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On the Road to the River

It is, some say, no harder to die than to be born. Such a statement, though it may be true, convinces no one. It is perhaps correct that one may be equally unaware of the moment of death as of the moment of birth (claimants of total biographical recall notwithstanding) provided one could fix with certainty the final biological activity that marked the time of demise. It seems though that no one, not even the most imaginative autobiographer, however brashly he may claim to recall the moment of his violent ejection into the world, has yet claimed awareness of the agonies of cell division; the strictures of ectodermal invagination or that misery of budding extrusion from the primitive gut which could be the tearing, stretching, unrecalable torture of the developing embryo.

No one, however, can practise medicine for long without observing how terrible is the patient's awareness of the days, weeks or months of the gradual destruction of a once nearly perfect body, wracked with physical pain, tortured by agonies of remorse and fear, or embittered at the God who sends him the curse of misery and death. On the other hand, one cannot practise many years without some patient, young or old, instinctively aware of the fatal nature of the illness, begging that nothing be done to prolong his misery and drag out the weary and often painful days to a merciful release. Who can observe the questioning eyes, the drawn cheeks and the wasting body and not feel a compassionate urge to do all in

one's power to ease the suffering of mind and body while at the same time avoiding officious, pseudo-scientific efforts to keep alive, as an exercise in respiratory prolongation, a body in whom any hope of possible useful recovery is long past.

It should be a matter of great concern to thoughtful doctors, caring for a child with acute leukemia, to decide just what exactly to tell the stricken parents. Are we not too often guilty, out of compassion I suppose, of failing to tell the whole truth? Do we not say, softening the blow we think, that this or some new treatment offers a little hope, at least for temporary cure, without explaining that with it or without it their child will inevitably, in a few months, return to and pass through the dreadful valley whose fearful shadows deepen as you talk. Is it kindness and is it really necessary to suggest to them a treatment which we know full well is but temporary relief, because we haven't the heart to quench that tiny flame we see them trying to build into a fire of hope and knowing that as parents they are almost certain to accept whatever we suggest? If we were to tell the whole truth, would parents choose this temporary respite? It seems doubtful to me, especially if they were truly informed of the effect on their other children of prolonging the dying, the inevitable concentration on the sick one for an overly long period, the attempt to amuse and make happy during the little time remaining at any cost, even to the neglect of the others.

Writing on this subject, Witts¹ says, "More active treatment (other than blood and cortisone) raises difficult ethical questions and it should be made clear to the relations before embarking on active treatment that there is no question of cure but merely a short prolongation of life and that the side effects may be distressing." It seems reasonable that until medicine has something really worth while to offer it would be better to say truthfully that there is no effective treatment and not harry parents with unfair and painful decisions.

If you practise much among older patients (and if you live long enough you surely will), you are struck by the eagerness with which some of those who have serious chronic and disabling, though not actually painful, illness long for the relief of an early death. You will wonder at how few of them express this desire in terms of release to the presence of the Heavenly Father whose open and welcoming arms have been the perimeter of the religious teaching within which so many of them were nurtured. I have not seen these sick old people panic or change their attitude as their disease led them more nearly to the end. Is this a deep and certain inward faith, unspoken and without the need of exteriorization in any form? Or is it merely the response of an organism aware of its failure to adapt for health and longevity, resigned like an animal to crawl away and die?

Others, however, approach their final hour with evidence of the strongest and most beautiful faith, and it is at the bedside of such as these that the observer loses fear of death himself. I recall a patient whose wife had died many years before and whose only daughter (as so often happens) had given up a life of her own to stay home and care for him. Clear in mind but with a rapidly failing circulation, he asked, "Will it be long now, doctor?" "Not long. A little while perhaps," he was told with the cautious evasion of uncertainty. The old man, more sure where the sand stood in the glass than the doctor, said, "Ask Elizabeth to come in." When his daughter, somewhat grim and gray, stood at his side he said, "Elizabeth, the doctor tells me I have not much longer to live. Have you any message for your mother?" I do not recall her reply, but the certain faith of the old man was something beautiful to behold.

I recall too sitting at the bedside of another old man dying of myocardial failure with a minimal amount of respiratory distress and a clear mind but with a pulse getting gradually weaker. It was a sort of fading such as Dickens described in the death of a child in "Dombey & Son" and which was a not uncommon termination in tuberculosis, where the vital functions gradually, painlessly and without agonizing distress progressively weaken and fail. It was noon of a sunny day and the patient said to his wife who sat holding his hand, "Put on the light Martha, it is getting dark." She, a sensitive soul, naturally empathetic, said, "Yes, in a minute or two," and the old gentleman began a quiet but clearly audible recital of the Shepherd's Psalm in the midst of which his life and those still waters slipped quietly away together. It took place without a grimace and without that frightful spasmodic gasp for air with which so many bodies, drowning in the sluggish pools of their own internal milieu, make their last futile clutch at life. No one witnessing such sweet sleep could continue to fear death.

Compare these with the macabre scenes all too often enacted in hospitals today, where the patient, possibly the victim of an incurable disease, or perhaps a worn old body seeking the road home, lies in a bed surrounded by standards from which dangle bottles of various solutions with tubing running to arms fixed firmly to boards projecting on either side of the bed as though he were nailed to a cross. A nurse stands at one side and the intern on the other is injecting a new drug that has successfully prolonged life in a small series for a few weeks and (the clincher) as long as a year in one authenticated case! The wife stands uncertainly in the doorway, wanting to be with her husband in these last hours but diffident about pushing her way through the busy traffic around the bed. When at last she wins through to his side she feels as though she were an interloper with no proper business in this place, where by simply holding his hand she can give the comfort that at the end only the presence of a dear companion can offer.

Is not all this activity to keep alive a dying man often merely an educated cruelty? Reverence for life (in the words of Albert Schweitzer) does not surely exclude respect and pity for the dying! If we have so little knowledge that we do not know when a patient is moribund, then certainly we have too little learning to use the newest chemical commended by an enterprising commerce for the treatment of incurable disease.

We hear much talk in these times, and medical voices are often raised among them, about the high costs and pagan aspects of present-day funeral rites. We however fail to see that our own ill-judged and overzealous attempts to prolong life by extraordinary measures, without regard to the privacy and intimacy of family affection in the presence of approaching death, are just as primitive as and even more barbarous than those of the undertaker, who begins the earliest phase of the morticians' "grief therapy" the moment the patient has been insufflated with his last breath and the intern has taken his weight off the splintered thorax. Here the finest sensibilities of the stricken family take precedence over all other considerations (except perhaps the value of the estate) and leave the relatives confirmed in the opinion that doctors are a cruel, heartless and greedy lot, and undertakers kind, helpful, efficient and worth their high fees!

It is difficult to discuss the economic aspects of the treatment of incurable illness or of the very aged because emotional and humanitarian factors immediately and perhaps rightly overshadow reasonable and critical considerations. In the presence of so many apparent needs or desires in our burgeoning society, how much space, time, money and personnel should be expended to keep alive for a few probably useless years an octogenarian (whose contribution to that society may never have got beyond being a consumer of food, goods, services and largesse) when so much is required for the education and nurture of young individuals who may perhaps make some worthwhile contribution to the nation? One has the feeling that though our society is geared, commercially and technologically, to youth, it is chained emotionally and economically to the aged and that out of these conflicting values is spun, from the

fragile fibres of job opportunity and old-age security, an obvious and disabling national neurosis.

So also are the increasingly complicated technology and the bitterly competitive commerce, relentlessly lowering the threshold of old age until it is apparent that man no longer ages biologically or chronologically but industrially, and that these prematurely and unnaturally aged thousands must continue to be supported by the State at immense cost.

In the light of the great burden of maintaining these relatively young and healthy idlers in a state of amused well-being, where can lines be drawn in planning the treatment and care of the truly aged and the incurable?

One can begin (or can one?) with clean surroundings in a simple building within easy ambulance distance of the special facilities of the larger hospitals. One can add good nursing care, and this does not mean the miniature nurse-scientist-scrivener being foisted on the suffering public today. One can ensure medical care that is directed toward the treatment of symptoms, and those who still sneer at such management should read Modell's² book on the "Relief of Symptoms". Nutrition can be adjusted to the capacity and needs of the patient, and when or if deglutition becomes impossible the use of intravenous fluids in amounts calculated to relieve the distress of thirst without unnecessarily prolonging the terminal phase of hopeless disease is surely a kindness to the dying and consolation to their kin. The nasal tube presents feeding obligations which cannot be easily ignored and is in most instances a cruelty.

This is not to suggest that specific or definitive treatment, either medical or surgical, should not be given in any case, at any age, where diagnosis is clear and cure of an intercurrent condition reasonably certain, but rather to indicate that there is a precise, if difficult, position between the unnecessary prolongation of suffering through the use of nutritive fluids by extraordinary means and the easing of the agony of dehydration experienced by so many on the Road to the River, which can best be maintained by the skilful exhibition of small amounts of intravenous fluids, ordered not as a routine, but from time to time by a kindly, watchful and humane medical attendant. Thereby is some degree of ease and comfort given the traveller who makes his slow and painful descent to the Ferry, and also is administered some salve to the conscience of the scientifically trained but philosophically immature physician. □

J. W. Reid, M.D.

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IF THIS BE AGE

If age is but a book of lessons learned,
A store of wisdom gained; a culture won,
The life full-lived that has no duty spurned
Or sighed at gathering dusk, "I might have done".

If age is but a roll of honor spoken,
A babble of esteem, a hymn of praise
That youth contained in silences unbroken,
To mute the harsh discordance of his days.

If age is but a mellowness of light,
Flooding the pathway of the west'ring sun,
That guides the traveller gently toward the night
And sweet repose when busy day is done.

If this be age, then Teacher tell us how,
Each can achieve it ere his fretful day,
Leaves the unburnished past to waste the now,
And strand us lost and spendthrift by the way.

J. W. Reid, M.D.

ENCOUNTER

This chap who comes with measured gait,
Looks like a man I've known of late.
His back and knees by time are bent,
His steps with cautious care are spent,
His eyes though piercing bright and clear
Look back to far gone yesteryear.
His cane held stiffly to the fore
Keeps time with Charon's sculling oar
And lacks that easy rhythmic swing
That marks a young man's journeying
But shows him aged and infirm,
A world-borne foetus close to term.
Who moves unwitting, unaware,
Husbanding strength with cunning care,
Knowing not when the tolling bell
Will lift him from his earthworn shell
And set at last his spirit free —
'Tis strange. The fellow looks like me.

J. W. Reid, M.D.

Planning for the Aged

F. R. MacKinnon,* LL.D.,

Halifax, N.S.

There are clear indications, from a number of recent demographic studies, that the age structure of Canada's population is changing. The Science Council of Canada, in the publication — "Implications of the Changing Age Structure of the Canadian Population" — predicts that the percentage of persons over the age of 65 years in Canada, will increase from its present level of about 8.1 per cent to 10 or even 13 per cent by the year 2001. The Nova Scotia population over 65 has always been greater than the Canadian average. For the year 1971, 9.2 per cent of our population was over 65. The Province of Saskatchewan had the largest aging population in that year, with 10.2 per cent and the Province of Newfoundland the smallest with 6.2 per cent.

Early retirement and runaway inflation further accentuate the problem. An increasing number of our population is electing to retire at 65 or even as early as 60. The purchasing power of savings and pensions decrease so rapidly over a five year period that economic hardship is bound to be the result of the current inflationary cycle and Canada does not, by any means, have the worst record.

Fortunately, Nova Scotia and indeed the Atlantic Provinces have been able to preserve their way of life with very limited invasion by heavy industry. Thus, early retirement and drastic changes in life style due to retirement, have not been a serious problem. The social dislocations arising out of aging and early retirement are aggravated, in some parts of Canada and the United States, by individual obsolescence, particularly in heavy industry. This has the effect of forcing persons out of employment as early as age 45 and not always with a pension. The inevitable result must be insecurity and emotional upheaval for the individual, even if he or she is fortunate enough to find a second career or job.

Increasing housing costs, scarce land for housing in the urban centres, transportation problems and cultural changes have revolutionized trends in housing for older persons. Apartment dwelling has become common place, houses are smaller and more compact and the family unit is more and more confined to the father, mother and dependent children. The concept of family, which venerates age and which might include three or four generations in one family unit, is now little more than a memory to recall with nostalgia.

Two other changes are worthy of note.

In 1925 the average life expectancy was 60 years. By 1950 this had increased to 69 years and for the current year, 1975, the average life expectancy is 73 years. The life expectancy of a person 65 years of age was 13 years in 1925. In 1975 a person 65 years of age may expect to live another 16 years to age 81. All of this has been brought about by improved

health services. Universally available hospital services, medical care and pharmacare are the culmination of these improvements in our health service program.

Canadian social services and income security programs were, at least prior to the current inflationary crisis, among the finest and best in the world. It is fair to say that in 1940, for example, an old couple could anticipate no financial security apart from their personal savings and a state pension barely sufficient to keep them alive. As of now, an old couple over 65, without savings and outside income, are assured of a base income of \$4898.40 and some provinces have added to this with additional income and by providing free services. Notwithstanding this, income security for the aged leaves much to be desired.

If we take all these components, demographic changes, changes in family structure and housing, improvements in health services and income security and early retirement trends, and add to these factors such recurring crises as we are now experiencing in runaway inflation, we may form some vague idea of the stresses and strains to which our aged folk are required to adjust.

The first and obvious problem facing the aged is the use of leisure time. We used to think that work could be equated with Godliness. Then came a concerted attack on the so called protestant work ethic and for a time it was fashionable to believe that heavenly bliss would be realized when there was no more work. We are now learning, to our sorrow, that in youth, middle age and even in old age, we must have some interest, concern and involvement. Recreation is fine for a time, but for most human beings, a continuous round of doing nothing useful or productive, leads to boredom, poor mental health and even anti-social behaviour.

If there is to be early retirement, a longer life span, better health services and greater financial security, what will the aged do with their spare time? The truth is we all need to be involved in doing something which we ourselves consider important and to which the community attaches some intrinsic value. This is even more necessary for older folk who have to make peace with declining physical vigour and other changes in life style which tend to diminish their self esteem and feelings of usefulness.

Contrary to the writings of some social scientists, we do not have an over abundance of everything. We cannot afford to be profligate and wasteful of our human resources and the abilities or our aged folk are largely wasted. The aged have acquired skills, abilities, wisdom and serenity which the community sorely needs. It is a waste and a tragedy that any part of this should be lost with our old folk doomed to sit and stare out of a window waiting for death to provide a welcome release.

*Deputy Minister of Social Services, Province of Nova Scotia.

The first thrust of the Federal and Provincial Governments' effort on behalf of the aged has been directed at the areas of primary need, such as recreation, better use of leisure time, the relief of isolation and loneliness and involvement in mutual self-help. Day centres, activity centres and social clubs are meeting this need. Senior citizens in Nova Scotia have organized over 90 clubs during the past few years. The role and function of these clubs is to provide recreation, leisure time involvement and mutual self-help.

Some of the impetus for these developments has come from the New Horizons Program, launched by the Federal Government in 1972. The Province established a Commission on Aging, in the same year. The Commission is known as the Senior Citizens Commission and it has done much in the past three years to promote services, community understanding and support for all matters related to aging. The Commission facilitates and encourages joint planning and the co-ordination of effort among community agencies and government departments. Research and fact finding studies are promoted and developed.

The next requirement should be the development of community employment programs. Activity centres and sheltered workshops indicate directions in which we should move. The Federal Government has experimented with community employment through such programs as Local Initiative Projects, Local Employment Assistance Programs and Opportunities for Youth. While many mistakes have been made in developing these programs, they too indicate directions we should take in creating useful work opportunities for aged persons. In fact, what is required is ingenuity and creativeness in perceiving and developing the multitude of opportunities that lie waiting to be initiated. Seminars, workshops and the interchange of ideas all contribute to creating the climate and the resources for developing these facilities.

Society has always tended towards sweeping unpleasant problems under the rug and then assuming they are solved. The problems associated with aging in 1975 are no exception.

We have already noted that the modern family has no place in it for the third and fourth generation. Houses are non-existent or too small. There is no will to include the older generation in the family, even if the physical resources permitted it, which they do not. We think we are solving the problem and we appease our conscience by building more and more nursing homes and homes for the aged. There the aged are, all living together in groups of 50 to 150, in varying stages of physical and mental health. We have succeeded in getting them out of our communities and, except for an occasional visit, we have got them out of our sight and even out of our mind.

In 1960 we had 15 homes for the aged and nursing homes, caring for approximately 391 persons. All were old buildings and only the very poor in our society were willing to go to these modified poor houses that were developed under the old Nova Scotia Poor Law. By 1970 all this had changed. By the end of 1975, 21 new homes for the aged will have been

built under municipal government auspices, with federal and provincial government assistance and caring for 1618 persons. We now have 25 licensed nursing homes with a bed capacity of 1676. In addition, 1519 persons are being cared for in 88 small boarding home facilities which, in recent years, have multiplied all over the Province. The end of this development is not in sight. At the time this article is being written, the capital requirement for Central Mortgage and Housing Corporation mortgage money for new construction facilities for the aged is in excess of twelve million dollars. There is no indication that this trend will reverse itself next year or the year after.

Mankind is prone to move in cycles and be a follower of trends, with little thought as to whether what he is doing is good for the human family. The pendulum is swinging now to the isolation of aged persons in nursing homes, homes for the aged and apartment blocks. We have tended, over the years, to treat the retarded, the mentally ill and our children in the same way. Parents' Associations for the retarded have introduced a most valuable concept called — "normalization". It implies that all of us have a right to a normal environment. It is obvious that if we are ill or require heavy nursing care, a nursing home or hospital may be the only way we can be helped. Unfortunately, at least fifty per cent of those who are in homes for the aged, large and small, are there not because they require extensive care in an institution, rather they are there because society is unwilling to provide alternate methods of care.

Home helps in the form of sitters services, day house-keeping helps, homemakers, visiting nurses, day centres for aged persons and similar community services could keep at least fifty per cent of our aged persons in their own homes and communities instead of having them placed in homes for the aged. Surely this should be the solution of choice and common sense.

Why then do we not develop these services? Partly because going into a home for the aged or nursing home has become a fad, a part of the conventional wisdom and partly because, as in the case of the retarded and the mentally ill, we would prefer to have our aged persons out of our sight where we are not required to face the unpleasant facts of old age, sickness and death.

