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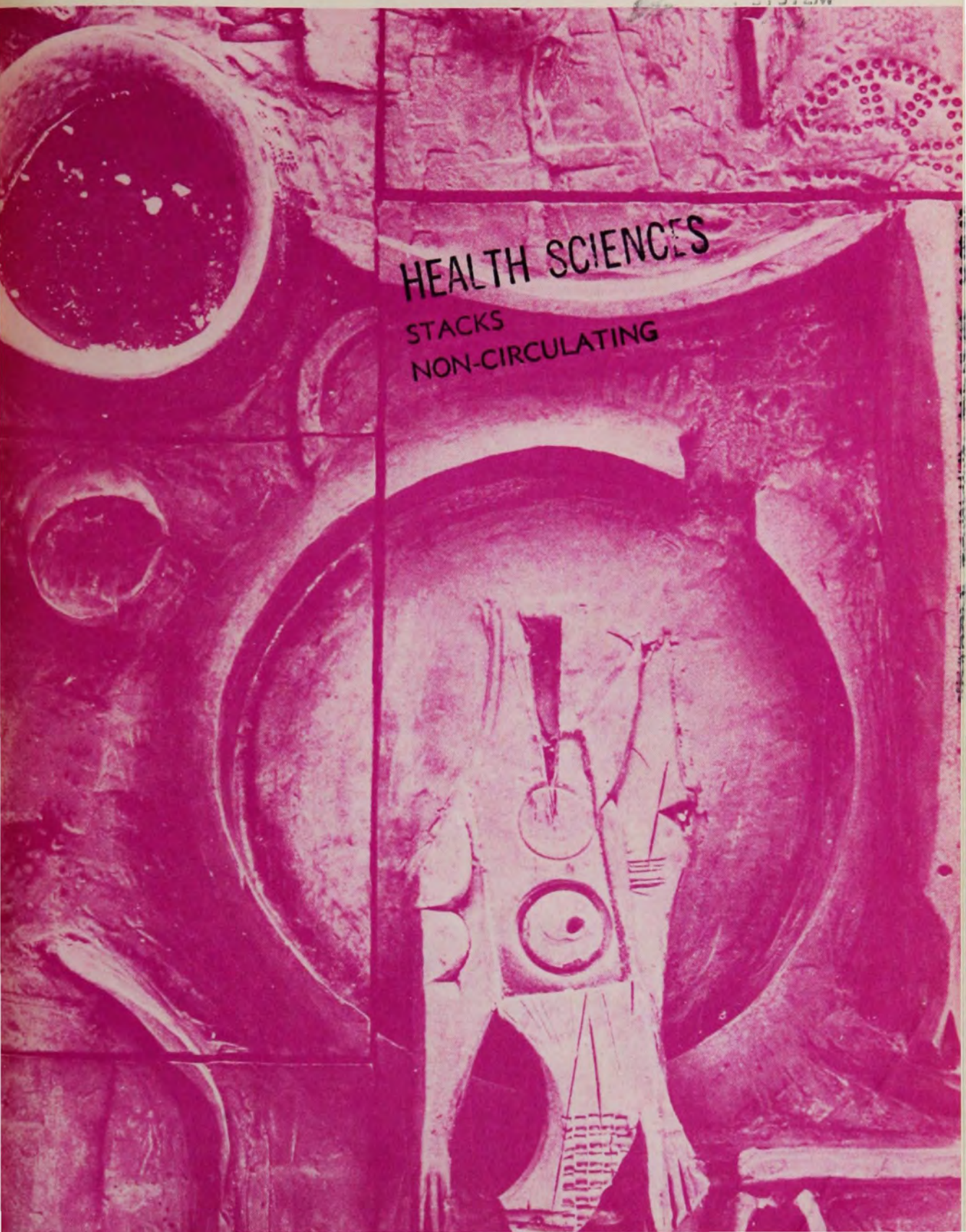

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MEDICAL JOURNAL

VOL. 43, NO. 3, MAY, 1973

THE UNIVERSITY OF WESTERN ONTARIO

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CONTRIBUTIONS will be accepted with the understanding that they are made solely to this publication. Articles should be of practical value to students and medical practitioners. Original research work is most welcome. Articles should not be longer than 3,000 words, and we will more readily accept those of shorter length. Introduction and summary of conclusions, should be included. Drawings and photographs will be accepted, the former to be in black ink and drawn clearly on white cardboard.

