of the factors determining health and disease are social in origin". Pediatricians know this well. How are we preparing our residents for the diseases of the children and familiwes we see? How comfortable are they with dis-ease, other than organic? They must know basic medicine. They must know the basic therapy. But I suggest that there are a number of other issues of disease that are social in origin. We must define clearly and accept for ourselves that they are part of the full spectrum of health and teach accordingly. "Soft science" must become respectable!

Five, "Increasingly individual patients will need advice about the technologies and advances available to them". This is not simply advice about technical quality as if we were a consumers report on biomedical engineering. It's advice about the risk, the benefit, and helping individuals to understand why they are looking for medical technology and what are the consequences of that technology. Bioethical decision-making will be a formal educational requirement for physicians of the future. It will become more obvious that the competing value systems in our world will make it necessary for us to engage in formal discussion about how we make judgements about what is good or bad for a patient. There is no longer an accepted "public ethic" in our society.

Finally, "the environment for medical education will be increasingly shaped by financial and economic considerations". This country has an extraordinary health care system. If we do not reflect seriously about the way in which we are using the health care resources in the country, we will do a great disservice. We must look at our utilization of the health care system. Cost containment has already affected residency programs. Those cost containments are going to become more restrictive and more severe. We will be forced to address very specific questions in the immediate future. Could we return to apprenticeship learning? Have we become too dependent on resident delivered service as we have developed tertiary care? Are we really willing as a profession to share the responsibility for care with other health professionals? We are still a very independent profession. The health care cost containment problem will present grave dangers to the future of professional education, particularly in the specialities. We must address that. The other financial question that I think will be addressed, formally or informally, is the relationship between pediatricians and family physicians. Throughout the country the pediatric educational programs are modified and affected by different philosophies about the effectiveness and the cost efficiency of using family practitioners for primary care of children. We must address honestly and directly, the questions of the training for general pediatric care; how well that can be done and who should do it.

These trends reflect some quetions that are facing us in the future. No matter how fustrating or difficult or confusing it can become, it's never dull. The scientific advances that we have seen and will see more of in our own futures, are quite marvellous. The rate at which they are occurring is sometimes quite alarming because our moral reflection and social reflection on their benefit has not kept pace with their development. The scientific advances are having great impact on those we train. They have to learn more and more complex information. We have to take that into account. The societal demands on physician are also becoming more and more demanding. In our society we're not only doctor and scientist but priest, rabbi, minister, town clerk, and extended family. We're expected to be all of this in an excellent way.

Sometimes I feel a little overwhelmed by the number of external determinants that are affecting and shaping the future of the profession I love. When that happens, I remind myself of Kenny's First Law of Medical Education, and it reads: "the environment in which you train is more determinant of the kind of physician you become than anything that you're taught". As long as that is true, our future is secure. If I ask any of you what was the single most important determinant of the kind of physician that you have become, of the best of what you have become as a physician, I would be surprised if many of you gave ma a scientific fact or a historical event. I think most of you would name a

person. I asked Dick that question last night, and he said his father Alton Goldbloom, Jesse Boyd Scriber and Allan Ross were his sources of inspiration. Each of us has been touched by master physicians, who have a spirit of enquiry, a thirst for excellence and a commitment to the fullness of health. These truly master physicians have a vision that can see beyond their own area of expertise. They are open to challenge and change. They were committed to the families and children that we have come to serve. For no matter how much the world around us is shaping who we are, no matter what the financial contraints, I believe that the kind of experience we are having here today is medical education in the best sense. In coming to honour someone, who is a role model, a physician who is insightful, challenging, warm, stimulating and compassionate, we can return to our history. There is no need to be concerned about the future of the profession. We know well that when there is "good stuff" in your roots there's unlimited potential for growth and development. And our roots run deep with the lives of men and women of brilliant science and great compassion. □

On Asthma

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Asthma is wide spread among the children of Nova Scotia. For many of these it is only a nuisance condition that occasionally keeps them home from school or play. For too many however, it is an incapacitating condition that completely alters their lifestyle, as well as that of their family members.

There are many precipitating causes for asthma. The most devastating is the asthma brought on by exercise and effort. In these situations a few minutes of running, bicycling, wrestling, or even laughing will bring on asthma of varying degrees of severity. This frequently results in the child gradually retreating from gym, sports and stenuous activities.

Adults, including physicians,parents, teachers, scout leaders, etc, adopt varying philosophies toward these children who wheeze on exercise. The extremes are the "mother hens" and the "sergeant majors". The mother hens see a child wheeze when he runs and therefore he is not permitted to run. They take their children out of gym activites, do not allow them to participate in sports and encourage them into a sedentary type of life, The sergeant majors say "shape up or ship out" and through this philosophy once again the children are excluded from participation in their peer activities.

There is a better way. The Lung Association of Nova Scotia has devoted a large part of their energy and resources to the evolution of Family Asthma Programs throughout Nova Scotia. These programs are a combination of physical activities, basically centering around swimming, and educational periods for parents. The physical activity part of the program takes advantage of some of the facts that we are aware of regarding exercised induced asthma. There include:

1. Warm up periods prior to effort;
2. Periods of intense effort with intermittent rest periods;
3. Proper breathing mechanics; and
4. Swimming

All of the above improve an individuals exercise performance. For unknown reasons the same amount of energy devoted to swimming does not produce the wheezing that the amount of energy put into running or jogging would do.

The application of these principles, along with the appropriate use of medications including prophylactic bronchodilator therapy prior to anticipated exercise and the use of Intal®, remarkably improves the lifestyle of children and family members affected with asthma, particularly during the period when we are waiting for mother nature to restore their exercise tolerance, which frequently takes place at maturity. I encourage you to avoid the mother hen and sergeant major approach to your children with asthma and I particularly encourage you to support and to use the Family Asthma Programs that are in operation in various localities in Nova Scotia.

If there is not a program near you, contact the Lung Association and one will be provided. □

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Early Detection of Ocular Anomalies

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INTRODUCTION

Because of the recent advances of surgical therapy in pediatric ophthalmology and also because of our increased knowledge of some very important clinical associations between treatable systemic disease and some *congenital ocular anomalies*, the *prompt* and thorough *examination* of the newborn's eyes has rapidly become of *paramount importance*. Family doctors and pediatricians, by their early involvement in the care of an increasing number of children, are often the best professional resource available for an early detection of congenital ocular anomalies.

First, some of these problems will be presented. This will be followed by the description of an examination routine applicable to any environment including the neonatal nursery.

I. CONGENITAL DEPRIVATION

As mentioned earlier, many of the ocular anomalies detected early are actually treatable. For some, only the earliest treatment can be significantly successful. Classically, this is the case of the *congenital cataract* more typically, the unilateral congenital cataract; and in a broader sense, any conditions which obstruct, from birth, the path of light on its way from the outside world to the retinal photoreceptors can be considered similarly, as a cause of congenital visual deprivation. Therefore, the early detection of congenital cataract, of for the same reason of *lid ptosis* and any other malformation obstructing our view of the eye, is of paramount importance for the visual recovery of the involved eye. Like congenital cataract, most lid anomalies can be treated early in a fully satisfactory manner. *Corneal anomalies* are also visible with the naked eye when looked for and represent another group of congenital visual obstructive conditions that can also be treated with a reasonable success rate by a well organized pediatric ophthalmology centre. And again, *early treatment* made possible by *early detection* is the *key* to success.

Many other conditions, more difficult to detect, can be the cause of congenital visual deprivation. Some can be treated but many others are unfortunately, not yet emenable to successful therapy. Fortunately however, the easily detectable conditions are those very ones for which our modern therapeutic approaches have so far proven most rewarding.

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II. CONGENITAL STRABISMUS

Apart from the problem of congenital visual deprivation, there is another cause of poor visual development which can be detected at birth by a non-specialized examiner. It is the case of *congenital strabismus*. While the entity is rare, its significance is great. Indeed, for example, *congenital sixth and third nerve palsies* can have devasting effects if the deviating eye is not treated early against the development of amblyopia. While most congenital sixth nerve palsies will recover within three months, almost all cases of third nerve palsy are left with a permanent deviation and some lid ptosis, therefore, making this particular entity even more important to detect for early treatment. Third and sixth nerve palsies are only two of many possible congenital ocular motility problems present at birth; and most of them can actually be detected quite readily if a proper examination is performed. As a rule of thumb, one should remember that *no constant strabismus nor any nystagmus is ever normal in a newborn baby and even less so at any later date.*

III. LACRIMAL SYSTEM ANOMALIES

Another quite dreadful looking congenital ocular anomaly encountered in the neonatal nursery, and which in fact does rarely threaten vision, is the *congenital dacryocele*. This bluish mass in the lower inner can thus of the newborn readily transilluminates and can be bilateral. It is caused by the entrapment in the lacrimal sac of a mixture of mucosal secretion and possibly amniotic fluid, between the blocked tear duct and a valve-like closure of the common canaliculus. No one really misses this malformation but it can easily become infected if it is not emptied and cured early by a lacrimal duct probing.

Interestingly, this is almost the exact opposit situation to the frequent *congenital lacrimal duct obstruction* which is the typical example of a congenital defect better treated surgically *only after a certain delay*, if at all. While the diagnosis of congenital lacrimal duct obstruction is rarely made before the second or even the third month after birth, it is actually present at birth. It consists, in most cases, of the non-canalisation of the point of junction between the lacrimal duct and nasal mucosae, way down in the distal portion of the naso-lacrimal duct.