The annual cost of maintaining persons in homes for the aged and nursing homes is now approaching seven to eight thousand dollars a year. With present trends this will reach ten thousand dollars a year by the end of 1976. How many individuals can save to provide for this magnitude of expenditure? How many retirement plans are generous enough to pay such costs to maintain an aged person in a home for the aged? Obviously only the state and the taxpayer have the resources to foot the staggering bill that homes for the aged and nursing homes are costing and will continue to cost.

On the other hand, community services could be provided for one third of the cost if we had the foresight and ingenuity to move in that direction.

I would suggest that we should move immediately to expand homemaker services, home nursing services, community housing facilities and community centres for the aged. If we do not do this quickly, we shall pay a heavy price for our lethargy.

There are other supportive services that the community should provide if it is to move in this direction. Meals on wheels and day care facilities are well known. The community will have to give some thought to the problems of transportation and helping old people to get about in the community. Senior citizens clubs and centres can provide the means of self-help and, as indicated earlier, should be the major thrust in improving and enriching the quality of life.

I have already referred to the need for useful work and involvement. Adult education should go hand in hand with these services and here is a rich field for volunteer effort and self-help, quite apart from what government can do through tax supported services.

I have referred to inflation, which is the number one enemy of the poor and the aged. The tragedy is that to the industrial worker, the professional man and, indeed, to everyone, except the poor and the aged, inflation may be a boon. Certainly, in the early stages certain segments of society suffer very little. The aged and the poor, however, bear the brunt of a devaluating currency and, in our society, their voice is scarcely heard. The obvious solution is an income security program and a Canadian pension program, which is realistically related to increases in cost of living in precisely the same way that business and professional increases relate. This is not easy to accomplish. An elderly couple receiving \$4800 a year have little leeway for expenditure beyond the necessities of life. A ten per cent cost of living increase simply perpetuates the status quo. On the other hand, the recipient of \$25,000 income who receives a 10 per cent increase, has much more than the bare necessities of life to begin with and his cost of living increase perpetuates his status quo. In a time of inflation, the poor and the aged tend to fall behind even with realistic cost of living escalation of their pensions and state aid.

If I had the resources and the backing of society what would I ask for the aged? Here is my list.

1. A provincial and national recognition of the seriousness of the problems society has to face in planning for its aging population.
2. The involvement of the universities and medical schools in fact finding and research in geriatrics; the support of government, at all levels, in this effort.
3. The development of geriatric centres of information, nationally and provincially, in respect to every aspect of living, for example, health, social services, housing, recreation, employment and education.
4. Clubs and social centres for the aged to promote self-help and improve their quality of life.
5. A new emphasis on "normalization", community living and community services, for the aged so that they may

be enabled to remain in their own homes and communities for the longest period of time.

6. An imaginative and truly adequate program of community housing.
7. Expanded home helps.
8. Day centres to promote adult education, sheltered work activity and recreation so that the maximum use may be made of whatever capacities our aged folk wish to contribute to their communities; in short, useful work commensurate with their abilities.
9. A transportation program geared to the needs of the aged.
10. Voluntary involvement and activity so that the major part of these tasks will be performed on a voluntary basis, by community agencies and not necessarily with total government involvement and responsibility.
11. Community health and social services.
12. A return, to familial caring and familial responsibility for older members of a family.
13. Continuing improvement in our homes for the aged and nursing homes and their use as truly specialized facilities for those who must leave their family and home community.
14. An income security and pension program that permits our older folk to live in dignity and decency in their old age.
15. The co-operation of the professions, business, industry and labour unions and every sector of our economy in making sure that the skills and potential of our older folk are individualized and not set aside or lost to society.

I am sure the reader will find that I have left something out. I am more concerned about how we will achieve these ideals. Government can go only so far and do so much. A society that has lost its initiative to get out and help itself will never have either the gumption, the will or the know-how to push government to do what it should do and, worse still, such a society cannot be discriminating enough to discern the quality and relevance of what government may do.

The task will be exciting, challenging and rewarding. We do it for those we love and cherish and eventually for ourselves. Let us get on with it. □

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Health Services for the Aged or Keep the Old Folks at Home*

P. C. Gordon,** B.Sc., M.D., C.M., D.P.H., C.R.C.P.(C),

Halifax, N. S.

Everyone today is aware that the number of aged persons in our society is increasing at a rate out of proportion to the total growth of the population. Many, however, are not aware of the real magnitude of this increase and of the impact it is only beginning to have on our health and social services. In 1971 there already were 1.7 million Canadians aged 65 and over and by 1986 Statistics Canada projects these will have increased by 47% to 2.6 million, to constitute 10% of the total population. It is this age group then which is now becoming the fastest growing segment of our population. In our immediate area, that is, Halifax, Dartmouth and Halifax County, it is estimated that there were over 17,500 persons aged 65 and over in 1974, an increase of more than 3,000 since the census of 1971.

How are we going to cope with their multiple needs and demands for health and health related services and what are the priorities? Can we learn anything from European countries which have had to face these problems before? Are there lessons to be learned from our own past and current experiences in providing care for elderly citizens? I plan to touch briefly on these questions and in addition raise a good many more which I shall leave with you.

Until comparatively recently we really only had three or four ways of caring for older people when they were no longer able to care for themselves. They remained at home under the care of their children, neighbours and family doctor, they were admitted to a general hospital or all too often when they became poor and otherwise unwanted they were tucked away in the back wards of mental hospitals or in county poor houses which were conveniently provided to incarcerate the old, the poor, the mentally retarded and any other deviant person the community wished to have removed from its' midst.

As the numbers of elderly in the population rose, and as society's attitudes and values allegedly changed, these relatively simple solutions became more and more difficult to achieve. Keeping the old folks at home became more and more difficult and costly, hospitals began to fill up with elderly people requiring long term medical care and society finally decided that the old back wards and poor-law institutions had to go. The pressures grew but instead of initiating truly new and innovative programs designated to assist the elderly to remain independent we attempted to solve the problem in our

old traditional way — We opted for more institutions. Financial incentives were provided to municipal Governments and private developers to build new facilities. So we built Homes for the Aged and Nursing Homes and we built and we built until in Nova Scotia today we have over 3500 beds provided in these types of facilities and we are building more.

In spite of this costly endeavour, however, the pressures continue to mount. The number of elderly people entering our institutions continues to grow. Though those over 60 years of age in Nova Scotia constitute but 9% of the population they account for 18% of all hospital admissions and almost 30% of all the hospital days of care provided. Most of our Homes for the Aged and Nursing Homes are full and there are continuing demands for more and more of these facilities. In fact, it is inevitable that this demand for more institutional beds will continue, not just because the elderly are increasing in number, indeed not primarily because of this, but rather because we are still an institutionally oriented society. Fortunately, however, there is an increasing number of people in responsible positions who realize that attempting to fully meet this demand for institutional beds is a futile and frustrating exercise for the appetite for beds, it seems, is insatiable. Thus, we are finally beginning to recognize that we must change our priorities and opt for programs and services designed to maintain the independence, dignity and self-respect of the elderly through community care. This will not be an easy transition. It took considerable time and effort to initiate the program for the construction of new facilities to replace the old county poor houses but once it began to roll it picked up speed to such an extent that it now reminds one of the runaway freight car being carried along by its own momentum. Now obviously we do need some institutional facilities for the aged but when one finds on the basis of surveys in this Province that up to 40% of the residents in Nursing Homes and Homes for the Aged require only a minimal amount of personal care which could just as well be carried out in the community and when one hears of new institutions being promoted partly on the basis that they will provide employment and otherwise benefit the economy one can't help but wonder whose interests are really being served by the construction of more and more of these facilities. In my view, we would be spending our money more effectively and for the greater benefit of the elderly if we improved the services and programs in the facilities we *now* have rather than building more. By this I mean such things as more and better training programs to upgrade the quality of the staff and motivational and activity programs for the residents in our Nursing Homes and Homes for the Aged. In our hospitals

*This is an address prepared for delivery to the Halifax Rotary Club recently.

**Professor and Department Head, Department of Preventive Medicine, Faculty of Medicine, Dalhousie University, Halifax, N.S.

we should be developing extended care and rehabilitation units specifically designed, staffed and equipped to meet the needs of the Geriatric patient, using, I hasten to add, existing space wherever feasible. Let us not, whatever we do, build separate Geriatric hospitals.

I will now turn my attention to the concept of Community care which I mentioned previously as the alternative to the construction of more beds. Now what does this phrase community care really mean? To some, I am discouraged to say, it simply means an attempt to overcome the problem created by the lack of enough beds to meet the demands by exporting a thin veneer of institutional services into the outside world. It is considered a necessary evil and second best. To me and many others, however, it means the provision of high quality programs and services designed to maintain the independence of the elderly, and others for that matter, in the community for as long as possible and when institutional care *is* required to make it as *brief* as possible. It means the provision of financial, social and other incentives to keep the old folks at home again. This can be done and is being done in many areas of Europe and increasingly so on this continent, through the provision of such programs and services as home care, meals on wheels, day hospitals, geriatric centers, friendly visitors, home health aids, senior citizens clubs, assistance with home maintenance and repairs, counselling services, information and referral services, better housing accommodations and so forth. But because we are still so institutionally oriented these programs are either non-existent or only rudimentary in most areas of Nova Scotia. Now obviously it is not possible for me to discuss all these programs and services individually, but I would like to sketch out an over-all program which incorporates many of the above services and which I believe would go a long way to preventing unnecessary institutionalization of our elderly. Now let us begin at the beginning of it all — the home. It is often said that we need institutions for the elderly because their children are living in smaller homes and apartments and thus are not able to take the old folks in and care for them. I suspect this is but one more attempt to rationalize placing a great many relatively healthy, but old, people in institutions. Why aren't we making it possible for these older folks to remain in their *own original* homes, be they ever so humble, and from which the children have left. If this were done there would be no need to move in with the kids. This *can* be done if we use our imagination, learn from what is being done elsewhere, and if we are prepared to subsidize people and not just housing projects and institutions. We can provide home maintenance and repair and handyman services to assist the elderly who are no longer capable of doing these things for themselves; we can make it financially possible for them to remain in their own home through higher pensions and property tax relief and rent supplements. We can provide home care such as nursing, homemaking, podiatry and physiotherapy as an insured service, and *this* before we provide nursing home care, thus, *for a change*, providing a financial incentive to remain at home rather than to be institutionalized. We can bring many of our services to people rather than the other way around as we have done for so long.

If the home maintenance programs and insured, comprehensive, home care services were backed up with both social centers and day care hospitals where, through the provision of transportation, the elderly could spend the day and return home at night and if the elderly who require care at a level beyond that which can be provided in the home could enter nursing homes or geriatric centers, receive the care they need and they return home again I submit that we would drastically reduce the demand for new facilities. Indeed, we might have trouble filling the ones we now have, which, parenthetically, is one reason why the program I have briefly outlined will be resisted.

Now I mentioned that people should be able to enter Nursing Homes to receive the care they need and then return home. Currently, this rarely happens. Most people who enter a nursing home remain there until they die, which may be many years. Recently we found, for example, that 20% of the patients in the Nursing Homes of Nova Scotia had been there over six years. Why is this? It is because the home from which they came disappears, closes up, or is otherwise made inaccessible to them once they enter the institution, and this, in turn, is because of society's attitudes and the lack of programs for community care I have described. I can assure you it is not because they *all* progressively deteriorate after admission to the institution so that return to the community becomes less and less feasible. Most nursing home administrators will point out, with justifiable pride, the patients who came to them bed ridden and disabled and who because of good rehabilitative care are now up and about. Then why are they still there? Many others walk into the facility in relatively good health and only really receive room and board. Why have they given up their homes and their independence? It was distressing to find in a survey we conducted of persons on a waiting list for Nursing Home care in Ontario that many did not wish to go to a nursing home and stated they could manage quite well in their own homes if the services were made available to them. But they were not aware that these services were available in Ontario and it was particularly distressing to find that all too often they were encouraged to seek institutional care not only by relatives but by the professionals.

Another reason put forward in support of institutional care is that the elderly can therein enjoy the company and companionship of others of the same age and with the same interests and are therefore better off than they were when living by themselves. True, but couldn't these same benefits be provided by a system of social day care centers with adequate transportation provided? Couldn't we institute friendly visitor programs to bring companionship to the elderly at home?

Now let me make it clear that I am not proposing community care as an alternative to institutional care because it is cheaper. The myth that good community care is cheaper than institutional care should be exploded. It is only cheaper if it is non-existent or carried out as a second rate necessity. If properly done it is as costly, though I doubt *more* costly, than care in a good institution. If what we want is cheap care then let us return to the old poor house. An

unsuitable building, poorly staffed and with no programs certainly is a cheap way of caring for older people and as Dr. D. M. D. White¹ writing in the medical journal, the *Lancet*, pointed out, it has the bonus advantage of a high turnover.

I have suggested that we should be trying to maintain the elderly in their own homes but, undoubtedly, due to the condition or the location of their homes this will not *always* be possible. Thus, it is encouraging to see the emphasis now being placed on Senior Citizens Housing and many of these facilities are now being constructed and proposed throughout this province. Because these apartments will assist in keeping the elderly out of institutions, especially if nursing and other basic services are provided within the facilities, as is the case in Northwood Manor and the low cost apartment complexes provided by the City of Halifax they appear to fit in well with the concept of community care. But, I would like to insert a word of caution and again raise some questions. Why are people leaving their own homes to go to these apartments? Is it *only* because their present dwellings are so bad they can't be made fit for habitation? Is it because the land is required for development? Is it because some well meaning professional decided that *their* home did not come up to *his* standards? Once more I feel we must ask ourselves whose interests are really being served by these developments. Again I quote from the paper in *Lancet* by D. M. D. White¹. Describing the relatively poor housing of many old people in Britain he writes, "But to the 80-year-old couple who live there, this is *home*; when they set up house together, the things we conceive as being essential to civilised living did not exist — certainly not for them. Yet we judge their surroundings by our standards, and feel things are wrong if they do not conform. Neighbours get agitated — especially when they are younger people. Soon everyone is saying rehousing is the answer. A flat on the 15th floor of a tower block, a bungalow on the other side of town, a mile from the nearest shop. We laugh at the old people if they try to tell us it's not what they want — the same way we laugh at children who don't like their cod-liver oil — we know what's best, after all.

We pride ourselves on getting rid of the old institutions, pulling down the old workhouses; we replace them with modern homes, into which people who cannot look after themselves eventually arrive. Picture windows, wall-to-wall carpeting, open staircases, and potted plants are not talismans which prevent places becoming institutions; however, it relieves the anxiety of people living in the same locality to have problems — and especially self-threatening problems like age — removed from their midst".

In an article entitled the Folly of Modern Architecture by the American Architect Peter Blake² originally published in the *Atlantic Magazine* and subsequently reprinted in the *Illustrated London News* the author also questions the wisdom of large housing developments. In fact, he dares to say and I quote, "Housing Projects have to be the very worst way of solving our housing problems". He argues that they are attached with social stigma, lead to rigid immobility and perpetuate the status quo of segregated ghettos. He finally concludes that "it is quite clear now that rent and

home-purchase supplements to people entitled to them are a much more enlightened way of subsidizing housing, however indirectly, than the idealistic methods of the past".

Housing developments for the elderly — an idealistic method of the past? How fast events are moving. I feel the symptoms of future shock. It seems we just discovered them here.

Well, again perhaps I have overemphasized a point so I would hasten to add that, when we must, yes, let us provide senior citizens apartments, but please, let us keep the building small in size and low rise and close to the elderly's familiar surroundings in both a geographical and a social sense and let us bring home help services and home care programs to these apartments.

Recently a group at St. Francis Xavier University³ presented a report to Government on the feasibility of establishing an Institute of Gerontology. I feel I could not complete my talk today in a more appropriate way than by quoting from this excellent report.

"Medical care centres, notably hospitals, must become more aware of the special needs and circumstances of a group of people with a very high utilization rate and must provide the necessary types of facilities and services. Fundamental questions concerning institutional care of elderly people such as the psychological implications of prolonged institutionalization, should be resolved as quickly as possible. Institutions, such as nursing homes and homes for the aged, need to determine their places and roles in the spectrum of health care services with the view to returning elderly persons to their own homes as soon as possible. To facilitate this and also prevent initial admissions, a broad range of home-care and community based services need to be implemented under an appropriate authority. Institutions for old people must erase their image of final "resting-places" and take on a more dynamic role as treatment and rehabilitation centres, and widespread attitude changes will be necessary to alter both public and professional attitudes and expectations toward elderly persons". □

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Geriatric Medicine

A SPECIALTY WITH A FUTURE*

M. R. P. Hall,** M.A., B.M., F.R.C.P. (Lond. Edin.),

Southampton, England.

Increasingly large numbers of old people survive to enjoy old age. In 1971 16% of the population of England and Wales were of retirement age — a total of 8,899,000 persons. Government actuarial estimates suggest that by the year 2011 this number will be 10,089,000 (15.2% of the population). Population surveys have shown that morbidity increases rapidly after the age of 75 years; in 1971 in England and Wales there were 2,248,000 over the age of 75 of whom 426,000 were over 85 years. During the next 40 years it is estimated that the over 75's will increase by almost a million to 3,104,000 while the over 85's will almost double their number.

At the present time a little less than 5% of this number of elderly are cared for in some form of institution. However, in an average population, approximately 25%^{1,2} of over 65's have a mobility handicap, being either housebound, bedfast or only able to get out of the house with considerable difficulty.

Consequently, if these figures are taken as a yardstick for future planning norms, we shall need to provide over 50,000 residential home or hospital places to house 5% of the expected increase in the number of elderly while more than a quarter of a million elderly will have physical handicaps which will place an added burden upon health and caring services. In view of the projected increased numbers of over 85's, in which group the incidence of senile dementia is likely to be in excess of 20%, these figures may well be under-estimates. These figures alone would seem to demand the creation of a special service for the care of the elderly, increasing study of the diseases of old age, and research into the ageing process. Supporting evidence is provided by the waiting list for hospital places; at the end of 1971 this included 9000 elderly for England and Wales and has probably increased since. Further, the Hospital Inpatient Enquiry for England and Wales shows us that 48% of the non-psychiatric beds on any one day in 1972 were occupied by the over 65's; an increase of 4% over 1971. If such an increase continues, over 90% of these beds will be occupied by the over 65's by the year 1990.

Can we afford such an increase? If not, how can we reduce the number of elderly who are going to need hospital and caring services? In terms of capital outlay for buildings and equipment, maintenance and staffing, heating, etc., the expense seems enormous. The capital cost for a 40 — place residential home will probably now be in the region of

£500,000 and the maintenance cost about £75,000 per annum. Less expensive and more effective ways must be found to look after old people. The operation of an efficient and effective geriatric service can help to achieve this aim by keeping people where they want to be, active in their own homes. It would seem therefore, that the speciality of Geriatric Medicine is an economic necessity.