All articles submitted must be typewritten, on one side of paper only, with double spacing and two inch margins on each side. Canadian Press (American) spelling must be adhered to. The format for references is as follows: For books: author(s): title of book, publisher, place, year. For Journals: author(s): title of article, name of Journal (abbreviated as in the World List of Scientific Periodicals), volume: page, year.

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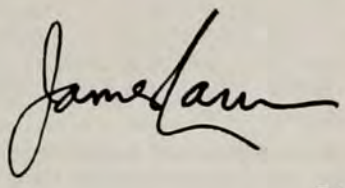
Editorial

A few nights ago, my wife came back from a "ceremonial dinner" at Dean Bocking's home. She, along with forty-three fourth year Meds Wives, was conferred a degree of P.H.T. (Putting Hubby Through). The inscription says the degree was conferred with all its "hardships, obligations and frustrations including penny pinching, long hours, nervous tensions, irritability, depression, hypertension, insomnia, restlessness, forgetfulness, neglect, anxiety, financial embarrassment and conditions too insignificant to merit attention." Well, what a small price to pay to a wife for this life-long endurance. No doubt the Women's Liberation Front will expand on this issue in the Ms magazine.

The 3rd-4th year party on April 6 held at the Banqueter was again a resounding success. There are plenty of clinical in-jokes among the many fine speeches made that night. Dr. "Barnie" Barnett gave a very entertaining and refreshing account of the many "human frailties" among medical students. By the way, Dr. Barnett's "stuttering" qualities of sustaining interests throughout his long speech should be congratulated. With this fine rostrum of local "talent" speeches, who needs to spend $150. and a free meal to bring here one Richard Needham and his "female companion" to talk to us about life (the latter of which is mainly his old newspaper clippings). To those who didn't attend the party, you would like to know that the top joke is by Eric Payne, Med. III. "What is it that looks awful but feels good?"

Some of the many questions medical students ask near the time of graduation are: i) the role of general practitioner vs specialist, toward community health care; ii) the depth of health care of individuals and their families; iii) whether or not to general practice or specialize in one medical field. From my recollections, there just isn't enough time spent in medical school to seriously pursue the answer to these questions. Yet, months before graduation, some decisions must be made regarding the immediate type of post graduate training. This issue is an attempt to provide information to medical students who want to know more about the pros and cons of various sides of medical practice, and hopefully in some way help them decide.

By the time this issue is out, most of the students would have endured the final examination ordeal. I wish you all a happy summer holiday.



Editor

* * *

Today when Medicine is rapidly becoming dehumanized because of emphasis on laboratory procedures and the domination of many medical schools by research workers, it is necessary that all students and doctors read and ponder over the implications of the following extracts from two famous oaths.

'I swear by Apollo physician . . . I will use treatment to help the sick according to my ability and judgement, but never with a view to injury and wrong-doing. Neither will I administer a poison to anybody when asked to do so, nor will I suggest such a course. Similarly I will not give a woman a pessary to cause abortion. But I will keep pure and holy my life and my art." (Hippocrates (460-377 B.C..)

Whither the Family Physician

W. Wayne Weston, M.D., C.C.F.P.

"Cascellius extracts or fills an aching tooth,
Hyginus burns away the hairs that hurt the eyes;
Fannius relieves, without cutting, the relaxed uvulva,
Eros effaces the melancholy brandmarks of slavery
From Freedmen's foreheads; Hermes is a very
Podalirius in curing hernia; but tell me Gallus,
Where is he that can help my harassed person?"

—Martial, First Century A.D.

General practice is what you do when you don't know which specialty to go into or when you are too old, unintelligent or broke to spend four more years in specialty training. The General Practitioner is a jack of all trades and master of none—as soon as we can train a sufficient number of specialists the old fashioned solo General Practitioner will be replaced by a well trained team consisting of an internist, pediatrician, obstetrician, psychiatrist and allied health professionals. Medical knowledge is expanding at such an accelerating pace that no individual can ever hope to be knowledgeable or competent in all areas of medicine. The concept of continuing care from cradle to grave was never true anyway—no doctor lives long enough to provide lifetime care and few physicians or their patients remain long in the same community in our mobile society.