However, if it is not prevented by cicatritial processes caused for example by repeated infections or overzealous early probing, the uncomplicated natural course of over 90 percent cases of congenital lacrimal duct obstruction is a spontaneous resolution within the first twelve months of

life. The more successful regimen for problems while waiting for a spontaneous resolution, is a simple well applied daily massage of the lacrimal sac well behind the inner canthal cress, and the occasional seven day pulse erythromycin ointment therapy against the occasional conjunctivitis or canaliculitis. Only the lack of response to antibiotics after cultures for sensitivity or the incapability of parents to deal adequately with the problem, are indications for early probing. That probing should be considered as a microsurgical procedure if one considers the tenuous nature of the tissues dealt with. It should be done under controlled condititons in experienced hands, under general anaesthesia, and preferably with direct visualization of the lacrimal probe under the lower turbinate. Each case should have a positive identificaition of a fluorescein dye saline injection in the nasal cavity through the upper and lower canaliculi.

Therefore, in these cases, the ophthalmologist should not only be involved initially to confirm the diagnosis of congenital bacrimal duct obstruction, but according to the course of events, sometimes again at nine or twelve months to deal with any residual problem. The initial visit is important because other problems like congenital glaucoma can mimic the tearing caused by a blocked duct.

IV. ASSOCIATED SYSTEMIC ANOMALIES

Now let us rapidly go over some easily detected ocular anomalies that are important due to their associated systemic conditions. For example, the apparent absence of any eye or its small size is often found in infants suffering from *chromosomal anomalies*. Telecanthus or the abnormally large distance between the two inner canthus can be the harbinger of true hypertelorism and that particular anomaly is typically present in cases of anterior *encephaloceles;* an important clue before contemplating a diagnosis of simple congenital nasal polyp. On the eyeball itself, the simple presence of a *pinkish mass in the lower temporal area* accompanied by preauricular tags can lead to the early detection of a hearing deficit in cases of Goldenhar's syndrome. The same in the cases of *Duane's syndrome* where the involved eye cannot move laterally and seems to retract in the orbit when it moves toward the nose. Conversely, in cases of the *Pierre Robin anomalad*, the ophthalmologist should be called upon to verify the possible presence of glaucoma or retinal malformations. This goes also in cases of facial dysmorphism and more specifically in *cranio-facial dysostosis* where various treatable strabismus have been described. And if an infant presents a constant but somewhat variable strabismus with or without ptosis, *myasthenia gravis* and *thryoid function* anomalies have to be suspected.

V. EXAMINATION TECHNIQUE

The form of examination necessary to detect all of the important congenital ocular anomalies we have discussed so far is quite simple. A penlight or the light source of a halogen otoscope will be a good enough illumination for an adequate examination of the external aspect of the eye. Indeed, lid anomalies, corneal opacificaitons or malformations can all be seen easily if a little time is spent looking for them.

To evaluate the motility of the infant's eyes one simply has to hold the baby at eye level in a slightly supine tilt position and rotate with him in a rather brisk manner on few degrees. Half a circle to the right then to the left is often sufficient to get a good vestibular reflex sending the eyes of the baby in a conjugate manner in the direction of the baby's displacement. In this way, the lateral and medial recti of each eye can be assessed simultaneously, therefore, giving a good idea of the function of the sixth and third cranial nerves. The other great advantage of this vestibular stimulation is the surprise effect one gets and this will be enough to get an otherwise uncooperative baby to open his eyes widely and look at you for at least few seconds. At that time, the presence of nystagmus or any other major ocular anomaly of the cornea or the eye itself will become visible.

Finally, just before trying to evaluate the clarity of the optical media of the eye with the direct ophthalmoscope, it is worthwhile spending few seconds trying to evaluate the child's ability to see. This can give invaluable information for example in an infant who shows difficulty to feed, difficulty with temperature control, and a generally poor tonus. Indeed a newborn with bilateral severe *optic nerve hypoplasia* and poor vision can often present those general symptoms. This is due to the frequent association of bilateral optic nerve hypoplasia with growth and thyroid hormone deficiency. To evaluate an infant's vision, one simply has to use a favorite target: the human face. By holding the infant on ones lap and at a comfortable 45° angle with the head gently supported, the infant who is facing the examiner will turn both eyes and head toward his face as it is passed from left to right in front of the baby. Obviously, this will be impossible if the infant cries or is asleep, but if done just between the first and the second half of a feeding for example, this is likely to give good results in almost 90 percent of seeing infants.

Finally, one can easily evaluate the transparency of the cornea, the lens and the vitreous, all at once by simply using a direct ophthalmoscope. Placed in the usual manner near the examiner's eye but at about 5 inches away from the infant's eye, and with the +6 lens set in, the ophthalmoscope helps to verify the presence of a nice bright red/orange reflex in both eyes. If anything else is seen, it is abnormal. Also, if there is a difference between the two reflexes, an abnormality should be strongly suspected.

CONCLUSION

An exaustive list of all possible congenital ocular anomalies is well beyond the scope of this communication, but I hope it will have made you realize that the *early* detection of congenital ocular anomalies is of paramount importance and that the examination technique necessary to make

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The Future of Pediatric Practice

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These are changing times in the practice of pediatrics in the United States. As the French poet Paul Valéry once wrote, "The future is not what it used to be". Children are physically healthier today than they were previously, except in low income families in which a number of childhood disorders are over-represented on a population basis. The problems of pediatric patients are more likely now to be developmental, psychosocial or educational in character than infectious or nutritional. Chronic disease is also belatedly gaining a more prominent place in pediatric care.

The family in the United States has also changed, perhaps more rapidly than we wish to acknowledge. Most mothers of young children have joined fathers in working outside the home. The one-parent family, divorce, separation, remarriage, the aggregate family and increased mobility are now commonplace. Patients come from more diverse ethnic and cultural backgrounds than they did just a few years ago.

Pediatricians are practising more often in single or multi-specialty groups, in smaller communities and as members of HMO, PPO and IPA organizations. Many now include prenatal interviews and adolescent care in their practices. More recent graduates of pediatric residency training programs are better prepared than their predecessors in the psychosocial and developmental aspects of pediatrics, and many pediatricians have developed or wish to practise areas of special interest. In terms of health care generally, there is a high public interest in health promotion and disease prevention, and a significant amount of the care given traditionally in the hospital is being shifted to ambulatory, day hospital and home care settings.

NEW DIRECTIONS

Pediatrics arose in the United States primarily in response to infant nutritional disorders and acute infectious diseases. The model of pediatric office practice fashioned to meet those needs, while appropriate for the times, has gradually outlived its usefulness, especially in relation to behavior and development. Its heavy biomedical and disease orientation, episodicity of care, prescriptive advice-giving and attention limited primarily to infants and young children, rather than including older children and adolescents, is less congruent with society's present needs.

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A considerable lag has existed between what is known and applied in the developmental and psychosocial domains of pediatrics. That there has been a general lack of adequate reimbursement for cognitive services, contributed to this anachronism but there are other reasons. Up to the time of the publication of the Task Force on Pediatric Education report in 1978, and changes in the Special Requirements of the Residency Review Committee, many pediatric educators in the United States looked somewhat askance at ambulatory care, general pediatrics, psychosocial and developmental issues, learning problems, chronic disease, developmental disabilities, school health and health supervision. Although this educational deficit is on its way to being corrected, pediatric practitioners, trained before the new pediatric curricula, cannot easily change to a style and content of practice for which they were inadequately prepared.

PLANNING A NEW FUTURE

The present challenge is to fashion and institutionalize new models of pediatric care that promote attention to the developmental and behavioral aspects of child health across a broad array of preventive, diagnostic, therapeutic, habilitative and supportive services.

Recognizing that it has been helpful in the past to define the levels of medical care as primary, secondary and tertiary, it would seem helpful for general pediatrics to be subdivided also into three levels as defined by the following characteristics: 1) the length of time and the number of visits required for the specific service; 2) the level of training, experience and competence required to provide that care; 3) the complexity of the problem; 4) whether the pediatrician works alone or with others in a team fashion; 5) the setting of the service; and, 6) the specific needs of the population served.

LEVEL I CARE

Level I general ambulatory care, defined as that delivered in the office by the general pediatric physician and the pediatric nurse, encompasses health supervision, including visits for patients with chronic handicap or disease, and management of acute illness episodes or trauma. These services generally require 20-30 minutes, although some follow-up illness visits and telephone advice require much less. All general pediatricians provide some Level I care.

The committee on the Psychosocial Aspects of Child and Family Health of the American Academy of Pediatrics has just published the first of two sections of a manual

entitled *Guidelines for Health Supervision*. This publication contains guidelines for 22 health supervision visits from the prenatal period through age 21. The goal of these packages is to integrate into each visit the following functions of health supervision: 1) the assessment of the psychosocial status of the child, his family and his environment; 2) the physical assessment of the child; 3) a developmental assessment; 4) anticipatory adaptation; 5) an assessment of the adaptation of the child and his parents to developmental and life changes; 6) parent education and support; 7) promotion of positive parent-child interactions; 8) enhancement of family communication; and 9) early intervention for biomedical, developmental or psychosocial problems.