The credit for starting the first geriatric unit is usually given to the late Dr. Marjorie Warren. Approximately two hundred such units now exist in the United Kingdom, and through their in-patients beds, outpatient clinics and day hospitals, provide an efficient and effective diagnostic and treatment service, also advisory and counselling facilities, as well as monitoring the delivery of health and care services to the elderly as a group. It is from the work of these Units that the scientific advances and achievements have come. It is appropriate to recall the four main objectives held by the pioneers of geriatric medicine in the United Kingdom. According to Adams³ they were:

- (1) Classification — defining simple categories of disease and disability in order to resolve the anarchy of chronic hospitals and allocate care according to need.
- (2) Assessment of disability — recognising it as an entity as distinct from the underlying illness.
- (3) Improved standards of long stay and terminal care.
- (4) Liaison with other disciplines, especially in resettlement and after care.

These have developed so that we might now say that Geriatric Medicine is concerned with three aspects of ill health in the elderly:

- (a) the 'Internal medicine of old age'
- (b) the 'Rehabilitation' of the elderly disabled, and
- (c) the 'Extended Care' of those who remain dependent on medical and nursing services, whether at home or in hospital.

The achievements that have been made may be considered under these headings.

Internal Medicine of Old Age

The first objective of the pioneers was classification and it soon became apparent that disease presented quite differently in the elderly when compared to the young or middle aged. Perhaps the most striking difference was the non-specific presentation of illness so that diagnosis, in fact, proved more difficult. Mild ill health, a complaint of tiredness and malaise which, previously, had been attributed to old age

*Based on an address given at the 1st Plenary Session of the 10th International Congress of Gerontology, Jerusalem, Israel 1975.

**Professor of Geriatric Medicine, The University of Southampton, Southampton, England.

(a common assumption) was found to be due to a variety of conditions as diverse as hypothermia, myocardial infarction, pulmonary tuberculosis, or hypokalemia.

The fourth objective was liaison with other disciplines; the British Geriatrics Society has always maintained that Geriatric Medicine be considered a branch of General Medicine, and physicians in Geriatric Medicine have, therefore, been trained as general physicians, and scientific advances in clinical medicine are automatically transmitted into the clinical medicine of old age. May clinicians during their period of general training have worked in specialist fields, such as endocrinology, neurology, or cardiology and expertise gained in these fields has benefited the old.

Arising out of this inter-disciplinary organisation there have been many achievements which have enabled us to improve the health of the elderly. Examples which spring to mind are the work of the Oxford Group to elucidate the problems of hypothermia and postural hypotension⁴. Investigators at the University College Hospital (London) have also studied hypothermia⁵ as well as dietary deficiency⁶ and bone disease⁷. This work has helped to differentiate between osteoporosis and osteomalacia. If, as seems likely from recent research, the major calcium deficit occurs in a 2-3 year period following the menopause, and it is this which is the major cause of osteoporosis, it may be that we would be better to direct our attentions to the middle-aged, to prevent the condition occurring in old age.

A positive correlation between osteoporosis and femoral neck fractures is not in doubt. Also, the ability of the surgeon to replace hips and other disease damaged joints with appropriate prostheses represents a considerable advance in the management of orthopaedic problems of the elderly. Collaboration between the specialties of orthopaedic surgery and geriatrics is thus important and the establishment of joint units may be an advantage.

The use of urodynamic methods to study the problem of incontinence has been developed by Brocklehurst⁸ and we now realise that incontinence should never be accepted as synonymous with old age. It is a symptom of pathological change which has occurred either in the bladder itself, the bladder outlet or in the nerves controlling the bladder. When the patient's mechanical problem has been defined, treatment can often be successful, or a management plan can be constructed which will enable the patient to remain continent and dry.

A clear definition of what is normal and abnormal in old age is essential. Progress in that direction has been made through studies in many countries^{9,10}. For example, the nomograms constructed by the Gerontology Research Centre in Baltimore, U.S.A. enable us to measure the physiological performance of ageing patients against a given age adjusted standard. In Britain the work of the Scots has been pre-eminent^{11,12,13} and have helped delineate the extent of anaemia, iron deficiency, dietary state, postural hypotension and the various parameters of the electrocardiography among the elderly. We now have a much better idea of what is normal and abnormal in old age and it seems

logical that a specialty of "Eld Health"¹³ at the end of life should mirror a specialty of Child Health at the beginning of life.

Various workers have also begun to look at some of the physiological parameters which exist in aged man. Woodruff and Birren¹⁴ have suggested that the central nervous system has a reverse plasticity which can be trained so that the performance of the individual is improved. Although physical capacity diminishes with age, there seems to be a good chance that appropriate retraining programmes can similarly improve exercise capacity, and also metabolism, increasing the oxygenation of the blood and, consequently, the tissues.^{15,16}

The importance of vitamin C levels in the prognosis of the elderly sick has been stressed by Wilson and his colleagues¹⁷ who have shown that low levels are associated with increased mortality. The reasons for this are as yet uncertain and further explanation is necessary.

Other metabolic problems have also been studied. Judge and his colleagues¹⁸ have clearly shown that potassium intake in old age is frequently low and consequently body potassium levels are diminished. He has also shown¹⁹ that grip strength may be a reasonable indicator of body potassium levels.

It is clear now that many drugs are handled differently by the elderly, especially drugs handled by the liver *c.f.* the biochemical parameter of ageing proposed by Adelman²⁰ in relation to hepatic enzyme modification with age. The proper use of potent drugs in the elderly has revolutionised their life and the use of L-dopa in the treatment of Parkinson's disease is an excellent example. The whole field of therapeutics in the elderly is one which justifies special knowledge and study.²¹

Rehabilitation

Following on the definitive work of Marquardsen²² and the example of Adams²³ in Belfast, Isaacs in Glasgow has demonstrated the value of a Stroke Unit in the rehabilitation of those patients disabled with the paralysis following stroke illness. Like Adams, he has clearly demonstrated that the team approach to the rehabilitation of the stroke patient will achieve much more than traditional methods. This has led the Geriatric Sub-committee of the Royal College of Physicians (London) to suggest²⁴ that experimental Stroke Units should be set up. In Southampton we have developed a locomotor rehabilitation unit which not only deals with the stroke patient but also with those suffering femoral neck fractures and with the arthritic. This development is just beginning and has the active support of the orthopaedic surgeons and the Europe Professor of Rehabilitation Medicine, whose Chair is in our faculty. We believe that it will thus be possible to bring to bear all modern concepts of rehabilitation, including bio-engineering techniques, for the benefit of the elderly patient.

Extended Care

Geriatric clinical medicine not only deals with recoverable illness and rehabilitation in the elderly, but also with the less glamorous task of dealing with medical failures. These are

those elderly patients for whom recovery in the ordinary sense of the word is impossible. In many ways they represent our greatest challenge. Clinical science and medical science have failed. The problem is to enable these individuals to obtain the maximum satisfaction from life in spite of their disability, brain damage and illness. In many parts of the world, they remain ignored and totally neglected. (Indeed, some governments will give increased subsidies for the care of these individuals if they are bedfast, thereby encouraging doctors and nurses to keep them in bed, even if sedatives must be used to achieve this.) In Southampton we believe that these individuals can, if encouraged, help themselves and participate in life. The key phrase is self-help and participation. Institutionalised patients will usually do as they are told. It is easiest for them to do this. Indeed when challenged to decide a course of action for themselves they become stressed and will frequently decline to participate. Yet with encouragement they are capable of a considerable degree of self-determination and are able to fulfil to a greater or lesser extent that which has been described as the fourth need of the elderly,²⁵ the spiritual need, the scope for continued personal development.

Future Prospects

Geriatric medicine has to face two major challenges in the future. The first of these is to expand our knowledge of the physiology and pathology of old age by ethically acceptable means. The use of non-invasive techniques can be especially useful. A method of measuring cardiac output has recently been described by Caird,²⁶ who has also described the use of computerised transverse axial tomography (EmiScan) in the diagnosis of brain lesions.²⁷ Total body scanning by this method is already possible.²⁸

The second major challenge is to consolidate the position of Eld Health as a major scientific discipline such that disease which affects the elderly may be further studied. It has long been recognised that ill health breeds ill health and an increased rate of ageing. In our own extended-care experiment it has been interesting to note that the death rate among our patients has dropped to under 25% per annum. This is in a hospital population of chronic sick with an average age of over 80 years.

Ill health in the elderly is often associated with psychiatric illness.²⁹ Since there is good clinical evidence to suggest that sensory deprivation predisposes to both mental and physical ill health, a careful study of the effect of various sensory deficits is of prime importance, particularly those of the auditory or visual senses.

If vision and hearing can be preserved there is no doubt that the quality of life of many elderly patients will be greatly improved.

Presbycusis is an extremely common disability and up to a third of the elderly may be significantly affected. It results from degeneration occurring in the outer hair cells of the cochlea. This loss probably begins at birth, or even in utero. There is no doubt that his problem will increase in the future, owing to the damage sustained by the current younger generation from attendance at discotheques and pop

concerts.³⁰ Audiology services for the treatment of presbycusis are almost negligible in most civilised countries, yet this disability probably has a greater effect on the mind than any other, and its sufferers generally receive less sympathy than others. Better hearing therapy services, and wider education about deafness are needed. This should be within the reach of all societies.

In ophthalmology, the advent of light coagulation represents an enormous advance. However, at present this has been relatively little used in the treatment of some diseases which cause blindness in old age. Senile macular degeneration can be treated and halted by light coagulation of the retina. The study of this condition however, is as yet in its infancy and the early diagnosis and treatment represent a considerable challenge.

Similarly, brain failure represents a common disability which gives rise to much suffering to the afflicted and others in contact with them. Comparative morphological studies suggest that the cause of pathological changes of the Alzheimer type may be a slow virus or self-propagating misspecified protein. Cure at present seems unlikely.³¹ While the search for a chemotherapeutic agent must continue, better management can be achieved as the result of the organisation of appropriate community supportive services. It has been clearly shown that many patients can be treated effectively and their relatives supported so that the frequency of hospital admission is reduced.³² This is an approach which should be used more widely.

Atherosclerosis with its associated occlusive thromboembolic vascular consequences remains a major cause of morbidity. Ageing, stress, smoking, perhaps diet and the pill, are among the predisposing factors. There is little doubt that health education in relation to diet, smoking, and how to cope with stress, lessen the extent of atheromatous lesions. This represents one of the major challenges in preventive medicine for if we can reduce the incidence of so-called degenerative vascular disease, then we will go a long way towards reducing the morbidity which occurs in old age.

The comprehensive discipline of Eld Health can meet the challenges of the future and, by epidemiological and comparative demographic studies, suggest methods of promoting well-being and preventing disability in the elderly. In the same way as child health is intimately linked with the education of those who deal with the young, so Eld Health should relate to education about old age. This should include the involvement of the specialists engaged in Geriatric Medicine and Gerontology in all levels of education — schools, undergraduate, postgraduate, adult pre-retirement and post-retirement as well as in the organisation of society and the development of community health.

If Geriatric Medicine is to meet its challenges appropriate facilities are needed. These should include beds and outpatient clinics for the practice of the internal medicine of old age; beds and day hospitals for rehabilitation, and beds and community service organisations for extended care. These facilities must be sited alongside other medical services in district general hospitals and community hospitals

as appropriate. Finally, Geriatric Medicine must take its place in Medical Faculties alongside the other medical disciplines.

This has been achieved in the United Kingdom. The first chair of Geriatric Medicine was created in Glasgow in 1965 and is held by Professor Sir Ferguson Anderson. Similar chairs have since been created in nine other Universities in the United Kingdom and more are planned. Experience in these schools has shown that there is no doubt that Geriatric Medicine has come to stay and that both undergraduates and postgraduate students are interested in the subject and enjoy the work. One problem however, is that the specialty has expanded so fast in the last ten years that there are now few trained persons available to fill academic and other positions throughout the country. As a consequence, career prospects are extremely good and this trend is likely to persist.

Geriatric Medicine is also beginning to develop in Canada. A Director of Geriatric Services has been appointed at the University of Western Ontario and exciting things are happening in Manitoba where Professor G. F. Adams, originator of the Eld Health concept, is taking up a new appointment. It is to be hoped that all centres in Canada and the United States will follow the excellent examples which have been set. □

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Proposed Institute on Gerontology

Craig M. Mooney,* Ph.D.,
Antigonish, N. S.

A report, entitled *Feasibility of an Institute on Gerontology at St. Francis Xavier University*, was released by Reverend Malcolm MacDonell, President of St. Francis Xavier University, on April 7, 1975. The report calls for the creation of a national institute on gerontology in Canada and proposes that such an institute be established in Antigonish as an associate body of St. Francis Xavier University.

The report is the outcome of a feasibility study carried out by five people (C. M. Mooney, K. A. MacCormick, M. MacDougall, T. R. Park, G. P. Neilson) under my direction during the summer of 1974. The study was supported by the Nova Scotia Departments of Health, Education, and Social Services in the amount of \$10,000 and by the University in the amount of \$2,500.

The idea of developing an institute on gerontology arose out of a consensus on the part of some members of the university departments of nursing and psychology concerning the need for greater scientific, professional, and technological resources in Canada for identifying the needs and dependencies of aging persons and old people in Canada and recommending better ways of meeting them.

The following summary of the main findings and recommendations of the study group is based on the Summary (Chapter 1) of the report, and on points made in the formal memorandum accompanying the submission of the report to the Honourable Marc Lalonde, Minister of National Health and Welfare, on March 17, 1975.

Nature of the Study

The study group considered that the question of the feasibility of establishing an institute on gerontology at St. Francis Xavier University hinged on two prior questions: one, the need for a national or regional institute on gerontology, and, two, the kind of institute that should be developed. It was evident that answers to these questions entailed an examination of the adequacy of gerontological resources in Canada with respect to the kinds of health, economic, and social provisions being made for old people. It was also clear that the topics and issues in this area were too numerous and complicated to be quickly or comprehensively examined and that the inquiry would have to be limited to what would be sufficient for the purpose of the study.

Accordingly, the study group did not undertake an exhaustive review of federal, provincial, and community policies and programs relating to aged persons in Canada, nor venture into parallel matters in other countries. It did not try surveying the scientific literature on aging. It did not attempt to carry out opinion-surveys or conduct other first-hand studies of the needs of old people or of services relating thereto, nor try to amass and review the original reports of the several investigations into aging done in various regions over past years. Comprehensive coverage of these matters was considered to be the proper work of a future institute on gerontology. The study group considered it

sufficient to confine itself to those authoritative summaries, responsible reviews, major reports, and other communications and publications that might provide the bulk of evidence relating to the foregoing questions.

The inquiry into the adequacy of gerontological resources in relation to health, economic, and social provisions for aged persons entailed a review of the relevant studies and reports. Most of these were procured by a letter of explanation and request sent out at the beginning of May, 1974, to some 250 government departments and public and private agencies across Canada. Analysis of this information proceeded along three main lines, (i) health and medical provisions, (ii) economic and legal provisions, and (iii) quality-of-life provisions.

The inquiry into the matter of a model national or regional institute on gerontology entailed a review of information concerning representative institutes in the United States, examination of an exemplary Canadian institute (on mental retardation), and discussions with consultants familiar with the development, organization, and work of such centres. (Proposed visits to two major gerontology centres in the United States had to be postponed because of their summer recess.)

General Findings

The study revealed numerous shortcomings and deficiencies in benefits and services for old people that might be remedied by greater use of scientific, professional, and technological specialists in aging. It found that such specialized resources are largely lacking in Canada; there are few specialists in gerontology and geriatrics; little research is being done on either the bio-medical or psycho-social aspects of aging; there is a lack of well organized professional bodies and voluntary associations working to improve conditions of life in old age; there is no national bureau on aging; major departments of government, such as Health and Welfare Canada, lack special sections or senior consultants having primary responsibilities for the well-being of senior citizens; there is no national institute on aging or gerontology to provide expert information and advice to public and private bodies concerned with problems of aging.

There is increasing public concern over the domestic and personal implications of aging and over the social and economic problems associated with increasing life-expectancy and the resulting increase in the proportion of old people in the population. There is increasing pressure on federal, provincial and municipal governments to provide the kinds of material benefits and personal services that they or their advisors suppose would contribute to the physical and mental health and well-being of aged persons.

In framing policies and programs for the aged, government departments and similar bodies rely for expert advice on some or all of the following resources: their own in-house advisors; independent outside consultants; special committees; extraordinary conferences or commissions. Such advisory bodies rarely have in hand scientific information and

*Associate Professor, Department of Psychology, St. Francis Xavier University, Antigonish, N.S.

technological knowledge directly applicable to the issues upon which they are to advise, and they usually lack time, inclination, or means to carry out the operational studies that would give them the requisite information and knowledge; as a result, they tend to come up with expedient solutions rather than expert answers.

The lack of scientific and technological resources for studying aging, the shortage of gerontology and geriatric specialists, the paucity of significant social science research in gerontology and the expedient nature of recommendations proffered by the usual advisory bodies, leaves Canadian decision-makers without ready and reliable means of assessing the soundness of policies and programs in the field of aging. It is not surprising that many of the economic and social provisions and health and welfare arrangements that are intended to benefit the general public are poorly designed to meet the needs of dependent persons, and that many of the supplementary provisions and arrangements intended to meet the particular needs of old people are not well designed to do so.

Most of the gerontology institutes in the United States and elsewhere seem to place main emphasis on university-centred basic research into the aging phenomenon, less emphasis on the training of gerontology specialists, and least emphasis on applied science and technology in the community services field. In view of the need to translate science into practical application, to provide expert advice and assistance to many public and private bodies, and to underwrite the training and qualifications of workers who provide services for elderly persons, the typical model does not seem suitable for a national or regional institute in Canada. The desirable model would seem to be one (not only for gerontology but for other neglected social health areas in Canada) based on the concept of national health sciences institutes (an actual example being that of the National Institute on Mental Retardation at York University).

Health and Medical Findings

Physicians, surgeons, and specialists are not trained in geriatrics and gerontology to treat aged persons and there are not many geriatric specialists to whom they can refer elderly patients. Hospitals rarely meet the special needs of elderly persons, and chronic care and rehabilitation facilities are not well designed to do so. The roles of nursing homes and homes for the aged are not clearly defined and the necessary supporting services, such as day hospitals, day-care centres, mobile clinics, and home-care programs, which would allow many old persons to remain in their homes, are almost non-existent. The needs of aged persons for certain special medical services — care of teeth, eyes, ears, feet, skin, bowels, and the like — are not being well met.