In spite of widespread acceptance of these myths just a few years ago, we have witnessed a remarkable renaissance of family medicine around the world. However myths die hard and there is still much misunderstanding of the family doctor's role in the health care delivery system. One of the commonest misconceptions is to see the Family Physician as a dilettante—widely trained in all the clinical specialties but lacking any depth of knowledge in any of them. In fact many family doctors share this "inferiority complex" and counter it by becoming minor experts in some aspect of medicine.

It is the thesis of this article that there is a definable field of knowledge and area of expertise that characterizes Family Medicine just as with every other branch of medicine. It is only in the last decade that family doctors have begun to conceptualize what it is they do and how it can best be taught. Of course there can be no single prototype for the Family Physician. In many rural areas he will still be called on to give anesthesia and perform surgery. However there is a core of knowledge, skills and attitudes common to Family Physicians everywhere that defines the discipline of Family Medicine.

Defining the Discipline

(1) *Clinician*—First and foremost the family doctor is a clinician whose primary responsibility is "to manage a sick person with the purpose of alleviating most effectively the total impact of the illness upon that person."[1] To accomplish this end he must be highly skilled in the recognition, definition and management of health problems. "He must have mastery of the disciplines and tools of problem solving, including the ability to think logically and creatively."[2] He must have expertise in the performance of the history and physical examination and the appropriate use of laboratory investigation for the broad range of ills that are likely to affect his patient population. He will take cost, benefit and risk factors into account when planning investigations and management. He will interpret his findings and plans to the patient in a clear and sensitive manner which does not cause unnecessary alarm but which alerts the patient to important signs of danger either from the illness itself or the treatment. He will be especially skilled in handling those problems which present most frequently, or which could be life threatening or which could result in serious disability. He will recognize that a definitive diagnosis may not always be possible and will be able "to tolerate sustained muddleheadedness" (Whitehead) when further investigation is not in the patients' best interest.

(2) *Primary physician*—He is the doctor of first contact and the means of entry into the health care system. He (or a substitute) must be readily accessible to his patients at all times.

He should be well organized to provide rapid assistance for serious and life threatening emergency problems e.g. M.I.'s, MVA's, asthma, suicidal attemps, etc. and

highly skilled in differentiating the early symptoms of serious disease from the clinical picture of common self-limiting disorders. He will educate his patients to use health care facilities appropriately encouraging them to present early with minor symptoms of serious illnesses and instructing them how to handle common self-limiting conditions themselves.

(3) *Continuing and comprehensive care*—He provides ongoing care to his patients for the full range of health problems regardless of age, sex or type of illness. He accepts responsibility for a defined group of individuals in a community and attempts to prevent illness whenever possible by educating his patients in healthy habits of living; identifying individuals with specific health hazards and advising them how to minimize risk factors; recognizing the earliest signs of illness and instituting prompt treatment. His focus is on the patient as a human being living in a complex social setting and not on organ systems in isolation. He must have a deep understanding of human development from conception to infancy and early childhood thru adolescence to maturity, middle age, senescence and death.

(4) *Personal care*—It is ironic that at a time in history when medicine has so much to offer, public malcontent with our profession is so strong. Perhaps we have forgotten that it is not science but compassion that physicians have provided to their patients in the past. Only in this century has the average patient, treated by the average doctor, stood a better than 50-50 chance of benefitting from the encounter. In fact Charney in discussing patient compliance, states ". . . perhaps non-compliance is to be respected to a degree, reflecting some primordial common sense of the species that has allowed it to survive millennia of false medical advice."[3]

The doctor-patient relationship often becomes intensely personal and is a source of one of the greatest satisfactions in medicine. Peabody said it so well: "The secret of the care of the patient is caring for the patient."[4] It is this basic element of one human being caring for another that is at the heart of any therapeutic encounter.

(5) *Family care*—The Family Physician usually cares for all members of the family and his knowledge of the family structure and dynamics can provide valuable insight into the problems of each patient.

Most physicians recognize early, after starting practice, that many of their patients come to them with problems which they can't classify neatly in any diagnostic schema they learned in medical school. This is a frequent source of frustration and anger and I believe it is the main reason for dissatisfaction with Family Practice.