LEVEL II CARE

Level II general pediatric care would be that given by pediatricians who include areas of special interest in their practices. These may be either biomedical (e.g. allergy or gastroenterology) or psychosocial (e.g. child development, behavior, developmental disabilities, learning problems or adolescent health). Level II care would be provided: 1) by the pediatrician and pediatric nurse; 2) by a team consisting of a pediatrician, pediatric nurse, psychologist and/or social worker present part- or full-time in the physician's office; or 3) by collaboration with these and other professionals such as the child psychiatrist, the special educator, the occupational therapist, the physical therapist, the audiologist, the nutritionist, the speech pathologist or the vocational counselor utilizing a network of office, agency, school or hospital settings.

The percentage of time spent by pediatric practitioners in Level I or Level II care would vary with the individual physician's special competencies, the needs of the patient, and the practice settings. I believe that in the future pediatricians will devote additional time to Level II care, especially those practitioners who work in group practices or who wish to provide counseling in relation to family crises such as death, separation or divorce; care for children with long-term illness or disability; and attend to developmental problems, learning dysfunction, and behavioral symptoms, including those that have both a biomedical and a psychosocial etiology, e.g., failure to thrive, hyperactivity, chronic headaches, recurrent abdominal pain and chest pain.

General pediatric practice seems destined to become much more diverse than in the past, owing both to the multiple new ways in which it is being organized and to the growth of Level II general pediatrics. Most practitioners, according to a 1978 survey sponsored by the American Academy of Pediatrics, would like to see patients with more complex problems.

LEVEL III CARE

Level III pediatrics is conceptualized in three subcategories. Level III-A care would be given by the pediatrician who has completed a fellowship in an area such as developmental disabilities, general pediatrics, adolescent medicine, school health, sports medicine, child abuse, chronic illness, child psychiatry, behavioral pediatrics or ambulatory care; level III-B pediatrics, largely concerned with research, would be the province of general pediatricians with doctorate degrees or equivalent training in one of the behavioral, social or biologic sciences; and level III-C care would be delivered by a consultant or master general pediatric clinician.

In addition to working in academic settings, some Level III-A and III-C general pediatric practitioners would practise part- or full-time in community or regional diagnostic and treatment centers, in large group practices and, occasionally, in individual offices along with part-time professional associates. Level III-B pediatricians would have a major commitment to research but would also have some patient care responsibilities. To pursue the clinically relevant but highly complex lines of psychobiological investigation, and to extend the data base in the psychobiologic aspects of child health, such Level III-B general pediatric investigators must be developed to provide new answers to old questions and to address questions not yet posed.

The Level III-C or consultant general pediatrician is currently threatened by extinction. In part, the decline in the number of such encyclopedic pediatricians in academic settings was probably foreordained by their heavy investment in patient care and teaching at the expense of adequately recording their naturalistic observations and identifying the heuristic value of their experiences for research. I would visualize the Level III-C or consultant general pediatrician as being competent in several areas of general pediatrics such as child development, chronic disease or handicap, behavior, adolescent health, school problems and the like. In the absence of an identified academic job market in the past decade or two such general consultants are not being trained today. Because of new market forces, however, they may once again become viable in academic and other health settings.

PEDIATRICS AND ADAPTATION

Pediatrics, long defined as the specialty concerned with growth and development, must increasingly be concerned with *adaptation*. It has always been the daily business of the pediatrician to enhance a child's capacity to adapt to a variety of biologic stressors. The administration of antibiotics to an infant with bacteremia helps the baby adapt successfully to and overcome a potent threat to his life. Measles immunization offers a prospective adaptation to a potentially deleterious stressor. Insulin contributes to a child's adaptation to the physiologic derangements caused by juvenile diabetes. These biomedical interventions, now well institutionalized in the practice of pediatrics, are of high social value. We now have the opportunity to help children and their parents adapt to a variety of psychosocial stressors.

That biologic, developmental, psychologic and social

factors are inseparably intertwined in child health and illness has long been recognized. Over thirty years ago Alan Gregg emphasized that: "No part can be changed without changing in some way and in some measure all the others...It is intellectual weakness that prompts us to ascribe a given result to only one sufficient cause. We ignore the value of suspecting that a result may be due to a convergence of several causes..."

Recent advances in psychobiology have greatly contributed to our understanding of how psychologic states associated with life experiences and stresses are translated in the brain to produce physiologic changes and how biologic changes or disease processes in the body may be transduced through endocrine and neurotransmitter channels in the brain to produce psychologic effects.

The Institute of Medicine Report on *Stress and Human Health* concluded, as have many other studies, that persons who experience emotionally disruptive situations are at increased risk of developing a physical or a mental disorder. In many patients, who are brought to the pediatrician with a variety of behavioral and somatic complaints, an antecedent stressful event or a cluster of such events can be identified. Such stressors include the death of a significant person; divorce, desertion, separation or remarriage; a family move; family discord and violence; hospitalization and surgery; illness and trauma; natural disasters, e.g. floods, fires, tornados, hurricanes; transfer to a new school; parental emotional illness, e.g. depression, anxiety, substance abuse, psychosis; parental life-threatening illness, e.g. cancer, coronary artery disease; sibling with a handicap; parental unemployment; physical or sexual abuse; and placement outside the family.

Parents who experience deleterious events are also at special risk if such stresses compromise their caretaking abilities. In the perinatal period, for example, stressful events may include the birth of an infant with a congenital anomaly, a critical neonatal illness, stillbirth, neonatal death, a mother returning to work outside of the home, illness in other family members, multiple births, and maternal depression. Pediatricians have the opportunity to help children and their parents adapt as constructively as possible to these crucial life events and psychosocial stressors.

In addition to helping children and parents master unexpected contingencies, we need to enlarge our preventive repertoires. Advances in psychobiology may in the future permit the pediatrician to use biologic and psychologic markers to identify children and adults at risk. Coupled with an awareness of high risk situations, e.g. bereavement, the clinician may be able to help vulnerable individuals avoid or modify behavioral patterns or habits that may be health-damaging. Another major task for the pediatrician of the future, perhaps in concert with educators, will be to help children with the adaptive skills that will help them cope successfully with the biologic and psychosocial stressors that they confront. Pediatrics will then become the specialty of *adaptation* as well as *growth* and *development*. □

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Psychiatric Services in Nova Scotia

FROM THE RESEARCH AND STATISTICS DEPARTMENT
MARITIME MEDICAL CARE INC.

INTRODUCTION

Psychiatric services have been increasing rapidly during the past several years, both in Nova Scotia and in other Canadian provinces. As part of an ongoing effort to monitor and understand trends in the provision of medical treatment, early in 1984 Maritime Medical Care's Medical Review Committee appointed an advisory committee of psychiatrists and general practitioners to study the growth of psychiatric services in Nova Scotia. The committee was assisted by Maritime Medical Care's Research & Statistics Department, which prepared an extensive study of trends in psychiatric services insured by M.S.I. Highlights of that study are outlined in this article.

Trends in the Number of Psychiatric Services Provided

Psychiatric services in Nova Scotia are provided either by private practitioners on a fee-for-service basis or by psychiatrists employed on a salaried basis at psychiatric hospitals or regional mental health centres. During fiscal 1982-1983* M.S.I. paid $3.7 million to psychiatrists practising on a fee-for-service basis, and reimbursed $2.2 million in salary payments to psychiatrists. In addition, fee-for-service payments to general practitioners for psychiatric services amounted to another $2.3 million.

Data in the study concentrated on fee-for-service payments.It should be remembered, however, that in the case of services by psychiatrists, non fee-for-service practice accounts for almost 40% of M.S.I. expenditure.

The number of psychiatrists who received fee-for-service payments increased from 45 to 70 during the ten years from 1972-73 to 1982-83. These numbers include both psychiatrists who practise primarily in a fee-for-service capacity, and salaried psychiatrists who also do fee-for-service work. In contrast to the 55.6 percent increase in psychiatrists, the number of services per capita by psychiatrists increased by only 22%. When broken down by type of service, however, psychotherapy by psychiatrists increased by 88% during the ten year period, while other services decreased by 24%.

During the same ten year period the number of general practitioners engaged in fee-for-service practice increased by 40.5 percent. General practitioners services per capita increased proportionately, by 40.8 percent. Psychiatric services by general practitioners increased much more rapidly, however, with an increase in services per capita of over 290 percent.

*Fiscal years run from April 1 to March 31.

On an annual basis, the largest increase for general practitioners was 50% in fiscal 1974-75. During April 1973 and January 1974, there were large increases in fees for general practitioner psychotherapy, with the result that in January 1974 the general practitioner fee was double the fee in March 1973. This large increase appears to have been a factor in the greater utilization of this service in 1974-75.

When compared with other provinces, Nova Scotia ranks eighth in services per capita by psychiatrists, and sixth in psychiatric services per capita by general practitioners. Nova Scotia rates of increase were higher than average in the case of general practitioners and lower than average for psychiatrists during the period from 1972-73. □

Substitution of General Practitioners for Psychiatrists

Nova Scotia is considered to have a shortage of psychiatrists, and it was therefore essential to determine if psychiatric services by general practitioners were acting as a substitute for services that might otherwise be performed by psychiatrists. This did not appear to be the case, however, as data by county showed a strong correlation between services by general practitioners and services by psychiatrists. Approximately 52% of all psychiatric treatment by general practitioners was provided to residents of Halifax County (which has 33% of the provincial population). These facts suggest that the prevalence of psychotherapy by general practitioners may be influenced more by the amount of time available, and by the treatment preferences of physicians, than by the availability of psychiatrists.