Health departments have been negligent in preventive medicine and health education with respect to elderly persons. The community-based public health clinics and mental health centres provide few special programs for elderly persons other than occasional visits by public health nurses. Despite the urgent need to develop extensive home-care programs, which have particular relevance to elderly persons, such services are still virtually non-existent in Canada. There has been reasonable attention to the value of nutrition, exercise, and recreation programs as positive health measures for the younger age-groups, but little such

emphasis with regard to older persons. Furthermore, there is little recognition by health authorities of the need for and value of counselling services and special personal and domestic services (relating to dressing, bathing, shopping, and the like) in maintaining health and morale. Many problem areas, such as accident prevention, starvation, alcoholism, mental illness, dying, and others, are receiving scant attention notwithstanding their seriousness for aged persons.

Economic and Legal Findings

Canadians who are not self-employed or self-supporting are expected to retire by age 70; most are required under pension regulations to retire by age 65; others can be compulsorily retired on reduced pensions at earlier ages if their services are no longer required or they are deemed no longer fit to perform their duties. The balancing off of rights and needs to work and to retire creates difficulties for administrators of manpower, labour, health, and social service programs, as well as for many elderly citizens. Governments provide limited assistance to unemployed or retired persons on the assumption that such persons should have been, and should be, diligent and provident on their own behalf — they should work, they should insure against unemployment, they should have invested savings for their old age. In general, therefore, welfare, retirement and old age benefits provided by the state are usually close to the subsistence level, and any margin of convenience, comfort, or pleasure has to be purchased at the individual's expense. The parsimonious provision of out-of-work and old-age benefits causes hardship to many middle-aged or elderly persons who have failed or been unable to accumulate savings, and who, through economic or legal necessity or personal incapacity cease to be gainfully employed and become dependent on minor pensions and social service or old age benefits and supplements. There appear to be inequities and anomalies in these various provisions and entitlements that would be amenable to analysis and correction.

The many rights and responsibilities of senior citizens in matters of medical care, social services, income and property taxes, employment and unemployment, citizenship, civil rights, education, criminal justice, pensions, old age assistance, and the rest, are unknown to some — perhaps many — elderly persons. The rules and regulations governing these various entitlements and obligations are sufficiently numerous and complicated to defeat the memories or baffle the minds of many old people (and maybe younger, as well). It is likely that some elderly persons are forfeiting benefits and services because they do not know about them, others are uncertain about their qualifications or unsure how to go about getting them, others find themselves in default of unsuspected laws or regulations. Those who do seek to avail themselves of due benefits and services find themselves almost entirely dependent on departmental or agency officials for fair explanation and just application of the rules and regulations in their particular cases. All of this constitutes a situation of unknown size and seriousness, meriting study with two general aims in mind: one, to evolve simplified conceptualizations of the nature of many of these benefits, so that there would be less need for legalistic and bureaucratic complication; two, to develop some system of

cost-free citizen-counselor or citizen-advocate service to relieve senior citizens of sole responsibility for fair play in these matters and ensure they will not suffer loss through ignorance or confusion or unknowingly come into default of laws and regulations.

There are a number of civil, criminal, legal, and medical problems of particular concern to old people, on which they may need first-class legal service, such as: claims for injuries suffered in accidents and assaults; opposing expropriation proceedings that would deprive them of their homes, farms, or other properties; making gifts of money or property and drawing up wills and bequests; defending against proposed certification procedures aimed at institutionalization on grounds of mental or physical infirmity; coping with problems of desertion, separation, divorce, remarriage, alimony and separation payments; and other issues on which old people are especially vulnerable. Few senior citizens are able to pay for skilled legal services, nor is it likely that the legal work involved in handling complicated questions of financial security, estate problems, personal liberty, intellectual responsibility, marital settlements, property protection, would be well handled by existing legal-aid services. The nature and extent of the needs of old people for first-class legal assistance and the feasibility of providing such service without cost to the individual merits study.

Quality-of-Life Findings

Provisions that may be thought of as contributing to the good life of senior citizens are not numerous, generous, nor widely available. These are provisions, over and above the minimum necessary health and welfare provisions, that affect quality-of-life through housing and domestic living, social life, and occupational, creative, and leisure activities.

While housing programs for old people receive increasing attention because of the increasing proportion of aged people in the population, the supply of housing units for old people falls short of need and demand. The cost of owning or renting available units exceeds the limited financial resources of many retired persons. The quality of the housing being produced for old people is frequently poor from a human engineering point-of-view, not being well-designed to accommodate the physiological and psycho-physical capacities and limitations of elderly residents, and being badly located for purposes of social living and community life. Elderly home-owners have difficulty in maintaining their homes or retaining them, due to the want of handy-man and home-maker assistance, high repair costs, and rising taxes, and many are forced to sell and seek cheaper and less satisfactory accommodation.

The psychological needs and physical limitations of elderly people receive little consideration in the design and operation of public transportation and commercial travel systems. Out-lying locations, poor bus service, indifferent taxi service, lack of public conveniences, dangerous streets and intersections, are factors that discourage many old people from venturing out to visit relatives or friends in the area, or to enjoy shops, theatres, concerts, church meetings, senior

citizens centres. The complications and cost involved in more distant travels and visits by car, bus, train, or plane daunt many older persons. Some older persons become hermits in their houses or apartments, dependent on occasional visits from relatives, friends, or volunteers from religious or charitable associations.

A serious consequence of the separation and isolation of old people from the social and cultural life of the community is their vulnerability to melancholia, depression, and other mental illnesses. Being alone, lonely, poor, handicapped by failing strength and faculties, many elderly people become prey to mental disorders and emotional disturbances that are frequently aggravated by memory losses and delusions associated with senescence and senility. While it is known that many old people, especially those abandoned by family or neglected by society, become mentally and emotionally ill, experience psychosomatic disorders, become disoriented and depersonalized, we do not have good information about the magnitude of such distressing conditions in the aged population and the extent to which they are the result of social and cultural deprivation rather than personal predisposition or age. Such information would facilitate the development of substantial and effective socialization and counselling programs for our senior citizens.

Conclusions and Recommendations

Among the foregoing kinds of problems are many that might have been avoided initially or subsequently remedied through application of the knowledge and methods of health, educational, and social scientists specializing in studies of aging. But, as noted earlier, in Canada, there are very few scientists with an interest or competence in gerontology, and among the ranks of Canadian scientists at large there are few engaged in age-related research. Missing also are the kinds of agencies and forces which, if they existed in Canadian society, might be expected to develop better public understanding of the nature of aging, healthier social attitudes towards old people, and more generous and helpful material benefits and social services for senior citizens.

The study group believed that an important first step in remedying the foregoing situation would be the creation of a national institute on gerontology, and that this should be a service-oriented centre primarily concerned with the application of science and technology in developing sound policies and effective programs in the field of aging. Such an institute would be applied social science rather than basic biomedical research, designed to provide scientific, professional, and technological information and advice on all aspects of aging to public and private bodies wanting such assistance. It would have service extensions and associate arrangements with universities to enable it to make optimum use of limited gerontological resources on a nation-wide basis and to be well aware of regional differences. The minimum essential requirements of such an institute, in terms of specialized staff and facilities, would be sufficiently large to make it both uneconomical and unnecessary to develop other such centres in Canada.

The science and service functions of the proposed institute would encompass:

- (a) Information: gathering and disseminating scientific, professional, and technological information on all aspects of aging to all public and private inquirers and users.
- (b) Research: assembling research findings relating to aging; promoting needed research; assisting in the training of gerontological specialists.
- (c) Training: assisting health, education, and social services departments and agencies in training, classifying, up-grading various categories of service personnel in nursing homes, residential centres, and other specialized facilities for old people.
- (d) Special studies: conducting statistical, demographic, psychometric, sociometric surveys and other kinds of fact-finding studies, and undertaking special research projects designed to facilitate the decisions and operations of government departments and other agencies concerned with matters of aging.
- (e) Manpower: assisting government departments and public services concerned with manpower utilization and the special employment needs of dependent and aged persons in analyzing labour needs and resources in relation to job requirements, qualifications, skills, performance standards, pay rates.
- (f) Consulting and advising: making gerontology consultants and other expert advisors available to government departments and other public and private bodies wanting information, guidance, and assistance in coping with aging problems.

With the foregoing functions in mind, and taking the recently developed National Institute on Mental Retardation, at York University, as the best possible model of the proposed institute on gerontology, the study group estimated that the initial size of the institute, at a minimum, would be nine persons, with initial operating costs (leaving aside rental or initial accommodations costs) of at least \$150,000 per annum; and that in five or six years the staff would be at optimum size, amounting to about 25 persons, requiring by that time a specially designed and equipped institute building costing between 1.5 and 2 million dollars, with total annual salaries and operating costs of about three-quarters of a million dollars.

The study group reckoned that a major institute of this kind would have far greater impact than numerous small, regional centres, and would make maximum use of limited scientific resources on a nationwide basis. It believed that if the centre was to attract able specialists and achieve excellence, it should be established in such a way as to ensure its operational and financial independence; that it should not, therefore, be owned by nor directed by a government department, science council, university, professional body, or voluntary association; it should, preferably, be established and financially underwritten as a Crown corporation or a private corporation, subject only to the terms of reference in

its act of incorporation and the governance of its own independent board of directors.

The study group believed that an institute of this kind would not be scientifically, academically, nor operationally handicapped by being associated with a small, rather than a large, university. The standard library, computer, communications, and publication services of the university could be adequately supplemented by the institute's necessary holdings of specialized science and services resources. Establishment of such an institute at a small university would be consistent with the idea of a fair distribution of national agencies across Canada and would be compatible with regional expansion policies; it would help meet the need of the small university for enhanced academic stature and scientific prestige; it would bring additional social, economic, and cultural benefits to adjacent small towns and rural communities.

Location of such an institute at St. Francis Xavier University would be mutually advantageous because of the university's traditional involvement in community health, educational, and cultural development programs both at home and abroad in fields of adult education and cooperative training, as exemplified in the work of its Extension Department (begun in 1929), the Coady International Institute (since 1960), and its Nursing Department (since 1926). The university and the institute would benefit from the positive interest of the provincial government in improving the living conditions of its elderly citizens, as exemplified in the 1972 enactment of the Senior Citizens Social Services Act respecting the provision of social services for senior citizens, and the establishment under the Act of the Nova Scotia Senior Citizens Commission to assist the government and its Departments of Health, Education, and Social Services in their undertakings on behalf of older citizens.

It seemed to the study group that there was a greater likelihood of securing support for a national institute than a local one, and that the appropriate source of support for the national institute would be the Federal Government. This supposes that the Federal Government has a latent policy, or may be prepared to adopt an active policy, for the support of the kind of national health science institute represented by the existing National Institute on Mental Retardation, the presently proposed national institute on gerontology, and other such specialized centres as might later be proposed. Therefore, the final recommendations of the study group in its formal report to the University, the Provincial Government, and the Federal Government were as follows:

- (a) That the University and Provincial Government submit a formal proposal to the Federal Government for the establishment and support of a national institute on gerontology at St. Francis Xavier University.
- (b) That, in the event of non-approval by the Federal Government, the Provincial Government seek, in concert with the other Atlantic Provinces, some degree of Federal support for developing a regional institute on gerontology.

- (c) That, failing support for a regional institute, the Province consider the practicability of developing and supporting a provincial institute on gerontology.
- (d) That, in the event of non-support at every level of government, the University take the initiative in seeking bequests and endowments from public-spirited citizens, private foundations, and philanthropic organizations, sufficient to build and operate a fullfledged institute on aging and gerontology.

The report runs to 214 pages. It is in two parts. Part I, **Science Considerations** has six chapters, namely: Summary; Aging and Gerontology Concepts; Aging and Gerontology Needs and Resources; A National Institute on Gerontology; Feasibility of an Institute at St. Francis Xavier University; Conclusions. Part II, **Service Considerations** has three major chapters, namely: Health and Medical Provisions; Economic and Legal Provisions; Quality-of-Life Provisions. Five Appendices deal with: Initial Proposal; Persons and Agencies Contacted; The Concept of National Health Sciences Institutes; The National Institute on Mental Retardation; and the International Association of Gerontology. Copies of the report are limited in number and cannot be provided freely on request, except to government and university libraries and persons and agencies primarily engaged in plans and operations in the field of aging. □

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He started to run as a teenager and has run some part of most days in the forty-five years since. It seems to me he is an outstanding witness to the idea that fitness delays aging. Of course there may be exceptions to that rule. As Damon Runyon said, "The race is not always to the swift, or the battle to the strong; but that's still the way I like to place my bets". □

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Nova Scotia Senior Citizens' Commission

George W. MacKenzie,* B.Sc., M.A., B.Paed., D.Ed.,

Halifax, N.S.

The Nova Scotia Senior Citizens' Commission was established to inquire into and advise the Minister of Social Services on the needs of senior citizens in Nova Scotia.

The Commission held public hearings in four centres of the province in 1974, at which it heard presentations from many people who are concerned about the needs of and problems faced by senior citizens.

As might have been expected, the presentations showed that there is great variation in the needs of senior citizens and their ability and resources to meet their needs adequately. Quite a number have adequate financial resources (which may, of course, become inadequate because of inflation) to provide for themselves even if their health is or becomes bad enough to require complete nursing care. They require little or no assistance from the government for their physical needs.

The others range in need from those with minor illnesses or disabilities to those who require complete nursing care. Their resources range from those whose incomes are almost sufficient to make them independent of any assistance to those who depend entirely on federal old age security, guaranteed income supplement, and such other assistance as they can get from either private or public sources. The assistance available to them from private sources ranges from complete supplementary help, usually from members of their family but occasionally from others, to absolutely no supplementary help from any private source.

Clearly, there is no satisfactory simple way to provide for the needs of this diversified group of people. What is required is a flexible program that can be modified to meet the individual needs of each person.

Constructive beginnings have been made to develop such a program. The federal old age security program consists of a fixed amount for everyone who is over sixty-five plus an income supplement which varies from zero to a maximum depending on the income of the pensioner. The provincial housing program for senior citizens provides for homes to be constructed by municipalities, with financial assistance from the province, which in turn is assisted by the Government of Canada. The amounts of rent senior citizens pay for their accommodation vary according to their incomes, and are adjusted so that all senior citizens who are able to find accommodation in subsidized homes can afford to do so.

Despite its merits, this program has some weaknesses that prevent it from adequately meeting the housing needs of all

senior citizens. First, there are not yet enough of these homes, and it is not feasible financially to construct enough to accommodate all senior citizens who now live in sub-standard housing. Second, there are many senior citizens who have lived in their own homes, which may be either owned by them or rented, who do not want to move to a large housing unit where they would be away from their familiar environment and neighbours. However, they cannot afford to maintain their homes properly or to pay the greatly increased rents they are being required to pay.

Accordingly, the Commission believes that a comprehensive housing policy should be developed which would retain the present provisions for subsidized housing and also provide financial assistance to senior citizens with limited incomes to enable them to repair their homes, or to assist them to pay the increased cost of rent. It believes such a program would be somewhat less expensive than providing subsidized housing for everyone, and it would permit a better solution for their housing needs for some seniors.

Another issue is of great concern to the Commission. This is the growing acceptance of the concept that everyone should retire from the labour force at sixty-five (or in the view of some people sixty or even fifty-five), and that they should then be supported by the government regardless of their ability to make some contribution from their own resources.

This concept appears to be based on the following assumptions: (1) older people should retire to permit younger people to advance into their jobs, (2) older people lose their ability to do satisfactory work, (3) older people will be happier if they are relieved of the demands of their occupations.

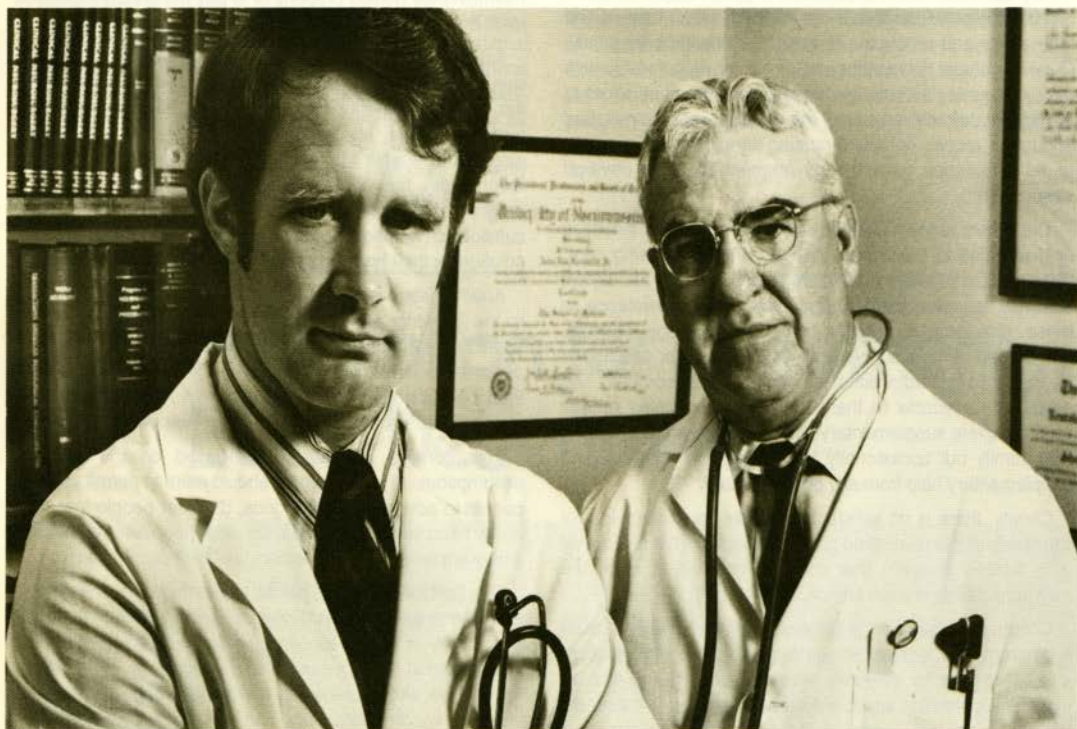
The Commission does not deny that there is some merit in all of these assumptions. However, it seriously questions the advisability of rigidly applying them to all senior citizens. It suggests that society can benefit enormously by using the knowledge, skill, experience, and general ability of its senior citizens in appropriate ways, and that the seniors would also benefit.

There are some encouraging signs that there is a trend toward retention of seniors in the work force. The federal regulations governing the Canada Pension now permit pensioners to retain their pensions regardless of what they may earn from employment. There are many examples of retired seniors who work, either part-time or full-time, in new careers, thus expanding the work force and contributing to the gross national product.