McWhinney has described a framework for classifying illness behavior according to what makes the patient seek contact with the doctor.[5]

(a) *Limit of tolerance*—the symptoms of pain, or disability have become intolerable e.g. fracture of the forearm.

(b) *Limit of anxiety*—the patient fears the implications of the symptom e.g. hemoptysis.

(c) *"Heterothetic"* (Problems of living presenting as symptoms)—the patient presents with symptoms of anxiety or depression or with unrelated or incidental symptoms that conceal an underlying problem of living. Clinical diagnosis is often of secondary importance to understanding the patient's real problem.

(d) *Administrative*—the patient requires a certificate of absence from work or an insurance document completed.

(e) *No illness*—this includes preventive care such as antenatal and well baby visits.

Only when the physician goes "Beyond Diagnosis" to an understanding of the reasons for the patient's visit can he answer his real needs. Family doctors have long recognized the complex interplay between the patient, his family and the illness. Not only does serious illness in one member of the family affect the rest of the family but disturbed relationships in the family are often manifest by one or several members of the family taking on the sick role. Only recently have we begun to understand some of the factors that influence family functioning—communication style, problem solving behavior, modes of behavior control, role behavior, autonomy and expression of affect. The family doctor of the future must have special training to understand the families in his care and to be able to intervene effectively to help them deal with some of the common problems of today's family: "the first baby syndrome," anxiety and depression, adolescent rebellion, terminal illness and bereavement.

Special Features of Illness in Family Practice

The spectrum of illness seen differs vastly from that seen in a hospital setting, especially a university hospital. In a population of 1,000, each month 750 fall ill, 250 seek medical care, 10 end up in hospital and one ends up in a teaching hospital.[6] The factors affecting illness behavior that leads 1/3

of those who fall ill to seek medical help and the other 2/3 to manage without medical care are poorly understood and this poses a fascinating problem for further research.

A large proportion of the disorders seen are minor self-limiting disorders (68%—Fry).[7] 30-50% of patient visits to a family doctor are associated with emotional problems. There is a high incidence of chronic disorders (27%—Fry).[7] There are also a large number of disorders that cannot yet be classified.

The problems are "undifferentiated" and are often described in vague terrms. Details may be unclear and the chronology may be confused. The patient has not been "primed" by another physician about what part of the story is medically relevant. The second person to take the history has the advantage that the patient has been able to mull over the first physician's questions and get his story organized. However he is at a disadvantage that the first physician may have introduced bias.

Diseases are often seen in the earliest stages when only vague symptoms are present and signs may be absent. The "textbook" picture of the illness is based on hospital experience with further advanced or atypical cases and is not the usual picture in family practice. Clinical acumen of the highest degree may be required to recognize illnesses at this stage.

The illnesses seen are often a complex mixture of physical, emotional and social elements. Contrary to popular medical mythology, patients often have more than one illness at a time. To investigate these patients adequately, the family doctor searches not only into the patient's physiology and bio-chemistry but into his family life and job situation. Investigation of psyche and soma should be conducted in parallel, not in series. Psychiatric diagnosis is not made simply by excluding organic illness. Both can and often do occur together. Too often we treat the disease and not the person; the incidental physical finding rather than the real problem. ". . . Doctor and patient conspire to agree on what is often a chimera, which is identified as the thing that is causing the trouble. This is a very ancient technique, evil spirits having been erroneously identified and successfully cast out for centuries past . . . If the doctor were going to work this through with the patient, time, energy, and personal involvement would be required. These are all things in short supply."[8]

Patients often present with symptoms of illness which are secondary to problems of living.[5] Another variation on the same theme is the patient with organic illness as well as a problem of living in whom the symptoms are more related to the problem of living than to the organic disease. The danger is that the underlying problem will not be recognized and the symptoms are organized around a framework of a recognized disease entity (the traditional diagnosis). Patient and doctor then ignore the real problem and pursue the traditional diagnosis with little chance of success. The doctor begins to think of the patient as "that ulcer patient" and the patient thinks of himself in the same way and can organize his life problems around the illness. As long as the real problems are not tackled there is little chance of helping this patient and the longer the traditional approach is pursued the more organized the illness becomes. Eric Berne has described a similar situation as a game of "Wooden Leg" in which the individual has a ready excuse for all his failings e.g. "I would be glad to do what you ask if it weren't for my wooden leg (or ulcer or heart trouble)."[9]

Education for Family Practice

It has been abundantly clear for many years that the traditional hospital-oriented medical education is inadequate preparation for Family Practice. Sir James MacKenzie, who graduated in 1879, wrote, "After a year in hospital, as a house physician, I entered general practice in an industrial town . . . I started work fairly confident that my teaching and hospital experience had amply furnished me with a competent knowledge for the pursuit of my profession . . . I was not long engaged in my new sphere when I realized that I was unable to recognize the ailments in the great majority of my patients."