Patients Seen and Hours of Care Per Patient

During fiscal 1981-82 psychiatrists saw 12,200 patients on a fee-for-service basis, while general practitioners provided psychiatric care to 32,100 patients. Of the 32,100 patients seen by general practitioners, 3,800 were also treated by psychiatrists. On average, psychiatrists' patients received four hours of treatment during the year, while general practitioners' patients received 1.2 hours of psychiatric care. Only 21% of general practitioners' patients received 1.2 hours or more of care, in contrast to 65% of psychiatrists' patients.

These data clearly suggest that general practitioners are not normally engaging in protracted periods of psychiatric treatment, and that the psychiatric treatment provided by them may be more in the nature of counselling or short term therapy.

General Practice Psychotherapy and Years Since Graduation

Over 80% of general practitioners who graduated from medical school during the last 15 years received M.S.I. payments for psychiatric services. This percentage declined as the number of years in practice increased, and reached a low of 35% for general practitioners in practice forty years or more. While overall, psychiatric services accounted for 3.2% of general practitioners' payments, they represented 4.1% of payments to general practitioners in practice ten years or less. These differences by year of graduation are consistent with the theory that younger general practitioners have received more training in psychotherapy in medical school and would be more likely to provide this service than physicians who had not received the same degree of psychiatric training.

By area of graduation, 78% of Canadian trained general practitioners performed psychiatric services compared with 58% of general practitioners trained in Europe and 49% of those trained in Asia. It is likely that the data of place of graduation would be strongly influenced by trends in years since graduation, however, since the immigration of foreign physicians has been restricted during the last ten years.

Psychotherapy and Psychiatric Diagnoses

Claims to M.S.I. for psychotherapy would normally show a diagnosis within the International Classification of Diseases chapter of Mental Disorders (I.C.D.A. codes 290 - 319). Diagnoses of mental disorders has not paralleled the trend in expenditure for psychotherapy.

During the seven years from 1975 to 1982, per capita expenditure for psychotherapy increased by 59% on a constant dollar basis. (Constant dollar expenditure was calculated by dividing amounts paid by an index of fee increases over the seven year period — in the case of psychotherapy, the index was 265 for psychiatrists and 192 for general practitioners.)

Total per capita fee-for-service expenditure for mental disorders increased by 28% over the seven year period, while expenditure for all insured services increased by 22%, on a constant dollar basis. There was a noticeable shift in physicians' identification of the services rendered where the diagnosis was one of mental disorder. While psychotherapy increased quite dramatically, as noted above, constant dollar per capita expenditure for other types of service declined slightly. As a result psychotherapy increased from 40% of total expenditure for mental disorders in 1975 to 52% in 1982.

Changes in Psychiatric Diagnoses

While total expenditure per capita for mental disorders increased by 28% on a constant dollar basis from 1975 to 1982, there were considerable differences in the rates of change for specific diagnostic categories. For example, expenditure for the categories of neuroses and alcohol or drug dependence declined (by 16% and 30% respectively), while expenditure for functional psychosis increased (by 36%). Other, less specific, diagnostic categories showed a combined increase of 110%. Whether this reflects a real change in the type of condition for which psychiatric treatment is required or a tendency of physicians to be less specific in diagnoses for psychotherapy, cannot be inferred from the M.S.I. data. There were also interesting differences by sex, with rates of increase for males exceeding those of females by over one-third. Despite the greater increase in expenditure for males during the seven year period, per capita expenditure for females was almost double that for males during 1982.

Changes in Treatment by Patient's Age

While utilization of medical services in general tends to increase in direct proportion to age, expenditure for mental disorders peaks during middle age, and declines after age forty-five. Over the seven years from 1975 to 1982, however, constant dollar expenditure for persons under age 34 showed little or no change. For age groups 35-44 and 45-64 per capita expenditure increased by 29% and 34% respectively. The greatest change occured in the 65 and over age groups, where per capita expenditure increased by 73% on a constant dollar basis. This rate of increase was more than double the rate of increase in the utilization of all physicians services by persons in that age group. □

Five Years Experience with Pheochromocytoma

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INTRODUCTION

Pheochromocytoma is one of the most fascinating of all tumors. Clinical presentation is varied, making diagnosis difficult. Management of these patients through the diagnostic evaluation and surgical procedure can be very challenging. This paper reviews the experience gained at the Camp Hill Hospital Hypertension Unit in identifying and managing patients with pheochromocytoma from 1979-1983.

INCIDENCE

The Hypertension Unit at Dalhousie University began enrolling patients in January 1979 and to December 1983, 1,330 new hypertensive patients were assessed. From this group, six patients proved to have a pheochromocytoma, an incidence of approximately 5 in 1,000 hypertensives. During this period, two other cases of pheochromocytoma were identified in the Halifax area but investigation and surgery were not carried out in the Hypertension Unit. An incidence of 5 in 1,000 is higher than that reported elsewhere. For example, Manger and Clifford report an incidence of 1 in 1,000 of all patients with diastolic hypertension.[1] However, the incidence is in keeping with reports from other Hypertension Units which range from 6.4-7 in 1,000 hypertensives.[2] This reflects the degree of selection for patients referred to such specialized units. There were an equal number of men and women, confirming previous studies which demonstrated no sexual preponderance. Our patients were relatively young (average age 37 years), although the tumor can present at any age.

PRESENTATION

Table I summarizes some demographic data on our patients. Two patients presented with fixed hypertension, two with labile hypertension and two with normal blood pressure. Three (cases 1, 4, and 5) presented with relatively classical symptoms of pheochromocytoma, including headaches, palpitations, and hyperhidrosis. Only one patient, case 4, complained of weight loss, possibly related to increased metabolic rate. Two patients cases 5 and 6 experienced deterioration of blood pressure control on beta-blocker drugs, possibly related to unopposed alpha-adrenergic sympathetic stimulation. Patient 2 was suspected, despite an absence of hypertension, because of the recognized relationship between neurofibromatosis and pheochromocytoma and the symptoms suggestive of paroxysmal hypertension.

TABLE I

DIAGNOSTIC CATECHOLAMINE LEVELS AND REQUIRED DAILY DOSES OF CATECHOLAMINE-BLOCKING DRUGS

	24 hour urine		Plasma		Pre-op Management	
Case	VMA	free catecholamines	Adrenaline* (pg/ml)	Noradrenaline* (pg/ml)	Phenoxybenzamine	Propranolol
Normal values	1.8-8.0 mg < 45 µmol	0-546 nmol	supine < 80 standing < 80	supine 268 ± 82 standing 393 ± 40		
1	20-25 mg	1,125	ND**	ND	60 mg	80 mg
2	95 µmol	1,375	supine < 80 standing < 80	supine 162 standing 448	140 mg	60 mg
3	29-77 µmol	ND	ND	ND	30 mg	160 mg
4	17.5 mg	ND	ND	ND	70 mg	metoprolol 100 mg
5	139-358 µ mol	12,607-17,600	ND	ND	60 mg	—
6	245-332 µ mol	1,865-3,293	ND	ND	120 mg	240 mg

*plasma adrenaline and noradrenaline are performed supine and standing

**ND — not done

In the presence of classical features, i.e. hypertension, headache, hyperhidrosis and palpitations, the diagnosis should always be suspected. However, during the five year interval reported here, other patients presenting with so-called "classical symptoms" or elevated catecholamines were not found to have a pheochromocytoma.

LABORATORY DIAGNOSIS

An elevated serum glucose can be helpful in suggesting the diagnosis. Adrenaline is known to elevate blood sugar in several ways: by activating hepatic glycogen phosphorylase, inhibiting the secretion of insulin, decreasing peripheral glucose uptake and by promoting gluconeogenesis.[4] In the three patients with abnormal

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serum glucose levels, there was a return to normal levels, following surgery.

Urine tests are used most often for screening. Urinary vanillyl mandelic acid (VMA) was elevated in 5/6 of these patients. Similarly, urinary catecholamines were elevated in 4/5 patients tested. The Cleveland Clinic group suggests that plasma catecholamines are a more useful method of screening for pheochromocytoma.[5] But this method has become available only recently in the Halifax area. It is the experience of many other centres, however, that either urine VMA or catecholamine levels are increased in most cases with the tumour. The normal plasma catecholamine results in case 2 (Table II) suggest that in this case the urinary studies were more useful. If the diagnosis is difficult to establish but the level of clinical suspicion is high, both urinary and plasma tests should be employed. Platelet catecholamine content may be helpful in establishing the diagnosis of pheochromocytoma in patients with suggestive but not diagnostic elevations of plasma catecholamines.[6] However, the test is not available in Halifax.

TABLE II

CHARACTERISTICS OF SIX PATIENTS WITH PHEOCHROMOCYTOMA

Male:Female	3:3
Average Age (yrs)	37
Age Range	21-51
Mode of Presentation:	
Hypertension	4/6
Neurofibromatosis	1/6
Lab Data:	
Elevated Serum Glucose	3/6
Increased Urinary VMA	5/6
Increased Urinary free Catecholamines	4/5
Pathology:	
Involved Adrenal R:L	5:1
Pheochromocytoma	6/6
Vascular Infiltration	1/6

Since the introduction of urine and plasma catecholamine assays, potentially dangerous provocative tests are rarely necessary in the diagnostic evaluation of pheochromocytoma. However, suppression tests have proved useful in the five to ten per cent of patients with essential hypertension who have borderline elevations of plasma or urinary catecholamines. Oral clonidine (Catapres®) has been helpful in making this diagnostic distinction when used according to the method of Bravo *et al.*[7] Brown *et al.* have described a pentolinium suppression test,[8] but neither this test nor the clonidine test were used in these six patients. We are currently evaluating the clonidine test in cases of suspected pheochromocytoma. Both tests are based on the principle that the drug will normally suppress plasma catecholamine levels but not in pheochromocytoma.