What is now required is a wider recognition by everyone, employers and seniors alike, that these human resources should be utilized for the benefit of all. □

*Chairman, Nova Scotia Senior Citizens' Commission, P.O. Box 696, Halifax, N.S., B3J 2T7. Tel. 424-6762.

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Psychosocial Aspects of Compensable Back Injuries

Robert J. Weil,* M.D., F.R.C.P.,

Halifax, N.S.

Over twenty years ago I was called by the chief of surgery to see a man who was unable to move his arm at his shoulder joint. This condition had occurred almost instantaneously following an accident which happened while the patient was employed at a construction site. Although he had been complaining about his immobile shoulder for weeks, I was able to remove this man's symptoms with hypnosis within a matter of minutes. I was just as surprised over my quick success as the staff on the patient's ward.

From that time on, I received increasing numbers of referrals from the Workmen's Compensation Board (W.C.B.). I must admit, however, that I was hardly ever as successful in my therapeutic endeavors as in the above-mentioned case.

Since 1951, I have seen about 300 patients for evaluation and/or treatment of compensable injuries. The greatest and most frequent problem encountered was that associated with back injuries in workmen who recovered slowly in spite of the absence of demonstrable organic changes.

The questions posed to me in these consultation requests were as follows: "Are the patient's complaints part of an independent psychiatric illness, such as a conversion reaction?", "Are psychiatric symptoms co-existent with the consequences of the injury?", "Is the patient a malingerer?", "Are emotional factors present as the consequences of the patient's injury, and, such being the case, are they jeopardizing his rehabilitation process?"

Initially I tried to answer these questions as asked. After I had seen a series of these patients I became more familiar with the physical and psychological phenomena associated with compensable back injuries and began to study the injured workman as a unique personality immersed in a unique work and family situation. My approach to these patients changed and so did the answers to the consultation requests.

By taking detailed histories of the complaints, the antecedents to and the nature of the accident, the immediate care received and the subsequent treatment, the course of the "illness," the patient's background, his present life situation, etc., several factors began to evolve.

My experiences with the first 51 patients referred to me by the W.C.B. — directly or indirectly — were summarized in an article published in 1967.¹ Most of these patients were unable to return to work in spite of the fact that their accidents had occurred more than one year before their referral. The history of the accidents gave us the impression that the main accident determinant resided in the victim himself. In 76% of the cases, the patient had contributed in some way to his accident. Postural fatigue, unphysiological approach to some

physical tasks, poor judgement, inattentiveness, etc., were some of the immediate causes for industrial accidents. (These findings should provide an enhanced emphasis on accident prevention.) In the majority of these patients we could not find one physician who would guaranty the continuity of care and the co-ordination of the findings from the diverse specialists consulted in these cases. Twenty of these 51 patients had one to three operations, few of them having been returned to full work capacity.

This first group of workers suffering from industrial accidents, which was referred to me, was, without doubt, a very biased sample. These patients had obvious psychological problems. However, in response to my reports and subsequent to many discussions with the medical director of the W.C.B., I began to see an entirely different group of patients. These injured workmen came to me earlier, many of them for psychiatric evaluation prior to their surgery, especially those patients in whose cases spinal surgery was suggested. Unsuccessful physiotherapy, slow recovery, continuous complaints following operations became increasingly indications for the necessity of my psychological assessment.

Amongst the conditions of injured workmen which were sent to me, back injuries had the highest prevalence. In my contacts with back-injured workers, I became aware of the magnitude of the problem back and spine injuries present to the patients, their physicians and the WCB.

The following table indicates the total number of claims for back and spine injuries as reported to the N.S.W.C.B. in the course of the last seven years as well as the percentage of back and spine injuries in relation to all reported injuries:

1968	2430	20,4%
1969	3156	12,17%
1970	3903	13,55%
1971	3716	14,47%
1972	4199	14,91%
1973	4153	19,20%
1974	4892	14,7%

Back and spine injuries have consistently been the second most frequent areas of the human body affected in compensable injuries. They are exceeded only by injuries to the hand and fingers. In terms of physical, emotional, social and financial handicaps for the patients, time loss at work, frustration for physicians and cost for the W.C.B., back and spine injuries out-distance the consequences of all other injuries.

The rest of this paper contains a discussion of my findings, including the communication problems many back-injured workmen encounter, my approach to these patients and some recommendations stemming from my experiences with them.

*Psychiatric consultant.

As I pursued my investigations, I found that many patients with compensable back injuries were victims of communication problems. The patient's interpretation of statements at the time of the accident such as "Don't move, you may have a broken back" up to the consultant's statement, "Mr. X, you may require a fusion", may significantly influence the course of his recovery and/or rehabilitation, especially if he has no opportunity to ventilate his doubts, anxiety and confusion.

The patient's concept of the anatomy of the spine and the soft tissues around the bony structures is most limited. The unsophisticated and frequently distorted image of his "backbone" structurally and symbolically often triggers off a chain reaction of responses which jeopardize patient-doctor communications and treatment results. The idea of a "broken back" for instance can initiate at times a splinting of the entire vertebral column by chronic contractions of the whole muscular erector system. When a patient has reached the stage where a fusion could be considered, he usually has been in hospitals and has acquired some ideas of what the consequences of a fusion may be. He realizes that this is a serious operation requiring long convalescence and has a very questionable outcome. While wanting to do everything the doctor recommends, his doubts and especially his ambivalences regarding past therapeutic failures, his physicians, the W.C.B., his work future and his fear of chronic invalidism associated with a reduced income, make it difficult for the patient to co-operate to the fullest.

Frequently the patient has seen a number of consultants each of whom only sees the patient once. Even if several physicians come to the same conclusion, the explanations given by the different consultants may be perceived by the patient with considerably different meanings. At times he does not receive any information about the outcome of the investigation. Such experiences are most confusing and often frustrating to the patient.

In order to illustrate some of the problems encountered in the natural histories of back injuries, let me give a brief summary of a compounded, fictitious case of back pains following an industrial injury:

A miner of about forty-five is injured in the mine in a fall of stones. His co-workers, themselves startled by the accident, try to protect the victim. They carry their colleague, who obviously had a back injury, out on a stretcher. When he gets to the surface, he tries to get up and is told he musn't. It might be dangerous. He is taken to the hospital. The receiving nurse puts him in a wheelchair. X-rays are taken; the doctor is called. The radiological findings are negative. He is put on boards for a few days and then sent home with the advice to rest in bed on a hard mattress for several weeks.

Rest and inactivity do not alleviate his discomfort. He still has pains. After several visits to his family physician's office, he is referred to a specialist, frequently away from his home community.

Intensive investigations in a strange hospital and physiotherapy follow. During the weeks of physiotherapy he is boarded in a place where other injured patients are housed for the same reason — or receive out-patient physiotherapy.

Physiotherapy conducted mainly with mechanical, non-personal methods remains unsuccessful.

He returns home unable to go back to work. He visits his physician more frequently. His complaints increase in number and emotional intensity. Unable to alleviate the patient's complaints, the medical practitioner prescribes more and varied drugs.

By this time, months have passed since the accident and the return to work has become most problematic, the financial situation has deteriorated and so has the family relationship in his home. While in the beginning of his "illness", everybody rallied around him and supported him, now his wife or another family member has to go to work in order to supplement the family's income and the patient is often left behind in charge of the more feminine duties of the household.

He becomes more anxious and tense, the back pains increase. His sleeps is disturbed by physical symptoms and anxiety dreams. He tolerates very little stress and reacts to normal household frictions with provocative irritability.

The patient's visits to his physician begin to induce in the latter a painful feeling of helplessness. Thus he sends him back to a specialist. Renewed investigations take place. Discectomy and/or spinal fusion is being considered and eventually performed. The patient, in his plight, consents willingly to any recommended surgical intervention in the hope of receiving relief from **all** his complaints — physical, mental and social.

The patient improves to a degree or not at all. In any case, his return to work, especially to his old job, has become impossible. Rehabilitative efforts on his behalf are accepted by the patient with a temporizing attitude because he cannot abandon entirely his fantasy of returning to the status quo prior to injury.

Over one year has elapsed since the accident. The equilibrium in the patient's family dynamics has changed considerably. He is relegated to a secondary position in the home. The change of his role presents a great trauma to his pride and self-esteem.

As a last effort to re-establish his illusion of his return to the past, he solicits the help of his union, politicians and/or a lawyer. He is advised to see an "independent" physician whose opinion could eventually be used against the W.C.B. In extreme cases this leads to some kind of litigation which, of course, is usually unsuccessful for the patient.

The end result of the natural history of a compensable back injury is chronic total or partial invalidism with a considerable functional overlay. Partial or full pension permits him and the family to function on a reduced standard of living which, however, is in the end less stressful than his struggle for existence prior to, as well as after, the injury. Thus the patient assumes a more comfortable position — psychologically, somatically and socially. He has acquired a new role in the community.

I have described this fictitious case in some detail in order to indicate the problems, primarily those of communication,

one encounters in dealing with compensable injuries. This was an exaggerated picture of a patient's "accident-process."² However, I am sure that most or at least some of the way-stations from accident to the resolution of the medical aspect of this case will be very familiar to the reader who has had the opportunity to see and treat compensable back injuries.

In the light of the problems met with in the above and similar cases, I have begun to pose to myself entirely different questions when confronted with a patient with the sequelae of a compensable injury. I shall quote some of them:

"What kind of a person is this patient?"

"What was his home and work situation prior to his accident?"

Had he been more anxious or depressed before the accident?"

"Had his responsibilities increased while his income remained stationary?"

"Was the accident an act of God or did the patient in any way contribute to it?"

"How did he react to the injury at the time of the accident?"

"What kind of communication problems did he encounter from the beginning of the treatment to his referral to me?"

"What kind of treatment did he receive and how did he respond to each treatment modality as well as the medical personnel who applied it?"

"What is the meaning of his symptoms and complaints now?"

"What psychiatric factors are involved in his present condition?"

"What kind of therapy or rehabilitative efforts could be recommended for this person?"

"What is his financial situation at present?"

"What is the psychosocial constellation in his home now?"

"What economic opportunities can I visualize for the patient considering his present condition and situation?"

"Have all medical efforts been exhausted and would it be more beneficial to the patient and his family to be guided into the welfare stream?"

Before describing my own approach to the psychiatric evaluation of cases of compensable back injuries, let me state categorically that such psychological investigation could and should be pursued by non-psychiatrists. In fact, no examination of such cases is complete without considering some of the questions posed above.

Most patients who are referred to me are surprised at best and at worst resentful because they were sent to a psychiatrist. "Do they think it is all in my head?" or "Do they consider me to be a malingerer?" are questions I don't hear too infrequently. In order to give these patients an opportunity to vent their hostility first, I try to clarify my position even before inquiring about their complaints. I indicate to the patient that it is not primarily my psychiatric qualification but my experiences with W.C.B. cases that induced my colleagues to send him to me. I assure the patient that, not being employed by the W.C.B., I shall evaluate his case on its own merits and, that as a physician, I have the patient's

interest in mind. Thus I have no other motives than to help him as much as I can. I promise to give him my opinion at the end of my examination and give him the opportunity to ask me any questions regarding his condition.

I then proceed to enquire about the patient's complaints. I try to find out details about the actual accident, the first symptoms. I then let the patient describe the treatment he had received so far and particularly his own interpretation of statements, comments and recommendations of the physicians who had seen him. His attitudes and responses to the accident, in terms of pain, fears, worries, etc., to first aid, to doctors, their treatment, the W.C.B., are most important. I inquire about the present family situation and what had happened to and in the family since the accidents. The next subjects of my inquiry are: past accidents and illnesses, personal history, family background, schooling, work and marriage. I put particular stress on the patient's sex life, his pre- and post-accident sexual performance. (Many patients' libido seems to have diminished before the accident a sign of a chronic depressive mood?) The financial situation, the monetary support he receives from different sources are of interest as well.

After about 25 minutes of interrogation, I proceed with a cursory physical and neurological examination.

The last 10 to 15 minutes, I reserve for the interpretation of my findings, opinions and recommendations. I present the patient with diagrams, anatomical charts and permit the patient to ask me any questions he wants to and also give him an opportunity to ventilate some of his resentments against doctors, hospitals and the W.C.B.

In the following paragraphs I will make a few recommendations which may be helpful to physicians in reaching a better understanding of patients with compensable back injuries and which may enhance the efficacy of the total management of these handicapped people.

1. The immediate assistance to back-injured workers by first aiders or by medical personnel seems to be most important. Comments made at the time of the injury may have a long-lasting effect and also may convey to the injured the insecurity and anxiety of the helping person(s). Statements like "You may have a broken back", or "You most probably have a ruptured disc", etc., may increase the patient's apprehension and consequently tension in an already tense situation in which he suffers severe pain. Therefore, beware of rash and careless statements during first aid and initial treatment, especially before the extent of the injury is established and a working diagnosis is reached.

2. The first six weeks after the injury seem to be the most important period in the recovery process of the back-injured. (A. W. M. White, 1966).³ Therefore, all conservative methods should be employed in the treatment of these cases except where there exists a definitive indication for surgery. Psychological support by all treatment personnel to the patient consisting of genuine expression of interest, frequent contact, encouragement towards physical activities at times — in spite of pain, reassurance to the patient as well as his family, members of which can frequently assist in applying simple physiotherapy to the patient.

3. Slow recovery and chronic complaints by the patient lead to frustrations, annoyance and withdrawal by the physician. Real or imagined neglect produces in the patient resentment, hostility, depression and eventually increased tension leading to deterioration of his physical condition and his emotional state. Under such circumstances, enhanced resistance to all treatment methods are not uncommon.

An introspective analysis of one's attitude towards this kind of patient may rekindle renewed interest in the physician for the patient to the latter's improvement.

4. Should the family physician decide to refer the patient to a consultant, the back-injury victim should be prepared for such a referral. He should be informed about the reason for the referral, the possible outcome and be reassured about the continuity of care by his own physician after the consultation and following the special treatment given elsewhere. I have learned on many occasions from patients that they interpret a referral to a consultant as a transfer to another, and mostly a strange physician, meaning that the original medical man has given up on the treatment. Under such circumstances, patients feel abandoned, especially when they return from the specialist and his treatment without having an opportunity to discuss the latter's findings and future treatment plans.

5. Prolonged recovery itself is not an indication for surgical intervention. Operations of frustration and convenience are destined to failure. Even if the symptoms, the physical signs and the X-ray findings appear to be suggestive of intervertebral disc disease, it is most important that the mental status as well as the social situation in which the patient lives be given full consideration. The interview with relatives is very helpful in evaluating the patient's anxiety and frustration tolerance as well as his mental stability. Psychological testing has been reported to be of some value in predicting the result of surgical interventions in intervertebral disc disease.⁴ If surgery proves to be inevitable, the patient should be given a chance to discuss the reason, nature and prognosis of such intervention.

6. Surgical follow-up after a laminectomy, fusion or other corrective surgery following back injury seems to take place only at the request of the patient, his physician or the W.C.B. and that, frequently, only after the recurrence of symptoms or unsuccessful operations.

This is a pity. Systematic post-operative follow-up of such cases could help us to learn a great deal about the efficacy of specific surgical operations for intervertebral disc diseases, their successes and their pitfalls. Surgical follow-up care would also give the patient the assurance of the specialist's interest in him as a person.

7. If physiotherapy is indicated, it should preferably be given in the patient's own community, if at all possible. The patient's milieu, activities and progress should be closely supervised. If larger numbers of patients are treated at the same centre, arrangements for group sessions should be arranged and the same be directed by a knowledgeable person. If patients are left alone, especially in strange places, such group activities will become very anti-therapeutic.

Common complaints will become compounded by loneliness, boredom, frustration, pains and alcohol.

A number of patients have related to me their irritation about the impersonal application of physiotherapeutic methods which take place without any kind of human contact. Psychotherapeutic considerations during physiotherapy associated with massage, personal supervision of exercises, etc., are greatly appreciated by patients.

8. Many patients with back injuries are seen by a number of consultants. The reports of the different specialists are primarily directed to the W.C.B. and thus are frequently not available to all other physicians who had contact with the patient. Even if these reports are distributed among these consultants and family physicians, as they often are, various and differing opinions expressed in these reports seem to confuse the issue more at times than clarify it. It is my opinion that at certain points in the natural course of the "accident-process", the physicians involved in such a case should be given the opportunity to discuss the present problems presented by the patient and to plan a rational approach to the future management in a case conference.

9. The diagnostic evaluation of back injury cases, and for that matter, in all compensation cases, takes place in doctor's offices and/or hospitals. Psychological and still less sociological data are frequently neglected. Some family physicians are thoroughly familiar with the family and social circumstances from which a patient comes. However, the majority of investigators are completely in the dark regarding these latter factors which are not only important in our diagnostic considerations but also play a large role in the rehabilitation process of the accident victim.

The employment of a social worker (rehabilitation officer) could facilitate the communication between patient, his family and the physician, consultants as well as the W.C.B. Such a person could provide information about the total course of the "accident process" from the accident until the resolution of the case. He could be most helpful in assisting the accident victim in his attempt to find again his rightful place in society.

10. For several years I have had the opportunity to confer almost weekly with a sociologist nurse and the former medical director of the W.C.B. regarding the very issues I have discussed above.

In studying the cases of back injuries which came to the attention of the W.C.B., we found that the main deficiency in assembling relevant data about this particular condition was the absence of suitable, research-oriented statistics. This is particularly regrettable since there exists such a wealth of material in the files of the W.C.B.

Epidemiological, diagnostic, comparative, therapeutic and prognostic hypotheses could be tested if the assembly of data by a computer would be directed toward research goals.

In reviewing my experiences with patients suffering from compensable back injuries, I can't help but come to the conclusion that we have not done well in our management of these patients, particularly in our attempt to return them to their original job situation.

As a psychiatrist, I am pleading for psychosocial considerations in the evaluation and treatment of these patients. I am pleading for multidisciplinary management planning and follow-up and I am pleading for intensive social rehabilitation efforts by auxiliary medical staff.

After having presented a psychiatrist's view of back injuries, may I now suggest that the psychiatrist's role in the management of such cases be completely taken over by all physicians who deal with accident victims.

Acknowledgement

The author would like to express his gratitude to Dr. A. G. MacLeod, formerly Chief Medical Officer, N.S.W.C.B., Ms. Joan Crook, R.N., M.A. and Mr. Harold Gill, Comptroller of the N.S.W.C.B., for their helpful suggestions and criticism.