In 1966 three pilot training programs were set up in Canada, two of them by the College of Family Physicians. Before this, each generation of family doctors had to learn for himself on the job. The accumulated knowledge of a lifetime of learning and practice too often was lost when the doctor died. Newton had stated that he was able to see further than others because he stood on the shoulders of giants. The student of Family Medicine today has a choice of residency programs in most universities. He can spend 2-4 years in the program and select a variety of options including extra training in surgery and anesthesia for frontier practice. Emphasis is placed on acquiring the knowledge, attitudes and skills required to co-ordinate and deliver comprehensive care to a defined group of ambulatory patients in a family and community setting on a continuing basis.

It is my hope that the family doctor of the future will begin practice well prepared to offer his patient the best that the science and the art of family medicine can provide. Many people have argued that it would be far simpler and cheaper to train family physicians by having them work with experienced family doctors in their practices. The trouble with this apprenticeship approach is that it tends to reproduce copies of the teacher which may be adequate for the problems of today but often fails to produce physicians who can innovate and change to meet the demands of the future. We wouldn't train internists or surgeons this way. Training for family practice must be as intellectually rigorous and challenging as training for any other field of medicine. As Alfred North Whitehead stated, "Our rate of progress is such that an individual human being of ordinary length of life, will be called upon to face novel situations which find no parallel in his past. The fixed person, for the fixed duties, who in older societies was such a godsend, in the future will be a public danger."

Summary: A Definition of Family Medicine

Family medicine is a specailized area of medical practice which is characterized by the provision of primary, continuing and comprehensive care to whole families and individuals in the context of the family and the community, and by the co-ordination of other health care services which may be required for the optimal care of the patient.

It is based on a specialized knowledge of clinical medicine and the behavioral sciences as they apply to the unique features of the illnesses seen in family practice—the problems are undifferentiated, seen in the earliest stages and are often complex mixtures of physical, emotional and social elements. The successful application of this knowledge depends on the development of specialized skills: in early diagnosis; health maintenance and rehabilitation; management of several problems simultaneously; effective use of the physician's own personality as a therapeutic agent; efficient office management and team leadership.

Thus, family medicine is not simply the absence of a specialty or a conglomerate of all the specialties, but rather a unique field in itself which has specific roles and requires specialized knowledge and skills to deal effectively with the problems unique to this type of practice. As Joseph Sergent defines it: "Family Medicine is a co-ordinated multi-disciplined approach to comprehensive health care of the family unit."

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* * *

Sign in a doctor's office: "Ladies in waiting room will kindly refrain from exchanging symptoms. It gets the doctor confused."

* * *

A young surgeon received a phone call from a colleague who invited him to make a fourth at bridge.

"Going out, dear?" asked his wife sympathetically?"

"I'm afraid so," was the brave reply. "It's a very important case. There are three doctors there already."

Then there's the new diet pill for women. It paralyzes the mouth.

* * *

We've just heard about the man who spent $10,000 to get rid of halitosis only to find out that his friends didn't like him anyway!

* * *

Doctor to lady patient: "You have acute appendix."

Patient: "I came for examination, not admiration."

The Emotionally Disturbed and the Human Environment

James H. C. Lam, '73

INTRODUCTION

What are emotions? What is meant by being emotionally disturbed?

By definition, emotion is "stirring up, agitation, excitement of the feelings; the feeling of joy, grief, hatred, love, fear, etc. Emotions, in popular language, refer to feelings arising from the heart, not from a rational activity of the intellect."[1] To be disturbed by definition is "to be driven asunder, thrown into disorder, to be frustrated. To disturb one's thoughts, reflections, train of ideas and one's serenity of mind."[2]

In simpler terms, when one's inner feelings, be it rational or irrational, are grossly agitated by external forces such that the feelings of joy, grief, hatred, love, fear, are significantly distorted, then one's emotions are disturbed.