Preoperative localization of the tumor in our cases was accomplished relatively easily using abdominal CT scanning and angiography (Figures 1 and 2). Patients all required treatment with an alpha-adrenergic blocking agent (usually phenoxybenzamine) prior to these procedures in order to protect against a sudden outpouring of catecholamines. Abdominal ultrasound also proved to be a useful non-invasive technique for localization of the tumor, although tumor size tended to be underestimated (cases 4, 5 and 6). Fortunately, all tumors reported here were localized in one of the adrenal glands. When a tumor is not easily identified in the adrenal, serial plasma catecholamine sampling along the inferior vena cava may be necessary to localize tumors along the sympathetic chain.[9]

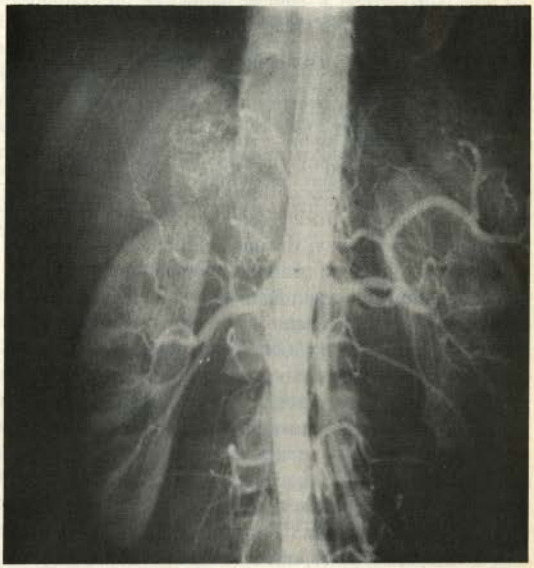

Fig. 1. Arteriography in Case I. A vascular tumour ispresent in the right adrenal area. The renal arteries are normal.

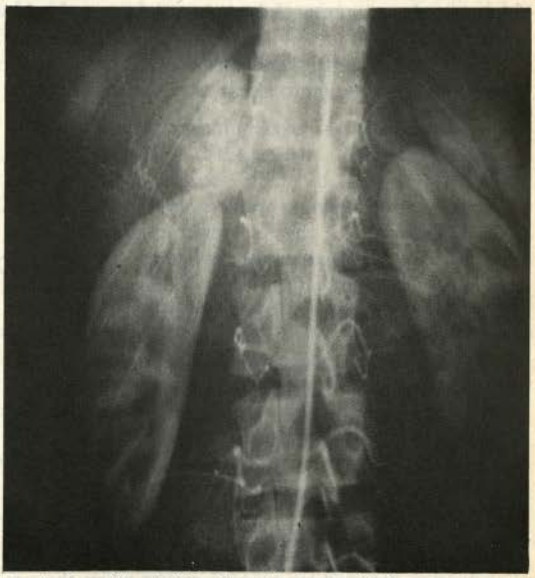

Fig. 2. Later film in Case I showing tumour blush.

The majority of pheochromocytomas (90%) are found in the adrenal glands, although twice as many tumors are reported on the right than on the left.[1] Extra adrenal sites in order of decreasing frequency include the abdominal sympathetic ganglia, the organ of Zukerkandl, the bladder and the thoracic sympathetic ganglia. Our patients' tumors showed a distinct preponderance for the right adrenal. The only patient presenting with a left adrenal tumor was case 2 who also had von Recklinghausen's Disease. Other authors have reported that patients with von Recklinghausen's Disease have a higher incidence of left-sided or bilateral tumors.[1]

INTRAOPERATIVE MANAGEMENT

Despite what was felt to be satisfactory preoperative preparation of our patients with the alpha-adrenergic blocking agent, phenoxybenzamine, and the beta-adrenergic blocking agent, propranolol, four of the patients (cases 1, 3, 4 and 6) developed intraoperative hypertension requiring the use of the alpha-adrenergic blocking drug, phentolamine, during surgery. One patient (case 6) developed hypertension during anesthetic induction severe enough to require cancellation of the surgical procedure. Despite very large doses of intravenous phenoxybenzamine, he still became hypertensive during tumor manipulation. The catecholamine content of some tumors can be released into the circulation during surgery resulting in profound cardiovascular effects, unless the patient's alpha and beta-receptors are adequately blocked. A recent paper advocated the use of prazosin as the preoperative alpha-adrenergic blocking agent, but it should be noted that all of those patients required intraoperative intravenous phentolamine.[10] Propranolol being a beta-1 and beta-2 receptor blocker, allows a further undesirable increase in peripheral resistance in pheochromocytoma so that a predominantly cardio-selective beta-adrenergic blocker such as metoprolol or atenolol is preferable preoperatively. Metoprolol was used in case 4. The dose of adrenergic blocking drugs will vary between patients and careful individualization is necessary in preparing the patient for surgery.

PATHOLOGY

The pheochromocytoma has been described as, "histologically benign.... physiologically malignant".[1] All cases reported here had tissue confirmation of a tumor containing chromaffin cells, with no evidence of malignant change. However, one patient (case 5) did have microvascular invasion suggesting extension outside the tumor capsule. To date, none of these patients have demonstrated return of the original symptoms or, where measured, abnormal urinary catecholamines, over follow-up intervals ranging from 2-5 years.

Case 1

A 21-year-old female presented with a history of labile hypertension detected six months earlier when she presented to her family doctor with a severe occipital headache. She had noted palpitations and excessive sweating. At that time, she had been taking an oral contraceptive, but discontinuation made no difference to blood pressure control. Two previous pregnancies had been associated with hypertension. Her mother also had a history of hypertension and toxemia of pregnancy. Medications on presentation included hydrochlorothiazide, 100 mg and metoprolol, 100 mg daily. Physical examination: pulse 75/min, blood pressure was variable: 210/110 supine, 164/110 standing and 110/80 after exercise, with no other clues to a pheochromocytoma.

Urinary VMA and catecholamine levels were elevated (see Table II), and angiography demonstrated a vascular lesion in the right adrenal gland (Fig. 1, 2). After treatment with phenoxybenzamine and propranolol, a right adrenal mass (2×1.5 cm) was identified at surgery and removed. One intraoperative episode of hypertension and tachycardia was controlled with intravenous phentolamine. Pathological assessment of the tumor revealed a pheochromocytoma. No anti-hypertensive medications were required post-operatively, and the patient has remained normotensive.

Case 2

A 28-year-old male with a known history of neurofibromatosis (von Recklinghausen's Disease) was sent for evaluation because of a four-year history of attacks of pallor, palpitations and headaches precipitated by bending over and occasionally occurring during sleep. He felt fatigued and irritable much of the time. His father was hypertensive and had neurofibromatosis as did one sister and one child, but both had normal blood pressure. The patient's brother and another child had café-au-lait skin markings but no evidence of neurofibromatosis. The patient was on no medication. Physical examination: there were numerous café-au-laid spots on the trunk with palpable neuromas on the scalp, back, right arm and both legs. Pulse rate at rest was 68/min and blood pressure in the right arm supine was 120/70. No abdominal masses were palpable, but palpation of the abdomen produced a mild attack of his presenting symptoms; pulse rate rose to 88 and blood pressure to 155/90. Symptoms and physical findings returned to normal in two minutes.

Urinary VMA and catecholamine levels were elevated, but a single supine and standing plasma adrenaline and noradrenaline were not (Table II). An abdominal CT scan demonstrated a solid, left adrenal mass and a small, subcutaneous nodule posterior to the left iliac crest. Abdominal angiography indicated a vascular tumor mass in the left adrenal, about 4 cm in diameter. After preoperative preparation with phenoxybenzamine and propranolol, surgery was performed. A transient episode of mild hypotension occurred after resection of the tumor. Postoperative course was complicated by an episode of left lower lobe pneumonia. Pathological examination of the tumor confirmed a pheochromocytoma.

Case 3

A 51-year-old female presented with a three-year history of "attacks" consisting of aching legs, pallor, fullness in the head, nausea and a "hot" sensation in the abdomen. In the beginning these were blamed on the menopause. Elevated blood pressure was never documented during an attack. Many episodes were precipitated by straining during a bowel movement. There was no family history of hypertension or endocrine disease. Physical findings: blood pressure was 155/80 sitting with no postural fall, pulse rate 90/min. There were no other abnormal findings.

Urinary VMA levels were elevated on two out of three occasions (Table II). An abdominal CT scan revealed a 7 cm mass in the right adrenal which was confirmed on angiography. The patient's blood pressure remained normal during her hospital stay. Pre-operative preparation is outlined in Table II. The operative course was characterized by several episodes of severe hypertension requiring additional intravenous phentolamine. Post-operatively, the patient developed pneumonia, but removal of the pheochromocytoma relieved the symptoms and no episodes of hypertension were recorded.