APOLOGY

In the June 1975 issue of The Nova Scotia Medical Bulletin, a graph showing the supply of Canadian graduates and immigrant physicians was published. This graph was extracted from an article published in The Canadian Medical Association Journal in February 1975.

We failed to identify the authors who were Mr. Jawid Aziz, Senior Research Economist, Health Manpower Directorate and Mr. W. S. Hacon, Director General, Health Manpower, Health and Welfare Dept., Ottawa.

Our apologies are extended to these two gentlemen for this oversight.

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The Problem of Low Back Pain

D. Duncan Murray*, M.D., F.R.C.P. (C),

Halifax, N.S.

Low back pain is one of the commonest complaints dealt with in an office practice. It may be the presenting symptom of a broad spectrum of pathology, ranging from a local soft tissue sprain to an invasive or metastatic carcinoma. Accordingly, assessment must be comprehensive and include a complete history and general physical examination. An effort must be made to differentiate between local disease and local manifestations of systemic disease. One tries to make an anatomical diagnosis as well as an etiological diagnosis of the problem.

Certain structural changes take place in the spinal column during the process of aging. These changes are more pronounced at levels which have the most movement anatomically. In the lumbar spine, 60% to 75% of low back movement occurs at the L5-S1 level and 20% to 25% at the L4-L5 level. This accounts in part for the high incidence of pathology at these levels, giving rise to low back pain. In adult life the intervertebral disc undergoes a degenerative process. Degradation of the protein — polysaccharide nucleus results in a loss of its hydrophilic properties. The elastic fibres of the annulus are slowly replaced by fibrous tissue. There is a loss of disc space. Intradiscal pressure decreases and the cushion effect of the disc diminishes. The vertebral bodies are more closely approximated and there is subsequent reactive new bone formation.

With loss of disc space, the small posterior facet joints also come close together, and these small slide — and — glide joints begin to serve as partial weight bearing joints. Degenerative changes of these small joints occur including narrowing and sclerosis of the joint surfaces and reactive synovial inflammation. The joint capsule becomes relatively lax. The intervertebral foramina are narrowed by the loss of the disc space and local degenerative bone changes.

To a degree everyone's musculo-skeletal system ages, but not all people have back pain. X-ray findings of degenerative bony changes cannot always be equated with the symptom of low back pain. The degenerative changes should be regarded as a contributing factor in low back pain, rather than its only cause. With back pain of acute onset, where x-rays show degenerative changes in the lumbar spine, one has to remember that the patient had a similar x-ray picture prior to the onset of the pain, so something else must have happened. A superimposed soft tissue injury such as a ligamentous sprain is often the pain-initiating incident. Acute disc herniation with pressure on the pain sensitive nerve root is another common cause of acute pain.

*Assistant Professor, Department of Medicine, Dalhousie University, and Associate Physician, Nova Scotia Rehabilitation Centre, Halifax, N.S.

Back pain may also be due to postural insufficiency. Increased lumbar lordosis due to the forward dragging effect of a generous abdomen tends to shift the center of gravity forward. This results in an increased shearing effect at the lumbo-sacral segment with additional ligamentous loading. The posterior articulations are more closely approximated and become weight bearing, which results in synovial inflammation and pain in these joints, in addition to the ligamentous sprain.

The back examination should begin with inspection, looking for any changes in the normal lumbar lordotic curve. Range of motion should be recorded. On palpation an effort should be made to anatomically define the painful structure. Radicular signs should be sought, looking for a limitation of straight leg raising and sensory, motor or reflex changes in an appropriate dermatome pattern. Routine blood work and standard x-ray views of the lumbar spine forms part of the data base, especially in difficult cases. If there is a question of surgery, it seems reasonable to have myelography done at the discretion and direction of the attending surgeon.

The management of low back pain follows several simple principles. An accurate diagnosis is essential. Conservation measures constitute the initial approach to the problem. Complete bed rest and analgesia is appropriate for the acute stage. There is little point in prescribing medication for the "muscle spasm" often commented upon in the physical examination of the acute back. One should think of this as a secondary, protective mechanism of the paravertebral musculature to immobilize the painful segment. Treatment directed to the underlying painful pathology will subsequently relieve this muscle spasm.

As the pain decreases and the patient can tolerate movement, a physiotherapy program consisting of local heat and a lumbar flexion exercise program should be prescribed. The principles here include postural retraining and strengthening of the anterior abdominal musculature, thus decreasing the lumbo-sacral angle and resulting shear. When radicular signs are present, a trial of pelvic traction may be indicated. In those cases where degenerative arthritis of the lumbar spine is a factor in the production of back pain, anti-inflammatory medication may be a useful supplementary tool. Accompanying this, the patient must be guided with respect to a firm bed, the proper way to bend and lift, and appropriate body weight. The exercise program should be carried on at home for months after he has been discharged from his physiotherapy program to ensure that proper body biomechanics are maintained.

Degenerative changes in the lumbar spine, or postural insufficiency, may be asymptomatic prior to an episode of acute pain. Although the patient can be relieved of the acute pain fairly readily, the previous underlying biomechanical abnormalities become symptomatic and the patient is often left with a chronic back pain. Successful management must include treating the underlying biomechanical problem as well as the super-added acute soft tissue injury.

Psychological disturbances often go hand-in-hand with a chronic pain problem and an effort must be made to define these clearly, in order to deal with them as part of the overall management.

The last resort of conservative management is the back brace. Notwithstanding this, there are sound physical principals behind their design. Their aim is the reduction of lumbo-sacral motion in an attempt to reduce pain. With the Harris type of back brace, three point stabilization offers a method of supporting the hyperlordotic lumbar curve. The increased support, passively offered to the anterior abdominal wall, increases the hydrodynamic support of the abdominal tube by increasing it's wall rigidity. By cinching in the protruberant abdomen, the center of gravity is moved closer to the body center thus improving excessive lumbar lordosis. The patient must be instructed to remove the brace twice a day and carry out a lumbar flexion exercise program. In an effort to avoid a dependency situation with the brace, it

should be explained that the back brace is used as a temporary measure in the management of back pain, and a time estimate for its use stated.

There are two situations where surgery may be indicated for back pain. If, following a trial of conservative management, there are still persistant objective signs of nerve root impingement, then a surgical opinion should be sought regarding decompression. In fact, if the root signs are marked, the surgeon should be in the picture from the beginning. The other situation includes the "unstable" back wherein, as a result of either a congenital malformation or severe degenerative change, excessive, painful movement of a segment can be demonstrated. If conservative management has been unsuccessful in controlling the discomfort, surgical stabilization should be considered. □

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Each ml of aqueous parenteral solution at pH 4.5 contains: 40 mg or 10 mg (pediatric) of gentamicin base. Preservatives, methylparaben U.S.P., propylparaben U.S.P., sodium bisulfite U.S.P., disodium edetate U.S.P. Available in 2 ml multiple-dose vials and 1.5 ml Unidose[®] ampoules containing 60 mg gentamicin base/1.5 ml. Solutions are heat stable and do not require refrigeration.

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S.I.Units (Le Système International d'Unites)

M. J. McQueen,* M.B., Ch.B., Ph.D.,

Halifax, N.S.

During the early 1960's most thinking people in all branches of the basic sciences and in medicine were becoming increasingly aware of the chaotic use of quantities and units. Nowhere was this chaos more obvious than in the profusion of tests and units being produced in the expanding clinical chemistry laboratories. The confusion spread to the clinicians who helped to create the demand and were expected to assimilate the masses of data being produced. In 1966 at the 6th International Congress of Clinical Chemistry a rationalised system of units was approved by the International Federation of Clinical Chemistry (IFCC). The following year the recommendations were accepted by the International Union of Pure and Applied Chemistry and were subsequently published.¹ Various international associations have also published detailed reports.^{2,3,4,5} The recommended units are based on the metric system and represent another step towards our adoption of metric units of weights and measures.

Although twenty-five national associations of Clinical Chemistry have accepted these recommendations, there have been varying degrees of enthusiasm for their implementation. The Scandinavian countries and Holland have completed the introduction of the units. Australia recommended their introduction from the middle of 1973 and the United Kingdom is in the early stages of the change-over which is expected to be completed by Autumn 1975. Less enthusiasm has been evident in North America, but in the U.S.A. the American Association of Clinical Chemists and the American Society of Clinical Pathologists both approve of the S.I. System of reporting data. The National Committee for Clinical Laboratory Standards (U.S.A.) are also considering promoting the system for reporting laboratory results. In June 1971 the Metric Commission (Canada), which reports to the Minister of Industry, Trade and Commerce, was established to implement conversion to S.I. as a definite objective of government policy.

The advantages and problems of the system have been reviewed by several authors.^{6,7,8,9} It is hoped that a reduction in confusion will result when all branches of medicine and science are speaking the same language. The departure of many empirically developed units will prevent misunderstanding of results and will enable the medical practitioner to focus his attention upon the values presented, rather than upon the units. A long-term aim is comparability in medicine of all numerical information on patients, but the adoption of common units can only be considered as one step towards this last goal. True comparability will be achieved only with the adoption of common methods. This last goal will be much harder to achieve than a uniform system of units. The underlying theme of the system has been to provide a

coherent system which will limit the number of multiples and sub-multiples in common use. The product or quotient of any two unit quantities is the unit of the resultant quantity without introducing any numerical factor e.g.

$$\text{unit area} = \text{unit length} \times \text{unit length}$$

$$\text{unit velocity} = \text{unit length} / \text{unit time}$$

Apart from being able to use the data presented by the laboratory for patient management, all medical practitioners will have to understand S.I. units if they are going to understand American and European medical journals. This applies equally to journals which reflect general and specialist interests. The impact of the units will be felt most substantially in reporting biochemical and haematological results produced in hospital laboratories. The staff of these laboratories will bear the first impact of the changeover. As a result, their experience should greatly assist their clinical colleagues in the transition to S.I. units.

TABLE I
Basic S.I. units.

PHYSICAL QUANTITY	BASE UNIT	S. I. SYMBOL
LENGTH	metre	m
MASS	kilogram	kg
TIME	second	s
AMOUNT OF SUBSTANCE	mole	mol
THERMODYNAMIC TEMPERATURE	kelvin	K
ELECTRIC CURRENT	ampere	A
LUMINOUS INTENSITY	candela	cd

System Structure

The international system of units has seven basic units (table I). All measurements in the S.I. scheme can be referred to these units. Even the spelling of the units and the symbols for the measured physical quantities have been carefully defined and accepted by the professional groups referred to earlier. However, unthinking dogmatism has not been the keynote of the discussion and planning of the system. While the base unit for temperature is the kelvin, it has been recognized that is is not practical to abandon Celsius (Centigrade) temperature and this is an acceptable unit which has been defined in terms of the thermodynamic temperature.

Any physical quantity can be expressed in S.I. units by appropriate combination of the base units. Volume can be derived as metre cubed (m³), the unit of velocity is metre per second (m/s or m·s⁻¹), mass concentration is kilogram per metre cubed (kg/m³ or kg·m⁻³), substance concentration is

*Assistant Professor, Department of Pathology, Dalhousie University and Director, Clinical Chemistry, Camp Hill Hospital, Halifax, N.S.

mole per metre cubed (mol/m^3 or $\text{mol}\cdot\text{m}^{-3}$) and reaction rate is mole per second (mol/s or $\text{mol}\cdot\text{s}^{-1}$). It was recognized that while the cubic metre was the correctly derived unit of volume, it was much too large for clinical laboratory work. The litre (one cubic decimetre) is recognized as the unit of volume and is used as the reference volume in clinical laboratories. Mass concentration is therefore expressed as kg per litre (kg/l or $\text{kg}\cdot\text{l}^{-1}$).

The next problem to be faced relates to the use of decimal multiples or submultiples. If base units alone were used they would be capable of producing data with numbers which were unmanageably large or small. The base units may be altered so that measurements can be reported in an order of magnitude change of 10^3 . The prefixes which form the decimal multiples and submultiples are listed in table II. They will be familiar to most clinicians even though they may not yet have a practiced facility in using them. The most widely used prefixes are kilo (k), milli (m), micro (μ), nano (n), and pico (p).

TABLE II
Decimal multiples and submultiples.

MULTIPLE	NAME	SYMBOL
10^{12}	tera	T
10^9	giga	G
10^6	mega	M
10^3	kilo	k
10^2	hecto	h
10^1	deca	da
10^{-1}	deci	d
10^{-2}	centi	c
10^{-3}	milli	m
10^{-6}	micro	μ
10^{-9}	nano	n
10^{-12}	pico	p
10^{-15}	femto	f
10^{-18}	atto	a

Earlier it was stated that any physical quantity could be expressed in S.I. units by appropriate combination of the base units. Some of the derived S.I. units have special names and symbols which are used in place of their full expression in terms of S.I. base units or derived units (table III).

TABLE III
Special names and symbols of derived S.I. units.

DERIVED UNITS	NAME & SYMBOL	EXPRESSED AS S.I. BASE UNITS OR DERIVED UNITS
FORCE	newton (N)	$1\text{N} = 1\text{kg}\cdot\text{m}\cdot\text{s}^{-2}$
FREQUENCY	hertz (Hz)	$1\text{Hz} = 1\cdot\text{s}^{-1}$
WORK, ENERGY, QUANTITY OF HEAT	joule (J)	$1\text{J} = 1\text{N}\cdot\text{m}$
POWER	watt (W)	$1\text{W} = 1\text{J}\cdot\text{s}^{-1}$
PRESSURE	pascal (Pa)	$1\text{Pa} = 1\text{kg}\cdot\text{m}^{-1}\cdot\text{s}^{-2}$
QUANTITY OF ELECTRICITY	coulomb (C)	$1\text{C} = 1\text{A}\cdot\text{s}$
POTENTIAL DIFFERENCE, ELECTRIC POTENTIAL, ELECTROMOTIVE FORCE	volt (V)	$1\text{V} = 1\text{W}\cdot\text{A}^{-1}$
ELECTRIC CAPACITANCE	farad (F)	$1\text{F} = 1\text{A}\cdot\text{s}\cdot\text{V}^{-1}$
ELECTRICAL RESISTANCE	ohm (Ω)	$1\Omega = 1\text{V}\cdot\text{A}^{-1}$
MAGNETIC FLUX, FLUX OF MAGNETIC INDUCTION	weber (Wb)	$1\text{Wb} = 1\text{V}\cdot\text{s}$
MAGNETIC INDUCTION, MAGNETIC FLUX DENSITY	tesla (T)	$1\text{T} = 1\text{Wb}\cdot\text{m}^{-2}$
INDUCTANCE	henry (H)	$1\text{H} = 1\text{V}\cdot\text{s}\cdot\text{A}^{-1}$

The newton (n) is the new derived unit for force and is that force which gives a mass of one kilogramme an acceleration of one metre per second squared ($1\text{N} = 1\text{kg}\cdot\text{m}\cdot\text{s}^{-2}$). The unit of pressure is the pascal (Pa) and one pascal is the pressure exerted by one newton acting on an area of one metre squared ($1\text{Pa} = 1\text{N}\cdot\text{m}^{-2}$). Eventually the pascal will replace the wide range of pressure units used by different medical and scientific disciplines. Initially its use will be in giving blood gas measurements in S.I. units (kPa) and it will be used in medical literature for expressing blood pressure. It is recognized that clinical convenience and the time it will take to replace or modify existing instruments will ensure that expressions such as mmHg and cmH_2O will remain in use for a considerable time.

Normal Ranges

The S.I. unit for concentration (amount of substance) is the mole, that is the amount of substance with a mass equal to the molecular weight expressed in grams. For substances where the molecular weight of material being measured is unknown or uncertain because the material is a component of a mixture, the units will be in grams or milligrams per litre. Several recommendations have been made as to the best way to report enzyme results within the S.I. terminology. However, there is no real agreement on this and in countries where S.I. units are in routine laboratory use they continue to use conventional International Units (U/L). The International Unit of enzyme activity is defined as that which transforms one micromole of substrate per minute under the prescribed assay conditions.

A number of common clinical laboratory tests are listed in table IV to illustrate how some normal ranges will look when

converted into S.I. units.

Total protein cannot be measured in moles per litre because it consists of several components, but albumin can because its molecular weight is known. It is recommended that albumin should be expressed in grams per litre so that its concentration can be compared with the concentration of other proteins, as in electrophoresis. It can also be readily seen from table IV that for monovalent ions e.g. K^+ , one mole is numerically the same as one equivalent.

TABLE IV

Normal ranges expressed in conventional and S.I. units.

TESTS	MOL. WT OR ATOMIC WT	FACTOR TO CONVERT CONVENTIONAL UNITS TO S.I.	NORMAL RANGES	
			CONVENTIONAL	S.I.
BILIRUBIN (TOTAL)	344.7	17.1	0.2 - 1.0 mg/100 ml	5 - 17 μ mol/l
CALCIUM	40.08	0.25	8.5 - 10.5 mg/100 ml	2.1 - 2.6 mmol/l
PCO ₂		0.533	34 - 40 mm Hg	4.5 - 5.3 kPa
CHLORIDE			95 - 105 mEq/l	95 - 105 mmol/l
CHOLESTEROL	386.7	0.026	140 - 200 mg/100 ml	3.6 - 5.2 mmol/l
CORTISOL	362.5	27.4	10 - 20 μ g/100 ml	280 - 550 nmol/l
CREATININE	113.1	88.4	0.7 - 1.4 mg/100 ml	60 - 120 μ mol/l
GLUCOSE	180.2	0.055	55 - 85 mg/100 ml	3.0 - 4.7 mmol/l
MAGNESIUM	24.31	0.411	1.8 - 2.4 mg/100 ml	0.7 - 1.0 mmol/l
PO ₂		0.133	90 - 110 mmHg	12 - 15 kPa
PHOSPHATE (Inorganic P)	30.97	0.323	2.5 - 4.5 mg/100 ml	0.8 - 1.6 mmol/l
TOTAL PROTEINS	66.1	16.6	6.2 - 8.2 g/100 ml	62 - 82 g/l
URATE		0.095	2 - 7 mg/100 ml	0.1 - 0.4 mmol/l

Practical Effects of Introducing S.I. Units

The use of the mole expresses amounts of substance in terms that are biologically relevant. It will certainly be much easier to establish quantitative relationships between a constituent which is to be found in more than one body fluid compartment. Components of a metabolic cycle can readily be related to other members of the cycle. It is possible that more meaningful relationships may become apparent among the various components of protein anabolism and catabolism; chemical reaction sequences produce compounds according to molar amounts present and not according to their mass amounts.