Emotional disturbance is a major component of mental illness of our times and it must be reckoned with.

This essay is an attempt to study man's inner ecosystem and his ability or disability to cope with the outer ecosystem. Hopefully, this essay may help form an impression as to how changes and implementations can be made to achieve a balanced emotional ecosystem—be the change in the direction of individual, social, cultural, economic or political.

DEFINITIONS OF HEALTH

I once heard a high schooler who claimed that Plato had said, "If the head and body are to be well, you must begin by caring for the soul." How relevant is this definition of health? How is this compared to the definition by the World Health Organization?

Kogan in his book, "Man in a Changing Environment," has written:

> Is health visible? Is it seen as a gleaming smile? Not to those Asians who chew betel nuts to blacken their teeth for beauty. Is health felt? Many people feel well yet harbor infectious illness. Perhaps a formula, something short and magical, could define health? But formulae seem to apply best not to men but to things. Since there is no human equation, there is no health equation. Health is as complex as man, as variable as life. This is its encompassing problem, its endless fascination.[3]

Hinkle, in his article "Characteristics of Healthy and Unhealthy People" ventured further to say:

> Freedom from illness must be looked upon as only one measure of the adaptation of the individual to his environment. It is not always the best measure of this adaptation. The unhealthy do not necessarily do less well than the healthy in other departments of life. Sometimes ill health or even death is the price of superior performance as a human being.[4]

In this era of "enlightened" health care, it is essential for the health care personnel to be critically aware of the vast depth of emotions that are ever present in our lives. Health, therefore, is intricately influenced by the mind and any concept of health must be viewed as much with *imagination* as with words.

WHERE DO WE BEGIN?

> And if the soul
> is to know itself
> it must look
> into a soul:
> the stranger and enemy, we've seen
> him in the mirror.[5]
>
> George Seferis

Antonio in "The Merchant of Venice":

> In sooth, I know not why I am so sad.
> It wearies me, you say it wearies you;
> But how I caught it, found it or came by it,
> What stuff it's made of, whereof it is born,
> I am to learn.
> And such a want-wit sadness makes of me
> That I have much ado to know myself.[6]

The above phrases may cast some light to begin understanding human emotions. How many times do we talk to our inner self and try to understand it as much as we understand our outer reactions? Is our inner self a stranger and enemy? Do we see "him" in the mirror? Or is "he" so sad that it wearies us? There is much ado to know thy *whole* self!

Erikson has provided a useful and coherent concept of the flow of psychological happenings through which people may grow to emotional maturity.[7] In each stage the developing individual is faced with a task. If

TABLE I

ERIKSON'S SIX STAGES OF PERSONALITY DEVELOPMENT

Stage	*Development*	*Personality* *Strength*		*Weakness*
I	Infant	Basic Trust	vs	Basic Mistrust
II	Toddler	Autonomy	vs	Shame and Doubt
III	Preschooler	Initiative	vs	Guilt
IV	School-age	Industry	vs	Inferiority
V	Puberty—Teenage	Identity	vs	Self-diffusion
VI (a)	Adulthood	Intimacy and Distantiation	vs	Self-absorption
(b)	"	Generativity	vs	Stagnation
(c)	"	Integrity	vs	Despair and Disgust

the task is satisfactorily resolved, the individual enters healthily into the next stage. Without help, a person's inadequately resolved task in a certain stage turns into cumulative emotional scars and personality disorders.

Erikson's six stages of personality development is, in one sense, the beginning of our task to unravel the mystery of human emotions. (See Table I.)

HOW IMPORTANT IS THE PROBLEM OF MENTAL ILLNESS?