Case 4

A 48-year-old male presented with a 5-6 year history of recurrent muscle weakness, a four-month history of headaches accompanied by sweating, palpitations and a weight loss of 8 kg. Two months previously, he was noted to be hypertensive and was started on a diuretic. Physical examination revealed mild hypertensive changes in his fundi. Supine blood pressure was 164/100 and 186/100 after exercise. No abdominal masses were palpable.

Investigations revealed a persistently elevated blood sugar and elevated urinary VMA (see Table II). Abdominal ultrasound demonstrated a large cystic mass in the right adrenal and angiography confirmed a 7×5 cm mass in the right adrenal. After appropriate medical preparation, the tumor was resected surgically and confirmed pathologically to be a pheochromocytoma. Perioperative course was complicated by intraoperative hypertension managed with intravenous phentolamine. Post-operative hypertension persisted but urine VMA levels were normal.

Case 5

A 28-year-old female presented with a four-month history of occipital headaches, flushing, heat intolerance, dizziness, visual scotomas, sweating and hypertension. Treatment with the beta-blocker timolol (Blocadren®) resulted in increased blood pressure readings as well as nausea and vomiting. Clonidine (Catapres®) produced partial blood pressure control, but she presented with a blood pressure of 260/160 supine and pulse rate of 130.

Laboratory data revealed a markedly elevated blood sugar. A renal scan was normal but ultrasound revealed a right adrenal mass about 3.5 cm in diameter. Urinary VMA and catecholamines were markedly elevated (see Table II) and after adrenergic blockade, an arteriogram and subsequent surgery confirmed a 5×2.5 cm right adrenal lesion. Pathological evaluation demonstrated vascular invasion by tumor cells. Subsequent follow-up for two years showed blood pressures that were persistently normal.

Case 6

A 43-year-old male presented with an 18-hour history of burning epigastric pain, nausea, vomiting, dizziness resulting in a fall followed by loss of consciousness. On evaluation, he was noted to have a tachycardia with an initial blood pressure recording of 94/50 followed 20 minutes later by a reading of 170/70 with profuse diaphoresis. He was found to have a past history of lumbar disc disease, cervical spine degeneration requiring neurological consultation, migraine headaches and a peptic ulcer. A three-month history of hypertension treated with metoprolol, 50 mg bid. Physical examination revealed a very anxious, diaphoretic male with a pulse rate of 100 and very labile blood pressures.

Serum glucose was persistently elevated (two hour pc readings ranged from 13 to 24 mmol/l). Urinary VMA and catecholamines were markedly elevated (see Table II). An abdominal ultrasound showed a right adrenal mass approximately 9 cm in diameter. The arteriogram suggested the diameter of the right adrenal mass to be 15 cm with multiple areas of necrosis. Despite ten days of preparation with phenoxybenzamine and propranolol, the first attempt to induce anesthesia resulted in a hypertensive crisis. The patient continued on oral phenoxybenzamine and propranolol and received three days of intravenous phenoxybenzamine by continuous infusion. Anesthesia induction proceeded uneventfully but manipulation of the tumor resulted in further hypertensive episodes requiring intra-operative intravenous phentolamine. The tumor was found to be 20 cm in diameter, extending medially over the inferior vena cava. Histologically, the tumor was a pheochromocytoma.

Postoperatively, serum glucose and blood pressure returned to normal, and the patient's course was complicated only by an episode of chondrocalcinosis involving the right knee.

CONCLUSION

Six cases of pheochromocytoma managed by the attending staff of the Hypertension Unit from 1979-1983 have been reviewed in detail. Although a very uncommon entity, this tumor represents a surgically correctable cause of hypertension and should be considered in any patient with the classical symptoms of hypertension, palpitations, hyperhidrosis and headache. However, patients with severe or paroxysmal hypertension, paradoxical responses to antihypertensive drugs, hyperglycemia or those whose initial presentation is that of a related disease (neurofibromatosis, medullary thyroid carcinoma, etc.) should also be screened for this tumor. Urine VMA and free catechola-

mines, plasma adrenaline/noradrenaline, CT scanning of the adrenal area and abdomen sometimes followed by arteriography are the investigative steps. □

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The Royal College of Physicians and Surgeons of Canada

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Founded in 1929 by an Act of the Canadian Parliament, The Royal College of Physicians and Surgeons of Canada (hereinafter — the College) is a national body that develops standards for medical, laboratory and surgical specialties, accredits specialty training programs and conducts examination for certificates of qualification (Specialty Certificates and Certificates of Special Competence).

Originally the College headquarters was in Toronto but, since 1930, College headquarters has been in Ottawa. Since 1960 the College has occupied its own building at 74 Stanley Avenue, an attractive site on the banks of the Rideau River near Sussex Drive and close to Ottawa's City Hall.

Initially two specialty qualifications were offered — Fellowship in General Medicine and Fellowship in General Surgery. In 1937 at the request of the Canadian Medical Association, the College offered specialty qualifications in seven additional specialties: dermatology, ophthalmology, otolaryngology, pediatrics, diagnostic radiology, therapeutic radiology and urology. Subsequently additional specialty qualifications have been added; the 41 specialty qualifications offered by the College in 1985 in medical, laboratory and surgical specialties are listed in Table I. Additional specialty qualifications will probably be added to this list in the next few years.

From 1946 until 1972, examinations were conducted at two levels in most specialties, either for Fellowship or for Certification (Fellowship was the higher qualification). After 1972, the Fellowship examinations were discontinued and a single examination has been conducted for Certification or a Certificate of Special Competence in each specialty. Since 1972 Certificants have been able to apply for membership in the College as Fellows.

The first Certificate of Special Competence (in pediatric general surgery), based on prior Certification in a primary specialty (general surgery), was offered in 1975; subsequently additional Certificates of Special Competence have become available. By 1984, the College had issued more than 26,000 Specialty Certificates. In recent years somewhat more then 1,000 Specialty Certificates are granted each year. The successful candidates at the specialty examinations for the period 1974-84, who have been granted Specialty Certificates or Certificates of Special Competence are listed in Table II.

At present the College has grown to more than 21,000 Fellows of whom more than 18,000 reside in Canada. Most specialist physicians and surgeons in Canada are Fellows of the Canadian Royal College.

The College maintains up-to-date mailing addresses for Fellows of the College but not for Certificants. The patterns of practice of the Fellows and the Certificants are not known to the College. However, the College has started a joint project with the Canadian Medical Association so that the patterns of practice of specialists will be determined and recorded in the CMA's Physician Data Bank. This project will be undertaken in collaborations with more than forty national specialty societies.

Certificants of the College are recognized by provincial medical licensing authorities (except in the Province of Quebec) as specialists in the delivery of health care under the provincial medical care acts. In Quebec, the provincial medical licensing authority, the Corporation professionelle des médecins du Québec, issues specialty certificates. Many specialist physicians and surgeons in Quebec hold Certification from the Corporation and the Canadian Royal College.

The College is not a licensing authority, nor an educational institute, nor a professional medical association with primary responsibility for the welfare of its members. While its purposes are primarily those of certifying and accrediting specialists' training, it assumes in addition voluntary responsibility for the maintenance of competence of its members and more broadly is concerned with universities, with the provision of manpower for the secondary and tertiary levels of health care in Canada. Inevitably, although indirectly, it is concerned with the institutions in which health care is provided and the mechanisms of access to those institutions.

In carrying out its mandate, the Royal College cooperates with the 16 Canadian medical schools and many other national health organiziations, including the Canadian Medical Association, the Association of Canadian Medical Colleges, the Canadian Council for Hospital Accreditation, the Medical Council of Canada, the Federation of Provincial Medical Licensing Authorities of Canada, and more that 40 national specialty societies.

*Executive Director and Registrar, The Royal College of Physicians and Surgeons of Canada.

TABLE I

SPECIALTY QUALIFICATIONS OFFERED BY RCPSC (41)

DIVISION OF MEDICINE (29)

Clinical Specialties (23)		Laboratory Medicine Specialties (6)
Anesthesia	Internal Medicine	Anatomical Pathology
Cardiology*	Medical Oncology*X	General Pathology
Clinical Immunology and Allergy*	Nephrology*	Hematological Pathology
Community Medicine	Neurology	Medical Biochemistry
Dermatology	Nuclear Medicine	Medical Microbiology
Diagnostic Radiology	Pediatrics	Neuropathology
Emergency Medicine	Physical Medicine and Rehabilitation	
Endrocrinology and Metabolism*X	Psychiatry	
Gastroenterology*	Radiation Oncology	
Geriatric Medicine*	Respiratory Medicine*	
Hematology*	Rheumatology*	
Infectious Diseases*		

DIVISION OF SURGERY (12)

Cardiovascular and Thoracic Surgery	Otolaryngology
General Surgery	Pediatric General Surgery*
Neurosurgery	Plastic Surgery
Obstetrics and Gynecology	Thoracic Surgery*
Ophthalmology	Urology
Orthopedic Surgery	Vascular Surgery*

* Certificate of Special Competence

X First examinations in 1985

Since 1972 the expanded objectives of the College are:

1. To further the excellence of professional training and the standards of practice in the various medical and surgical specialties in Canada.
2. To contribute to the improvement of health care of Canadians through the provision of designations for specially trained physicians and surgeons whereby it may be known that they are properly qualified.
3. To maintain a high standard of professional ethics, conduct and practice among medical and surgical specialists.
4. To encourage, assist and promote continuing medical education.
5. To initiate, encourage, support and extend interest in research in medicine and medical education.
6. To encourage, assist and promote the study of quantitative and qualitative aspects of specialized health care in Canada.
7. To encourage, assist and have continuing concern with health matters.