Laboratories will have to be prepared to master the changes and to participate in educating others. New standards will have to be prepared for most analyses and a laboratory which uses a computer may find some difficulties in adapting the programme to the new units. There may be areas which present more difficulties than others and it will be essential that no one goes looking for problems where they don't exist. It is surely alien to our training to act as though medical science was a static phenomenon. There is no reason to believe that S.I. will not continue to undergo gradual adaptation and change in response to the input from many countries and disciplines.

The reports from countries which have already changed over are encouraging in that practically all laboratories reported no really big problems had been discovered. Laboratory personnel as well as clinicians rapidly became accustomed to the new units. Many clinicians have expressed their concern over the interpretation of blood

sugar results when the normal range of glucose is expressed as 3.0 - 5.0 mmol/l (table IV). In practice it has been found relatively easy to extrapolate the decimal point and establish a new mental relationship between the number and the physiological or pathological state. It is important that preparations should be made locally to meet the impact of the changes, new normal ranges publicised and tables of conversion factors prepared for distribution to doctors and students. Most typewriters at presently in use in hospitals could cope with the changes, the only alteration really needed is that they should be fitted with the symbol ' μ ' (micro) so that no confusion arises from the use of small 'u'. Experience elsewhere suggests that after considerable advance publicity there should be a fixed date for the changeover. There appears to be no advantage in reporting in both old and new units.

Summary

To reduce confusion in measurement in medicine a rationalized, metric based, system of units (Système International d'Unites) has been proposed and has received international support. This system has already been implemented in many European countries and in Australia, and is beginning to be introduced in Canada and the United States. In order to read the medical literature all practitioners will have to be familiar with the S.I. units. The reasons for the change and the system structure are presented in detail. A number of common clinical laboratory tests are used to illustrate how some normal ranges will look when converted into S.I. units. The practical effects of the introduction of the system are discussed and it is stressed that great care must be taken to educate all those who will be affected by the changeover. □

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Dalhousie's Medical Women

A SURVEY OF GRADUATES 1964-1973

J. Fraser Nicholson,* B.Sc., M.D., C.M.(Dal.), F.R.C.P.(C),

Halifax, N.S.

In recent years increasing numbers of female students have applied and been admitted to this Faculty of Medicine and most other medical schools. As a result, some criticism has been levelled against the Faculty admissions policy for setting no quota for female medical students. Critics cite the usual concerns; women doctors soon marry, and are often lost to wifely and marital pursuits. Thus they are not available to provide medical care. In response to this criticism, the Admissions Committee of the Faculty of Medicine requested a study of our own female graduates to assess their activities after graduation.

Dr. C. B. Stewart's study (done in 1966) covering the years 1947 to 1963 showed that all 45 graduates from those years were in practice, hospital work, or teaching (unpublished material). Other studies^{1,2} have indicated that female doctors engage in medical work at 80 to 90% of the level of their male counterparts. Since they live and work longer, it is reasonable to assume that over their life span they accomplish at least an equal volume of medical work.

The present study examines the question in some detail for the years 1964 to 1973 inclusive. The 60 female graduates of those years were asked to complete a mailed questionnaire concerning their marital and maternity status, occupational history since graduation, income, and future plans. It is gratifying to report that 56 responded by completing and returning the questionnaire.

General Data

Of the 56 respondents 33 were married (18 to doctors), 19 were single, and 4 were divorced or separated. Altogether they had 56 children. Data on occupational status showed 33 in general practice, 13 in a specialty, 9 in residency training, and 1 in non-medical work. 55 of the 56 indicated that their future plans are for full time medical work.

Employment History and Present Status

The 56 respondents worked 88.4% of the maximum number of possible years since licensure (84.5% for years 1964-66; 71.6% for years 1967-69, and 96.8% for years 1970-73). At the time of the survey 80% were employed full-time, 18% part-time and 2% (1 person) in non-medical work. Of the part-time doctors, all indicated maternity or more usually child care as the reason. It is noteworthy that 9 of the 30 doctors with children had taken no time from medical work (except vacations). If we assumed that all the children were born post licensure (only approximately true) we could calculate that 7.4 months per child were taken off from medical work.

It has been suggested that female doctors spend less time than male doctors in direct patient care. But our single female graduates spend an average of 55 hours/week in direct patient care and the married graduate averages 29 hours/week. A.M.A. data for all classes of physicians in the U.S.A. in 1973 showed 48.7 hours/week.³

Income

Of the 37 doctors employed in full-time medical work (excluding those in residency), 11 earned between \$20,000 and \$30,000 per year and 16 earned over \$30,000. (Average practising physician earnings before taxes and expenses for 1974 in Nova Scotia were \$35,093.)⁴ There was a slight tendency for the recent (1971-1973) graduate to earn more than the others.

Present Location

The data suggest that female graduates are likely to settle outside the Maritimes, at least temporarily (Table I).

TABLE I
Place of Residence 1974

Years	Maritimes	Other Canadian	Elsewhere
1964-1969	10	6	10
1970-1973	22	8	3

Three of the graduates came from other Canadian provinces and 6 from other countries. None of these women has located in the Maritimes. Seven of the nine graduates in residency programs are completing their studies outside the Maritimes but some plan to return.

Of the 103 female physicians in Nova Scotia in 1973 (8.4% of the total), 83 were in general practice and 20 were in specialty practice. Dalhousie graduates numbered 45, 15 were from other Canadian medical schools, and 40 were from schools outside Canada.⁵

The overall picture suggests a real increase in the number of female physicians (in Nova Scotia at least) both in number and in relation to their male counterparts over the years in question (In 1967, 59 female physicians were 6.3% of the total and in 1973 as above). Comparable data for the U.S.A. showed females 6.3% of the total number of physicians in 1963 and 8.4% in 1973.⁵

Post Licensure Training

Of the 25 graduates of 1964-1969, 17 had an average of 4.1 years of graduate training (overall average 2.8 years).

*Assistant Dean, Faculty of Medicine, Dalhousie University, Halifax, N.S.

Ten of these have become certified specialists — four in psychiatry, three in internal medicine and one in each of ophthalmology, pediatrics and obstetrics/gynecology.

Conclusion

It is clear that female graduates of Dalhousie spend about 90% of their first ten post licensure years in medical work and most of this (about 40 hours/week) in direct patient care. It is likely that these proportions will increase as the child bearing and caring years pass.

Our study demonstrates that the present policy of the Admissions Committee regarding admission of female medical students is justified. □

Acknowledgements

My sincere thanks to Dr. M. G. Brown for his assistance and valuable advice in designing the questionnaire and to Dr. K. L. Weldon for his expertise in extrapolating and arranging the data.

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Physician Self - Assessment

Lea C. Steeves, M.D.,
Halifax, N.S.

The following questions have been submitted by the Division of Continuing Medical Education, Dalhousie University, and are reprinted from The American College of Physicians **Medical Knowledge Self-Assessment Test No. 1** with the permission of Dr. E. C. Rosenow, Executive Vice-President.

It is our hope that stimulated by these small samplings of self-assessment presented you will wish to purchase a full programme.

DIRECTIONS: Each of the questions or incomplete statements below is followed by five suggested answers or completions. Select the ONE that is BEST in each case.

16. Complete abdominal vagotomy may be followed by all of the following EXCEPT
- (a) diarrhea
 - (b) steatorrhea
 - (c) gastric retention
 - (d) dysphagia
 - (e) atrophy of the pancreas

(Please turn to page 147 for answers)

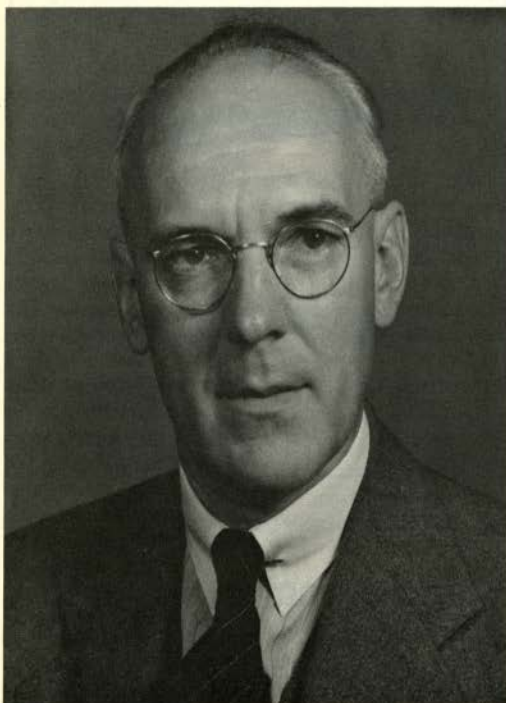
□

APPRECIATIONS

*"For their work continueth, and their work continueth,
Broad and deep continueth, greater than their knowing."*

Rudyard Kipling

James W. Reid



The sudden death of Dr. J.W. (Jim) Reid took from the Medical Society of Nova Scotia perhaps its most beloved member. During a long professional life in this province Jim Reid demonstrated the highest devotion to the best of medical life — ethically, in high quality care of patients and in the teaching of young physicians.

Born in Windsor, he graduated in 1926 from the Dalhousie Medical School with an enviable record including being one of the charter members of Phi Rho Sigma Medical Fraternity. After a short time in Family Practice he felt the need for further education and proceeded to London. Here he was one of the earliest graduates of Dalhousie to obtain the prestigious membership of the Royal College of Physicians and Surgeons of London. This degree opened doors for him in any part of the world — he chose to return to Halifax and to the Department of Medicine at Dalhousie and remained here as an outstanding teacher, outstanding physician and an outstanding citizen. He lived his life presenting a model

Garnett W. Turner



Dr. Garnett Turner was one of the last of the great solo General Practitioners who did everything very well. He was Gold Medallist in his class and was a prodigious reader as well as worker. He was an excellent obstetrician, a good surgeon and a keen clinician. One statistic: in his obstetrical practice he delivered over 8,000 babies. He had a kindly and friendly manner to all. So many of his patients would say, "how can he take so much time with me when there are so many patients in his waiting room?" He had that great quality of seeming unhurried and undisturbed no matter what the problem he had to face. He was calm and collected at all times. Indeed it was a rarity to see him ruffled about things medical — the original Mr. Cool to both colleagues and to patients.

Garnett knew his patients well and could readily see through the "complaint" that brought them into his office and in this way was able to counsel these patients in all manner of complaints, psychiatric and otherwise. He was a great

James W. Reid

marked by a rare blending of the art of medicine with full use of the new science, but above all a medical career marked by humanity and love. Any one of these aspects of Jim's character and life could be elaborated on at great length.

His patients will mourn the loss of a dearly beloved physician; Dalhousie the loss of a great teacher; the members of The Medical Society of Nova Scotia will mourn the loss of one of its senior members, who possessed great professional ability, but more than that was an industrious man who gave of himself that his colleagues might have the opportunity to provide the highest quality of medical care for their patients despite the many changes that occurred during his lifetime.

As a President of this Association in 1952 he gave tremendous leadership through troubled times. Despite the heavy demands of his practice he always found time to sit on committees, attend executive meetings and do the thousand and one things necessary to further these objectives. To the remaining few who spent hour after hour with Jim on the old special research committee that for years seemed to meet every Saturday and Sunday and that produced a good deal of the planning that molded the current system of medical care in this province, Jim remains an inspiration. He had great knowledge of the needs of doctors and patients. He spent much time informing himself of patterns of medical care throughout the world. He was a leader in discussion and debate and his witty summaries frequently broke bitter deadlocks, both within the committee and even more bitter deadlocks with our governmental lords and masters.

Above all, we admired his integrity, his determination to consider any suggestion fairly and in full measure and to make his decision in terms of the contribution of that suggestion to the provision of the highest quality of medical care. The younger physicians of this province may thank whatever gods there are that Jim Reid lived among us and influenced so markedly the conditions under which they now can care for their patients. All of us in this society have a better life and are better people because of Jim having lived among us.

Much more could be said — his devotion to his family; his devotion to his church and the best of Christian values and his devotion to humanity. We of The Medical Society of Nova Scotia have lost a great leader and, for many of us, a great friend. We were happy for Jim in the great joy he got from his marriage to Mildred and through the support she gave him through many trying and difficult times. We can but extend to Mildred and to their children a very great sympathy and we join them in the sorrow of losing a man who can truly be said to have been a dearly beloved physician. □

R.O.J.

Garnett W. Turner

consultant in Obstetrics, Medicine and Surgery and was the natural Chief of Staff at the Payzant Memorial Hospital. And with all of these qualities he had a warm personality and a good sense of humour.

Many knew Garnett as an excellent doctor. Others knew him as a hard working member of The Medical Society of Nova Scotia, who gave a great deal of himself to the Society and its various committees. Others knew him as an ardent and experienced yachtsman, who was trained in navigation, but who also knew his way around the rocks and shoals of Chester, Mahone Bay and Lunenburg as well as the old rum runners. But Garnett was also a musician. While he was an undergraduate at Acadia University he was the leader of the first dance orchestra in the Cornwallis Inn for an Apple Blossom Ball. In later years he would sit in with local groups, when he could find time, and play his Tenor Saxophone. During these sessions of music reading he would become so involved in the music he would have two cigarettes going at the same time. However, this was typical of Garnett; everything he did, he did with everything he had in him. When he became President of The Medical Society of Nova Scotia in November 1971, in his short acceptance speech he promised only one thing, that he would "do his best". His best he has done.

We have lost a great colleague, one who was unselfish in giving of himself to his practice, his community, his Medical Society, his many friends and his family. Our deepest sympathy to Frances, Sandra, Diane and Charles. □

H.R.R.

To be faithful to those who are dead is not to seclude yourself in sorrow.

We must continue to plough our furrow: straight and deep. As they would have done themselves. As you would have done with them. For them.

To be faithful to those who are dead is to live as they would have lived.

To make them live in us.

To transmit their face, their voice, their message to others.

To a son, a brother or to strangers, to others whoever they are.

And life cut short in those who have disappeared will thus germinate endlessly.

— Martin Gray

Smallpox In Nova Scotia

Bertha O. Archibald,*

Halifax, N. S.

Few people know that smallpox broke out in Halifax, at least three times in the past 50 years.

In 1938, a Hindu from a freighter, which was being fumigated, fainted on the dock and was rushed to Camp Hill Hospital. Although Dr. Hugh Collins had not seen a case of smallpox before he diagnosed the case as such. The patient was immediately taken to Lawlor's Island by the immigration nurse, Miss Mary Lindsay. The patient died two days later.

For many years Lawlor's Island was the quarantine station for the Immigration Department. There were several old buildings on the island, sheds with double bunks. Those sheds were heated by coal stoves. One shed was painted red and known as the smallpox hospital. The others were the caretaker's cottage and doctor's cottage. The patient was taken to the doctor's cottage as it was not occupied.

Nine days following contact with the patient, Reginald Smith, one of the orderlies who had helped to undress the Hindu, became very ill. Dr. Murray MacAuley soon reported that Smith had smallpox. Mr. Smith was at home and two nurses from Camp Hill Hospital were sent to take care of him. He was also transferred to Lawlor's Island. Dr. Collins, Mrs. M. C. MacDonnell and Walter Wilson, the latter two members of the Camp Hill Hospital nursing staff, were instructed to take the case over, and open up the Immigration Hospital which had been closed for some time.

When they arrived they discovered that the hospital was about one-quarter of a mile from the wharf. It was a very cold day in March, and raining. The only means of transporting the patient was by means of a stretcher. When they opened up the hospital they found that the pipes were frozen, so there was no water. There were no supplies or equipment of any kind as the hospital was being dismantled. The federal government was planning to open a quarantine station at Rockhead. Retracing their steps they moved into the doctor's cottage. Water was pumped to them by the boat and this was done daily during their long quarantine.

When the quarantine boat returned to her berth at King's Wharf an orderly was there with another patient. He was the other man who helped undress the Hindu. With the new arrivals, the occupants of the cottage were now seven persons. The cottage had three bedrooms, a living room, a kitchen and a bath room. Being an overseas nurse of World War I, Mrs. Mac Donnell soon rose to the occasion. She persuaded Mrs. Martin, the wife of the caretaker, to do the cooking. Mr. Wilson was an excellent nurse and they all played their role well with courage, devotion, and ability.

There was no telephone service and the only contact with the outside world was the little boat that came every day with supplies and mail.

Every day Dr. E. Kirk Maclellan, Dr. M. A. MacAuley and Dr. P. S. Campbell would make the trip on the boat from Halifax to see how the patients were progressing.

Mr. Smith and Mr. Ligin were very, very ill for days.

Both patients recovered from the disease.

The quarantine continued through the Easter season. Many were the presents and thoughtful remembrances from their friends at Camp Hill Hospital, which included a turkey for their Easter dinner.

They went down to the island March 18 and did not return until May 10. It was a long two months' vigil.

The chief immigration officer from Ottawa visited the patients. Later Mrs. MacDonnell and Mr. Wilson received letters from Ottawa in appreciation of their faithful service. These two nurses were graduates of the Victoria General Training School.

What might have been a dreadful epidemic was averted due no doubt to vaccination. The public demand for vaccination was so great that all the vaccine in the city was used. The complete stock at the Connaught Laboratories in Toronto was also exhausted. Finally the city of Montreal came to the rescue and shipped vaccine to Halifax. People were lined up in the streets in front of the doctors' offices and the Dalhousie Public Health Clinic was equally busy.

In the winter of 1917, the year of the great explosion, smallpox also visited the city. During the year 1918-1919 there were 2,500 cases in Halifax. It was not until 1920 that the epidemic was really controlled; this was achieved through vaccination clinics. The clinic at City Hall alone vaccinated over 5,000 people.

All the doctors' offices were crowded with frightened people. General vaccination was the order from the city fathers.

The disease was brought to the city by a workman from Quebec. There were deaths from the disease but not as many as feared as it was rather a mild type of smallpox.

In 1907 the old Victoria General Hospital was quarantined for smallpox. All the non-resident staff members who happened to be on duty were quarantined with the resident staff. In those days the hospital had a church room where services were held each Sunday. In this room the quarantine staff decided to hold service.

Percy Webber, the bookkeeper, called on the old pharmacist, Dr. Charles Puttner to open with prayer. Instead of standing he knelt down beside his chair and prayed with the humility of a child for mercy and protection for them all, from the dreadful disease. His voice trembled, the tears came and the old gentleman broke down. It was a service long to be remembered. A few days later the danger had passed. □

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* Pharmacist Retired — Victoria General Hospital, Halifax, N. S.

Gardening as a Hobby

J. C. Vilbert, M.D., F.R.C.S.(C),

Truro, N.S.

After three months of drought and a destructive hurricane it is not easy to write about the pleasures of gardening in Nova Scotia. But our climate is better than that of Greenland or Baffin Island or even the Prairie Provinces and our soil is better than that of Fogo Island.