Epidemiologically, all data on the incidence and prevalence of psychiatric illness must be carefully evaluated. Lemkau has warned:

> Current rise in first admission rate to psychiatric hospitals can hardly be due to changed incidence of psychiatric illnesses and conditions in the population but must be due to more unstable factors such as early diagnosis, better acceptance of treatment opportunities and so forth.[8]

There are further studies supporting this conclusion. However, for the sake of a rough estimate of the magnitude of the problem at hand, it was quoted in the seminar on mental illness, course in Community Medicine, March 1972, "as of December 31, 1968, 68,646 Canadians were to be found as patients of either a mental hospital or a psychiatric unit of a general hospital. This represented about one Canadian in every 300, and by confining the count to persons 15 years of age or over, the ratio was increased to about one in every 225." Dr. James M. Wanklin, in the same seminar stated that "while current figures are not available, it can be assumed that they are now somewhat lower than in 1968. This decline, on the other hand, has been accomplished entirely through the earlier discharge of patients to the community and indeed in the face of ever-increasing rates of admission."

The situation was worse in the United States. Kogan stated, "On any given day, an estimated two million people are disabled by emotional illness. In this nation's psychiatric hospitals, over a million people a year receive treatment for mental illness. From seven to twelve per cent of school-age children and youth *need* professional help for severe emotional problems. It is estimated that about 10% of the population will at some point in their lives, suffer serious emotional illness necessitating hospitalization."[9]

In the field of family practice, McFarlane and group, in their one year retrospective study in Hamilton, Ontario, in 1969, based on 3,005 contacts, attributed 8% (343) of their contacts to have symptoms related to emotional upsets. Similarly, Steele and group, in a composite of six studies with a total diagnoses of 42,670, has attributed 3,370 diagnoses or 7.8% due to mental, psychoneurotic and personality disorders; these ranked third in frequency of diagnosis.

The problem of mental illness is important because of its chronicity and its prevalence. It is even more important from the standpoint that each mentally ill or emotionally disturbed individual represents an unfulfilled life style. To be deprived of a fulfilled life style is to some a detriment to humanity itself.

HAS POVERTY ANYTHING TO DO WITH HEALTH?

In his book, "The Cost of Sickness and the Price of Health," Professor Winslow wrote:

> The great problem of health in the world today is that . . . great majority of human beings are eking out a miserable existence in a social setting where their work is unproductive, their food scarce, their housing inadequate, their life-span short and their health bad or in constant danger.[10]

Is it too surprising then to find that psychiatric disorders appear not only to be more common among the poor, but to take a more disabling form as well? Is it surprising to believe that persons living in poverty not only run a greater risk of developing psychiatric disorder, but face a *poorer* prognosis as well? Professor Winslow pointed to the fact that poverty and illness form a vicious circle. People are sick because they are poor; they become poorer because they are sick and sicker because they are poorer. There is a cumulative process in operation, continuously pressing levels downwards, where one negative factor is at the same time *cause* and *effect* of all the other negative factors.

One survey, carried out in New York's Columbia Washington Heights poverty area, found that 25% of the clients seen by the agencies within the area had been diagnosed as suffering from a psychiatric disorder, while an additional 40% were undiagnosed but suspected of suffering from such a disorder.[11] What other conclusion may we draw from such staggering figures?

Can it be real that this can happen in the so-called "affluent" North American countries? As we all know, but sometimes tend to forget, there are, in many rich countries, large rural and urban areas which do not deserve any other characterization than "slums".

CHANCE OF REFORMS

There are vested interests in the continued employment of old methods and in the preservation of the status quo. There are social stratification, economic inequalities and political institutions ruling in many of these countries which act as heavy impediments to reform and which, in some cases, tend to reduce their efficiency. I believe the chance of reform in the so-called war against poverty depends on *radical* changes in the economic, social, administrative and political set-up of these countries.

SOCIAL AND CULTURAL FACTORS AND EMOTIONAL PROBLEMS

To appreciate the social impact on our emotional life, let us look at the ultimate consequence of the most tragic sector of our society—those who are driven to suicide. Since suicide is regarded as the final resort of our emotional failure, is society as whole responsible for their deaths?

Men kill themselves because they have family sorrow, disappointments to their pride; sometimes they have had to suffer poverty or sickness, and others have had some moral fault with which to reproach themselves. One may kill himself in the midst of affluence; another, in poverty. One may be unhappy in his home, another had just ended by divorce which was making him unhappy. In one case, a soldier ends his life after having been punished for an offence he did not commit; another case, a criminal whose crime has remained unpunished kills himself.