Each year, more than 1,500 Fellows carry out the work of the College serving voluntarily on committees, examining boards and accreditation teams. They are supported by the full-time secretariat at College headquarters under the general supervision of the twenty-four member elected Council and the Executive Committee of the Council. Other Fellows participate in specialty training programs conducted by Canadian medical schools and accredited by the College, and in continuing medical education activities sponsored or organized by the College.

An outstanding event in the life of the College each year is the annual meeting, held in September in various Canadian cities. The 1985 annual meeting was held in Vancouver as a joint meeting with The Royal Australiasian College of Physicians and the Royal Australiasian College of Surgeons. Twenty-eight national specialty societies participated in the scientific program consisting of plenary session lectures, workshops, seminars and paper presentations.

Each year, the College publishes an annual report and reference handbook containing information about the dates and places of future annual meetings, publications of the College, awards available to Fellows, and information about accredited specialty training programs and the specialty examinations. Copies of the annual report are available in both official languages by writing to the Executive Director, RCPSC, 74 Stanley, Ottawa, Canada, K1M 1P4.

TABLE II

NUMBERS OF SUCCESSFUL CANDIDATES AT THE SPECIALTY EXAMINATIONS 1975-1984

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	10-YEAR TOTALS
DIVISION OF MEDICINE											
Clinical Specialties											
Anesthesia	60	50	50	63	62	70	82	92	91	100	720
Cardiology	20	32	27	35	29	30	40	37	38	44	332
Clinical Immunology and Allergy	5	2	4	5	X	3	5	5	9	4	42
* Community Medicine	—	4	1	5	8	15	16	18	16	22	105
Dermatology	17	13	21	20	22	20	12	18	19	15	177
Diagnostic	71	61	64	48	63	54	57	67	57	63	605
Emergency Medicine	—	—	—	—	—	—	—	—	59	48	107
Gastroenterology	9	13	21	16	11	13	13	9	14	11	130
Geriatric Medicine	—	—	—	—	—	—	5	6	7	6	24
Hematology	12	16	12	11	7	11	8	10	7	9	103
Infectious Diseases	—	—	—	—	—	—	—	—	13	8	21
Internal Medicine	184	200	208	182	189	188	154	179	193	213	1,890
Nephrology	—	—	—	—	—	—	—	—	22	8	30
Neurology	23	24	27	18	24	18	24	23	29	34	244
Nuclear Medicine	—	43	14	5	4	3	12	8	8	9	106
Pediatrics	70	83	79	77	77	74	81	97	89	93	820
Physical Medicine and Rehabiltation	5	5	4	8	14	9	12	13	10	12	92
Psychiatry	93	137	128	110	126	113	107	123	102	129	1,168
* Public Health	1	3	2	—	—	—	—	—	—	—	6
** Radiation Oncology	—	3	7	7	8	4	8	7	8	9	61
Respiratory Medicine	13	9	10	20	11	20	21	22	16	22	164
Rheumatology	5	10	10	9	10	15	15	15	15	12	116
** Therapeutic Radiology	4	X	—	—	—	—	—	—	—	—	4
Laboratory Specialties											
Anatomical Pathology	22	28	25	22	21	28	28	30	22	27	253
General Pathology	14	8	5	13	8	11	8	6	5	7	85
Hematological Pathology	3	6	3	2	4	1	3	4	3	6	35
Medical Biochemistry	3	5	2	4	3	5	2	4	7	X	35
Medical Microbiology	6	9	5	10	10	6	10	7	8	10	81
Neuropathology	2	X	1	2	1	5	2	2	1	1	17
DIVISION OF SURGERY											
Cardiovascular and Thoracic Surgery	15	12	14	13	12	10	11	16	16	18	137
General Surgery	94	89	89	79	85	85	71	59	64	60	775
Neurosurgery	8	6	8	5	5	12	7	11	14	13	89
Obstetrics and Gynecology	59	44	56	65	61	59	50	59	48	38	539
Ophthalmology	25	35	24	53	31	33	32	42	38	48	361
Orthopedic Surgery	47	35	45	38	49	31	38	34	36	50	403
Otolaryngology	18	27	20	23	25	20	21	14	17	18	203
Pediatric General Surgery	—	35	4	3	1	5	X	2	3	X	53
Plastic Surgery	14	15	17	15	14	19	18	18	15	20	165
Thoracic Surgery	—	—	—	—	16	2	8	2	3	4	35
Urology	25	20	22	22	20	15	16	23	20	17	200
Vascular Surgery	—	—	—	—	—	—	—	—	67	23	90
Grand Totals	947	1,082	1,029	1,008	1,031	1,007	997	1,082	1,209	1,231	10,623

—no examination
X no candidate
* name of specialty changed from Public Health to Community Medicine
** name of specialty changed from Therapeutic Radiology to Radiation Oncology

Current Topics in Community Health

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THE 20/80 RULE IN CLINICAL MEDICINE

Business managers have long recognized that 80% of their activities are tied up in doing 20% of their business. This is now becoming recognized in medicine and it is becoming possible to define the "high-cost" patients. This effort is leading to some surprising results.

"The elderly" are usually referred to as high users of health care. This is a distortion of the true picture. Instead, a small proportion of those over 65 account for a disproportionately large share of service utilization. For example, studies in Manitoba showed that nearly 50% of acute hospital days taken up by those 65 and over were consumed by only 3.1% of those 65 or greater.[1] This is also true for Medicare expenditure in the United States. There it was found that 23% of Medicare beneficiaries accounted for over 80% of Medicare expenditures in hospital.[2]

It is becoming important to define the high cost users in medical care. Some general conclusions can be made already. For instance, they are found more frequently in referral hospitals than in community hospitals. Frequently they have a chronic medical condition and they have a high in-hospital mortality rate. The prime determinant appears to be repeated hospitalizations for the same disease—not single cost-intensive or prolonged hospitalizations. Also these people are much more likely to have an unexpected complication of treatment (in the order of five times as likely).[3,4]

A number of studies have looked at readmission rates. In patients receiving Medicare, excluding dialysis patients, 22% are readmitted within 60 days of discharge. Another study from the United States revealed that 17% of patients treated on a medical ward required a non-elective admission within 90 days of discharge. This figure is very close to that found in the United Kingdom in those individuals 65 and over discharged from hospital.

In our own study at the Victoria General Hospital of those 75 years of age or greater, admitted by the Emergency Room to the Department of Medicine, we found that 25% had been in hospital within the previous 90 days. When these individuals are examined closely, it is found that the primary risk for readmission is a relapse or breakdown of the original problem. Other risk factors appear to be frequent emergency room visits, male sex, abnormal lab values on discharge (BUN, arterial oxygen content, white count, hemoglobin), and residing in a rural area.[2,5,6,7]

Adverse side effects occur frequently in patients treated on a General Medical Service. In one carefully done study, 36% had at least one adverse side effect during their stay in hospital. 9% suffered a major side effect in that it threatened their life or caused considerable disability. The adverse side effect was felt to contribute to death in 2% of admissions. The most frequent types of adverse side effects were difficulties with drugs used or with diagnostic/therapeutic procedures. These two made up over 75% of all adverse side effects. It is of interest though that the effect of pure age appeared to be secondary to other factors. When risk factors for developing iatrogenic disease were carefully examined, it was found that the important determinants were the source of admission (i.e. were they from an institution such as a nursing home) and the degree of "illness" noted on admission.[8]

In order to put a cap on the escalating cost of health care, it is necessary to address both readmission rates and iatrogenic disease while in hospital. Even a small decrease in readmission rate could result in substantial savings. The same could be said for adverse side effects of treatment while in hospital.

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Source: Dr. David Hogan, Department of Medicine, Camp Hill Hospital.

HEALTH RISK SURVEY OF MEDICAL STUDENTS 1983-85

Over the past two years a brief health risk survey has been carried out among first-year medical students during the human development series. The following questions were asked:

1. Do you exercise at least four times a week for 20 minutes?

2. Are you less than 10% overweight?

3. Do you buckle up 19 times out of 20 anywhere you drive?

4. Do you smoke less than one cigarette a day?

5. Do you practice breast self-examination (or testicular self-examination), i.e. have you done so once in the past six months?

6. Do you drink less than 7 beers, shots or glasses of wine per week?

Results are shown in the accompanying table and indicate considerable consistency from year to year, with the notable exception of seat belt use, which has increased substantially (no doubt in response to the legislation). Also of note is the higher percentage of alcohol use in the more recent year.

MEDICAL STUDENT HEALTH RISK SURVEYS 1983-85

Not Meeting Criteria

	Men (%)		Women (%)		All (%)	
	83-84	84-85	83-84	84-85	83-84	84-85
Exercise	19(39)	25(45)	14(44)	15(43)	33(41)	40(44)
Weight	11(22)	7(13)	6(19)	7(20)	17(21)	14(6)
Seat Belts	25(51)	17(31)	15(47)	4(11)	40(49)	21(23)
Smoking	3(6)	2(4)	1(3)	3(9)	4(5)	5(6)
Self Exam	41(84)	40(73)	8(25)	8(23)	49(60)	48(53)
Alcohol	14(29)	18(33)	1(3)	8(23)	15(19)	26(29)

n 1983-84 = 81 (49M; 32F) n 1984-85 = 90 (55M; 35F)

Source: Dr. Brian K.E. Hennen, Professor and Head, Department of Family Medicine, Dalhousie University.