I have done most of my gardening in Nova Scotia except for a few years in Southern Minnesota where the gardener's enemies seemed to be different, but not more or less than here. Volumes have been written about gardening, even encyclopedias, and I have read most of them, (what else can a gardener do in the long Canadian Winter?) and most of what they say seems to apply here as well as anywhere.

The English are a nation of shopkeepers it has been said; even more they are a nation of gardeners. Dickens wrote of "the regular city man who leaves Lloyds at five o'clock and drives home to Hackney, Clapton, Stamford Hill or elsewhere and if he can be said to have any recreation beyond his dinner it is his garden. In fine weather he is almost constantly in the garden; and when it is too wet to go into it he will look out of the window at it by the hour. He has always something to do there and you will see him digging and sweeping and cutting and planting with manifest delight. In Springtime there is no end to the sowing of seeds and sticking little bits of wood over them, with labels which look like epitaphs to their memory; and in the evening when the sun has gone down, the perseverance with which he lugs a great watering-pot is perfectly astonishing. On a Summer's evening when the large watering-pot has been filled and emptied some fourteen times and the old couple have quite exhausted themselves by trotting about, you will see them sitting happily together in the little summer house enjoying the calm and peace of the twilight and watching the shadows as they fall upon the garden. These are their only recreations and they require no more. They have within themselves the materials of comfort and content."

Gardening can be a means of keeping physically fit and an escape for the tense and nervous and depressed. Emerson wrote: "I know no means of calming the fret and perturbation into which too much sitting, too much talking brings me so perfect as labour. I have no animal spirits; therefore when surprised by company and kept in a chair for many hours my heart sinks, my brow is clouded and I think I will run for the woods and live with the squirrels henceforward. But my garden is nearer and my good hoe as it bites the ground revenges my wrongs and I have less lust to bite my enemies. I confess at first I work with a little venom, lay to a little unnecessary strength. But by smoothing the rough hillocks I smooth my temper, by extracting the long roots of the piper grass I draw out my own splinters, and in a short time I can hear the bobolink's song and see the blessed deluge of light and color that rolls around me."

Austen Chamberlain found gardening a cure for sleeplessness. "If you find that after the worries and excitements of a busy day you are too excited to sleep when you reach your bed, if then counting sheep passing through a gate proves, as with me, of no avail and you share my incapacity for thinking of nothing, visit your garden in imagination. I have put myself to sleep night after night in this way before my head had been five minutes on the pillow or I had covered six paces of my small garden."

Perhaps we Nova Scotians will never be as avid gardeners as the English. Our climate is much less conducive. We can count on only three frost-free months and during this short period our tender plants, flowers and vegetables must live their whole life span. By using cold frames and night time cover, we can start the season a little earlier and of course, by using hot houses we can garden whenever we please. Another type of gardening that could someday become popular here, and could be carried on all Winter is woodland gardening or silviculture.

Our province has some advantages for the gardener. The climate is modified by proximity to the ocean. Fog, mist and dew help to water the plants and trees. Usually we have adequate rainfall. The soil is generally good acid woodland and marshland soil except in the rocky southern and eastern parts of the province. Limestone is cheap and animal manure is plentiful.

Most gardeners like to grow vegetables. When you taste newly picked vegetables you realize how vastly better they are than those from the supermarket even a day or two old. This, of course, is one of the secrets of great French cuisine. The delicious dinners served in Paris restaurants in the evening depend on vegetables picked that day in the little gardens and farms nearby. Pick corn or peas a few minutes before you cook them and you may as well become a vegetable gardener.

Peas do well in Nova Scotia. I think they like our cool wet Springs. Plant them as early as possible. Dig a trench and half fill it with manure and plant the peas on that. Don't use fertilizer. Plant them thick. Don't thin them. After they come up, hill a little more earth up around them. Some new hybrid varieties like Peter Pan and Little Marvel and Green Arrow do very well, and don't need staking like the old telephone peas.

Swiss Chard is another vegetable that loves Nova Scotia Summers. A few people don't like Swiss Chard but fortunately, as someone said about surgeons, who operate on heel spurs, fortunately they are in the minority. Swiss Chard will produce greens for you in June and continue producing until killed by frosts in September. The leaves may get to be two feet long and the stalks an inch or two in diameter, but both leaves and stalks are delicious.

Potatoes, beans, turnips and tomatoes grow very well in our gardens. Squash, including zucchini, lettuce and cucumbers are very dependable too. Carrots, beets and parsnips, cabbage, broccoli and Brussels sprouts and many other vegetables can be grown with a bit more care and know-how.

When it comes to flower gardening I suppose the rose garden is the greatest delight. Good rose bushes can be obtained locally from nurseries or even department stores, or you can send off to the large mail order nurseries. These latter send out catalogues which give the gardener the pleasant hours in mid-winter when he can plan and order what he will plant come Spring. Once planted (according to instructions found in any gardening book or from the nurseryman) roses thrive on tender loving care. They should be hoed or mulched, they may need to be watered according to the season, they should be fed fertilizer or manure, and it seems to me they need to be sprayed at least occasionally with a combination herbicide-insecticide. Organic gardeners would deny this. Most of all they need Winter protection. Hill soil up around them and cover what still is uncovered with leaves or brush.

The finest roses to look at in the garden or in the house are the hybrid teas. Floribundas produce more blooms for longer periods but each bloom is smaller. Grandifloras are a cross between hybrid teas and floribundas. There are also many old fashioned shrub roses which bloom only for short periods and have small flowers but the flowers are often fragrant and the plants hardy and vigorous and make attractive shrubbery. To make rose growing even more fascinating, all rose

bushes are named with beautiful names like Crimson Glory and Peace and Tropicana. As you get used to rose growing you begin to recognise each rose like an old friend.

Other flowers like marigolds and petunias (annuals), phlox and lilies (perennials) do well in Nova Scotia. Tuberous begonias seem to like our moderate Summers with the cool nights and the plentiful moisture. American tourists are sometimes surprised at the way our begonias continue to bloom luxuriantly through August and September.

Mulching is a gardening trick that deserves to become more widely used. If you cover the ground between your plants with four to eight inches of vegetable matter, the plants will thrive. You can use grass clippings from the lawn or hay or old manure or even the scraps from the dinnertable (but this last may attract little animals both wild and domesticated). In New England wood chips are popular for mulching. The mulch is valuable because it preserves moisture, it encourages earth worms to keep the soil rich and porous, and it modifies the temperature around the plant roots, keeping them warmer when it's cold and cooler when it's hot.

Gardening, like medicine, is a vast subject and the more you learn the more you realize how much you don't know. It is a creative art too and so can give you a bit of immortality. The poet said "Plant a tree for someone else to water or write a song for someone else to sing."

To the scientist the purpose of the flower is the seed. To the gardener the purpose of the seed is the flower. The world needs all the gardeners it can get and it needs the gardener in each of us. □



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THE LESSON

The Practice of Medicine means just that. It implies an ongoing learning process. We are all students and, at the same time, teachers. We learn from each other but mostly, we learn from our patients. The following is an account of a rather unusual lesson that I was given by my oldest patient ever.

The latter was ninety-two at the time, a gracious lady in full control of all her faculties. She was known as Bobbe by one and all, this being the Yiddish word for grandmother. She lived alone except for a housekeeper with whom she felt she could well do without. Bobbe had always been a very independent person and even at ninety-two preferred doing her own housework and preparing her own meals.

Our lady had left the Ukraine with her husband and a family of eight little ones in 1910. They were bound for AMERICA, the land of the free where the gold was for the taking and Cossacks were unknown.

The husband had served in the Czar's armies for nine years, which explained the ten year spread between the first two children and the fourteen month spread between the other six. Zadie (another Yiddish word, meaning grandfather) was a scholar. He studied the Bible and meditated. He had been a cattle rancher when he wasn't being a soldier. After he reached his destination, which turned out to be Halifax, N.S., he became a full-time scholar.

It was left then to this little woman, the heroine of my story, to bring up her eight children, to see that they were properly educated, fed and clothed. I placed education first because that is where it has always belonged in the Jewish home. And it was no different in Bobbe's home. But these were hard times in Nova Scotia and the children had to get out and work in order that the family should survive. And they did survive and were properly educated as well.

Bobbe augmented her income by offering room and board to a student or two. Through the thirties she always had medical students living in her house, claiming that it was no more effort to feed twelve than to feed ten.

But let us get to the lesson. I arrived to find her in bed, the housekeeper standing by and several of the children

anxiously waiting in the parlor (and that's what it was, not a living room). I sat on the chair which had been placed by the bed, putting my bag on the floor, and proceeding to take the history. Following this I carried out an examination, part of which entailed asking Bobbe to open her mouth wide, stick out the tongue and say "Ahhhh"! I completed the "physical", reassured her and said that I would order some medication. She then asked if I would mind if she gave me some advice. I said "of course not" and she proceeded more or less as follows.

"Don't you have any of those little wooden sticks? You should always put a little wooden stick on the patient's tongue. I'm sure you could see very well but it's nice for the patient to have the little wooden stick on his tongue. Patients like it. And another thing. I don't see your bag. Always have the bag on the bed. Patients feel much better when they see the little black bag. Always put it where it can be seen. It gives confidence."

And ever since that visit twenty-one years ago, I have rarely failed to use a tongue depressor nor to put my bag where it could be seen.

"The evening of life brings with it its lamp."*

M.E.B.

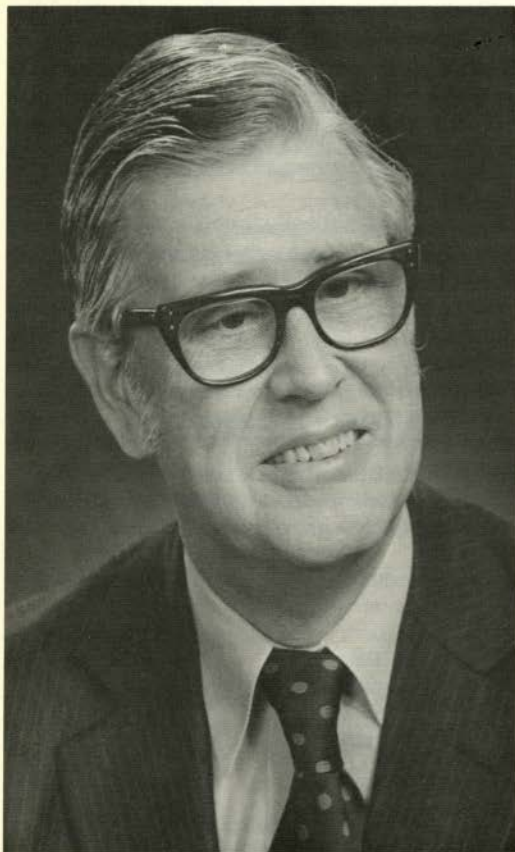
*Joubert

NEW MEMBERS

The Physicians listed below have joined The Medical Society of Nova Scotia between April 1, 1975 and August 31, 1975. A most cordial welcome is extended by the Society.

Dr. Lauder Brunton	Guysborough, N.S.
Dr. J. Ian Chisholm	Dartmouth, N.S.
Dr. Donald M. Curry	Halifax, N.S.
Dr. Laurence D. Daitz	Halifax, N.S.
Dr. Lystra R. Dayal-Gosine	Halifax, N.S.
Dr. Ronald R. Durling	Bridgewater, N.S.
Dr. Muhammad Humayun	Dartmouth, N.S.
*Dr. Henry A. R. Litz	Maine, U.S.A.
Dr. Isobel R. MacKay	Halifax, N.S.
Dr. Victor H. Martens	Dartmouth, N.S.
Dr. Nicholas E. D. Mattison	Pubnico, N.S.
Dr. James D. Morrison	Halifax, N.S.
Dr. J. Michael O'Brien	Antigonish, N.S.
Dr. Jagendra A. Patel	Halifax, N.S.
Dr. Chander Prakash	Middleton, N.S.
Dr. Sankar N. Prakash	Amherst, N.S.
Dr. Neville A. Robinson	Dartmouth, N.S.
Dr. Albert C. Scott	Halifax, N.S.
Dr. Harvey Solomon	Kingston, N.S.
Dr. James R. Standen	Halifax, N.S.
Dr. Donald A. K. Stinton	Halifax, N.S.
Dr. Wayne H. Sullivan	Dartmouth, N.S.
*Dr. Donald K. Taylor	Charlottetown, P.E.I.
Dr. Ahsan H. Taj	Amherst, N.S.
Dr. Zoher N. Vasi	Halifax, N.S.
Dr. Barry R. Wheeler	Truro, N.S.
*Internes — Dalhousie 1974-1975.	

Personal Interest Notes



WELCOME, DR. DONALD HATCHER

The Board of Governors of Dalhousie University have announced the good news that **Dr. J. Donald Hatcher** will take up the position of Dean of Medicine at the completion of Dr. Lloyd B. Macpherson's term of office.

Dr. Hatcher is currently Professor and Head, Department of Physiology at Queen's University where he has climbed the academic ladder from Assistant Professor in 1952 to his present rank. During the years 1968-1971 he served as Associate Dean, Faculty of Medicine.

His tenure at Queen's has included service as member of many intra-mural committees and chairman of not a few.

He has served as a consultant to the Defence Research Board, Arctic Panel; Director, Ontario Heart Foundation; and

advisor to the Surgeon General of Canadian Forces; Chairman of the Medical Research Council Committees and various offices including a term as President in the Canadian Physiological Society.

During World War II, Dr. Hatcher interrupted his education from 1944-1946 to serve as a Private in the Royal Canadian Army Medical Corps.

This was followed by internship in Hamilton and Boston and then a period as attending physician at Massachusetts Memorial Hospital and instructor in medicine at Boston University School of Medicine.

Then followed his appointment as a fellow of the National Research Council, a Nuffield Travelling Fellowship, Ontario Heart Foundation Fellowship, and a Senior Research Associateship from the National Heart Foundation.

During a sabbatical 1971-1972, he was Visiting Professor of Physiology at the University of California.

His past and present research is in the field of cardiovascular physiology with special emphasis on the mechanics of cardiovascular changes in anoxic and hypoxic states. He has also done studies on cold acclimatization and renal physiology.

Dr. Hatcher has been the author or collaborated in nearly 100 papers and abstracts on research in cardiovascular physiology and is co-author of *International Symposium on the Cardiovascular and Respiratory Effects of Hypoxia*.

Although much of his life has been spent in Ontario, having been educated in St. Thomas, Ontario and University of Western Ontario (M.D., 1946; Ph.D., 1951), Dr. Hatcher is happy with the prospect of living in Nova Scotia, where already he feels at home. Married with two daughters, one still in school, the family is looking forward to their move to Halifax.

The Nova Scotia Medical Bulletin wishes him every success and hopes he will find time to pursue his painting and gardening and that he will budget time to continue his extensive reading and writing.

The Bulletin will be honored if it is the vehicle for some of his future writings. □

The Convocation of Dalhousie University Medical School was held in the Rebecca Cohn auditorium on May 27, 1975. Vice-president Dr. Chester B. Stewart conferred the degrees in the absence from the city of Dr. Henry Hicks.

Four prizes and medals were carried off by **Dr. John H. Noseworthy** of Saint John, N.B. He received the Dr. C. B. Stewart gold medal in medicine, the Department of Psychiatry award, the prize "in Medicine and" the Dr. G. B. Wiswell prize.

Among this year's graduates were two sisters from Antigonish. **Dr. Eileen M. Foley** and **Dr. Anita A. Foley** were the first two sisters to graduate together in the history of the school of medicine.

The graduating class numbered 91 of whom 47 were Nova Scotian, 32 from New Brunswick, four from Prince Edward Island, three from Newfoundland, two from Quebec, one from British Columbia and two American students.

Of this class 62 are training in the Dalhousie integrated internship and the rest are mostly in other Canadian centers. It is interesting to note that 57 internes (36 other Canadians, three U.S.A., six U.K. and 12 graduates of other countries) have enrolled in the Dalhousie Internship Program. Of the 119 doctors in training in this program, 33 are out of Halifax at any one time — in hospitals in all three provinces.

Dr. B. K. Doane, Assistant Dean, has recently been appointed Professor and Head, Department of Psychiatry. Dr. Doane, after a Ph.D. in Physiology from McGill, entered the Faculty of Medicine at Dalhousie in 1957, did his residency training in the Department of Psychiatry here and achieved his Fellowship in the Royal College of Physicians of Canada in 1967.

Dr. Wayne Putnam, Dal. '69, has moved from private practise in Fredericton, New Brunswick, to take up the position of Assistant Director of Postgraduate Education in the Division of Continuing Medical Education, Dalhousie University.

Dr. J. R. Standen, University of Toronto '59, has accepted the appointment of Professor and Head, Department of Radiology of Dalhousie and the Victoria General Hospital.

Dr. R. A. C. Macbeth, Univ. of Alberta '44, formerly Professor and Head of Surgery at the University of Alberta has accepted the position of Associate Dean. His area of responsibility will be Postgraduate Medical Education in New Brunswick. He also holds the position of Professor in the Department of Surgery.

Dr. Richard Goldbloom, head of the Department of Pediatrics and physician-in-chief at the Izaak Walton Killam Hospital for Children, has been appointed a charter member of the Health Policy Study Group, a small national "think tank" of individuals representing government, hospitals, universities, industry and labor.

Dr. S. E. York has been appointed Assistant Dean, Curriculum and Evaluation. Dr. York will continue to teach in the Department of Medicine.

Halifax physician **Dr. J. A. Aquino** was conferred the Degree of Fellowship of the American College of Nuclear Medicine at its Annual Meeting held in Orlando, Florida, April 18-20, 1975. This is the highest honor the American College of Nuclear Medicine confers and is recognition of outstanding accomplishment and dedication in the great field of nuclear medicine.

OBITUARIES

Dr. John Wilfred MacIntosh, Sr., 78, died Thursday, August 21, 1975 at his home in Halifax. He was born at Pleasant Bay, Inverness. Educated at The Halifax Academy and Dalhousie University, he graduated in 1922 from Dalhousie Medical School. He practiced first in Prince Edward Island before coming to Halifax in 1930 where he continued to practice and teach until retirement in 1973. Our sympathy is extended to his wife and sons.

The death occurred on Saturday, Sept. 22, 1975 of **Dr. Thaddeus M. Sieniewicz** (80) in Halifax, N.S. Born in Wilkes-Barre, Pa., he moved to Halifax in 1902. Graduating in Medicine from Dalhousie University in May, 1917, he was gold medalist of his class. He was a Senior member of The Medical Society of Nova Scotia. The Society extends sympathy to his wife and family.

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