THE INTERNATIONAL CODE OF MARKETING OF BREASTMILK SUBSTITUTES

An international code of marketing of breastmilk substitutes (infant formulas) was adopted by the World Health Organization in the latter half of 1981. Canada voted for the adoption of the code. The purpose of this statement is to indicate ways in which the code may reasonably be implemented in Canada. It is important to realize that whilst the main focus was to try to reduce abuses in the marketing of breastmilk substitutes in the developing world, it still has relevance in developed countries.

The Nutrition Committee is on record acknowledging that human breastmilk is the ideal food for the young infant and supporting the promotion of breastfeeding.[1-5] The Committee furthermore made specific recommendations on how breastfeeding might be promoted. It is however recognized that some women are unable to breastfeed and other mothers choose not to breastfeed. Breastmilk substitutes were in fact developed in order to meet the nutritional needs of the infants of mothers in these two groups. The Nutrition Committee feels strongly that the modern breastmilk substitutes are significantly nutritionally superior to formulas made from evaporated whole milk or from whole cow's milk.[4,5]

The central issue in the international code is the prevention of the promotion of breastmilk substitutes and feeding bottles.[6] The Nutrition Committee is in agreement that the promotion of breastmilk substitutes and feeding bottles is likely to promote bottle feeding to a detriment of breastfeeding. Some of the ways in which formula and feeding bottles (this includes disposal bag feeding systems) have been promoted in Canada have contravened the letter and spirit of the WHO Code. These include:

1. The provision of free samples of formula, bottles, and feeding devices to mothers going home from hospital.

2. Much of the material given to new parents in hospital contains advertisements for formula and bottles.

3. The provision of free samples to physicians and other health care workers.

The practices outlined above are normal marketing practices in Canada and are used for a wide variety of other products in infant care, such as baby oil, disposable diapers, shampoo, and baby powder. The reason for singling out the promotion of breastmilk substitutes and infant feeding bottles is the view that their promotion in this fashion encourages bottle feeding and thereby undercuts breastfeeding. The Committee feels that public institutions such as hospitals, public health clinics, as well as doctors' offices should not be used for this kind of promotion. We therefore recommend:

1. that free samples of formula, bottles or formula feeding systems not be provided routinely to mothers going home from hospital.

2. that hospitals look at the advertising material given to mothers and omit those that deal with breastmilk substitutes and infant feeding bottles.

3. that physicians and other health care workers not accept free samples of formula or feeding devices.

4. that factual information be available regarding the necessary techniques for bottle feeding for those women who are unable or unwilling to breastfeed. This information should be provided to those who need it by hospitals, medical practitioners, public health authorities, and other care workers.

5. that those women choosing to breastfeed be supported and encouraged.[1,3]

References

1. Nutrition Committee, Canadian Paediatric Society. Breastfeeding: what is left besides the poetry? Can J Publ Hlth 69: 13-20, 1978.

2. Roy CC, Myres AW, Ste-Marie MT, Pencharz P, Howarth J. The rediscovery of breastfeeding. Can Med Assoc J 119: 109-112, 1978.
3. Nutrition Committee, Canadian Paediatric Society and Committee on Nutrition, American Academy of Pediatrics. Breastfeeding. Pediatrics 62: 591-601, 1978.
4. Nutrition Committee, Canadian Paediatric Society. Infant feeding. Can J Publ Hlth 70: 376-385, 1979.
5. Nutrition Committee, Canadian Paediatric Society. Infant feeding practices revisited. Can Med Assoc J 122: 987-989, 1980.
6. Myres AW. Breastfeeding: a Canadian perspective on a global priority. Can Med Assoc J 125: 1078-1080, 1981.

Source: Nutrition Committee, Canadian Pediatric Society.

NEW (14th) EDITION OF APHA'S CONTROL OF COMMUNICABLE DISEASES IN MAN NOW AVAILABLE

The American Public Health Association has just relesed an updated version of *Control of Communicable Diseases in Man*, the oldest and most widely recognized source book on infectious disease control. Revised every five years, this well-known volume features the latest capsulized information on more than 150 diseases. Old chapters have been updated and new chapters have been added for potentially communicable diseases which have emerged since the prior edition. New entries include AIDS (acquired immune deficiency syndrome), malignant neoplasia, cryptosporidosis, Kawasaki syndrome, and hymenolepiasis.

Produced in collaboration with the World Health Organization, the Pan-American Health Organization, and experts from many nations, the volume is a handy reference manual in pocketbook form for practitioners, teachers, and students of medicine and public health. It is available from APHA Publication Sales, 1015 15th Street, NW, Washington, D.C., 20005; 480 pages; US $9.00 ($7.50 for APHA members), Stock No. 080; Foreign $12.00 (Stock No. 580)

Note: this new book is also available at the Dalhousie University Bookstore for $13.50 Editor □

Correspondence

To the Editor:

I read with interest the article written by Dr. J.E. Harris Miller, Deputy Minister of Health for the province of Nova Scotia on the current and future issues surrounding Nova Scotia's Health Care System.

I believe that all Physicians are requiring increasing education with respect to the larger issues surrounding the delivery of health care in this province. Considering my interest in this area then I was somewhat dismayed to see that there is a significant factual error which bears correction.

The section on regionalization of health care Dr. Miller states that there are 17 out of 18 practising Orthopaedic surgeons in the Halifax area. Perhaps this is a typographical error but for the record it should be pointed out that at the time the article was written there was 13 Orthopaedic surgeons practising in Halifax out of 14 qualified in the province.

There is no doubt that there is a marked shortage of Orthopaedic surgeons in the outlying communities of Nova Scotia. Unfortunately, this type of error infers that there is an over-supply of Orthopaedic surgeons in the Halifax area which is certainly not the case.

Since the article was written there has been the addition of one further Orthopaedic surgeon in Halifax, the total now being 14.

Regardless, I am pleased to have the opportunity to clarify this and again to commend you for introducing this type of article to the journal as it behooes all of us to be as informed as possible as it is my belief that the dialogue between the administrators of health care and the practising physicians requires sharpening. Indeed if this was an error for example it may help to explain to me some of the difficulties which arose recently regarding some discussions regarding specifically the section of Orthopaedics with respect to manpower. I look forward to further publications along this line.

Sincerely,

J.C. Hyndman, M.D., F.R.C.S.(C)
President, Section of Orthopaedics
The Medical Society of Nova Scotia □

Personal Interest Notes

As is noted in the editorial, **Dr. R. B. Goldbloom** is leaving his post at The Izaak Walton Killam Hospital For Children. He will remain on staff at the hospital following a six month travelling sabbatical. The regard with which he was held has been demonstrated by numerous testimonials in the past few months.

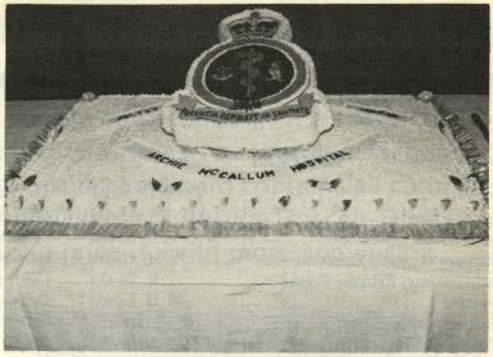
The local medical centre in L'Ardoise, Richmond County, N.S., recently was renamed in honor of **Dr. William B. Kingston,** the leading force in its establishment, who died suddenly earlier this year. The clinic which opened in 1983 has one of the best emergency facilities in the province.

A member of the Provincial Legislature, **Dr. James A. (Jim) Smith,** Dartmouth, has been name Nova Scotia's Family Physician of the Year by the Nova Scotia Chapter of the College of Family Physicians of Canada.

Recently awards were made by the College of Family Physicians of Canada to **Dr. Kenneth Murray,** Neil's Harbour, Cape Breton, who won the Upjohn Postgraduate Study Award, and to **Dr. Donald A. Weir,** Dartmouth, who won the C.M. Hincks Scholarship in Psychiatry.

Dr. Murdock Smith, Sydney, Cape Breton, **Dr. Michael Banks** and **Dr. Ian Cameron,** Halifax, were elected Fellows of the College in 1985. They are now FCFP (Can.).

Dr. John Savage, a long time practising family physician in Dartmouth was elected Mayor of Dartmouth during the recent October election. The *Bulletin* wishes him well in the coming years.



The above pictured cake celebrates the opening of the new Archie McCallum Hospital, the major facility for the Canadian Armed Services in the Maritime Provinces.

Pictured also at the festivities celebrating the grand opening are: From the left are Dr. George Novotny, Chairman ENT Department, Dr. John D. Smith, Commanding Officer, Archie McCallum Hospital, Dr. Christopher West, a past Chief of Medicine, Canadian Forces Hospital, Halifax, Dr. Donald Willoughby, a past Commanding Officer, Canadian Forces Hospital, Halifax.

The Canadian Forces Hospital in Halifax has played a major role in health care in Nova Scotia, and in the lives of many provincial doctors. Continuation of that role is anticipated and congratulations to all involved in planning and building this 99-bed facility. □

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