According to Durkheim, "social suicide rate can be explained only sociologically. At any given moment, the moral institution of society establishes the contingent of voluntary deaths. The victim's acts which at first seem to express only his personal temperament are really the supplement and prolongation of a social condition which they express externally."[12]

The private experiences usually thought to be the proximate causes of suicide have only the influence borrowed from the victim's moral predisposition, itself an echo of the moral state of society.

I have heard one frustrated psychiatrist who, after years of practice, utter the cry of desperation, "Change society and there is no need to treat mental illness."

Again, to impress upon the significance of cultural factors to mental illness, let's turn to the problem of racial segregation. In his book, "Dark Ghetto: Dilemmas of Social Power," Kenneth Clark, a psychologist, conveyed just how it feels to be enclosed in the "invisible sheet of plate glass of segregation."[13] He pointed out the "immense wastage, not only in human happiness but in productivity"[14] by practising segregation.

To think that cultural and ethnic differences are not present is naive. To think that such differences do not contribute to mental illness is medically unsound.

"The harmful effects of American racism on personality development and psychological balance are unmistakable."[15] Still, it is one thing to show that prejudice damages individuals and another to show that emotional illness of a particular individual has been caused by prejudice. However, the magnitude of the problem may be seen by the brief comment submitted in 1961 by the New York Community Mental Health Board:

> Three per cent of the total population of New York City lived in Central Harlem which ranked *first* in rates of admissions to state mental hospitals, contributing 6.5% of all New York City admissions.[16]

THE CLIMATE OF THE SEVENTIES AND EMOTIONAL PROBLEMS

How pertinent is anxiety and fear to all of us in the seventies? Anxiety is a feeling of foreboding. It is a premonition that something evil is about to happen. Fear, on the other hand, is caused by an immediate experience. One is fearful of something or somebody specific. One is afraid NOW, while one's anxiety may be quite vague and it can be a feeling about the future.

In the 70's, fear and anxiety can be as specific as a child's first strange face, his initial separation from mother on his first day of school. Fear and anxiety can be as nonspecific as an overhanging mushroom cloud of fire (radiation), air, soil or water that may well be the eventual doom of the Earth.

To sum up the wide spectrum of our emotional set-ups in this present atomic age, the French mathematician and philosopher, B. Pascal, wrote:

> When I consider the short duration of my life, swallowed up in the eternity before and after, the little space which I fill, and even can see engulfed in the infinite immensity of spaces of which I am ignorant, and which know me not, I am frightened . . . The eternal silence of these infinite spaces frightens me.[17]

It is in this fear of uncertainty that one must deal with both as a person and as a physician. If there is one major assurance, it is *to allay anxiety appropriately at the appropriate time of development, widely applied to all humanity.* This is possibly the common necessary ingredient for the maintenance of a realistic emotional balance in the sea of human behavioural complexities.

HISTORICAL SURVEY OF MENTAL HEALTH PROGRAM

Historically, mental health programs have developed from institutions devoted to the care of the unsuccessful in populations—unsuccessful because of chronic disease, because of lack of motivation to succeed, and because of mental illness. These groups were all gathered together in an almshouse supported by the local government or by some charitable enterprise.[18]

The composite institution gradually was broken down into multiple facilities to serve the distinguishable groups. In the United States in the latter half of the 19th century, most of this responsibility was transferred from local governmental units to those of the state with subsequent building of large public hospital systems.[19]

In the last five decades, mainly due to the application of this general medical concept that early treatment has a better chance of success than delayed treatment, clinical services were available closer to the place where the patient lives.[20]

Concomitant with the development of local clinical services, there grew the conviction that preventive services would be effective. This concept of prevention was further extended to the psychological and social spheres, subsequently.[21]

The net result of these developments has been the spread of the area of concern of mental health programs from an originally primary custodial and protective institution to local community clinical services and finally, reaching the healthy population in its entirety with programs designed to promote health and to prevent illness. The content of the Mental Health Program is summarized in Table II.

TABLE II

CONTENT OF MENTAL HEALTH PROGRAMS

Services	*Examples*
1. Residences	Hospitalization of various kinds
2. Educational	Schools for retarded, emotionally disturbed, brain damaged
3. Rehabilitation	Employment, educational, drug supervision, resocialization, family guidance
4. Emergency Psychiatric	Situational crises
5. Local treatment and diagnoses	
6. Consultative	
7. Prevention of Illness and Promotion of Health	Education of public, attitudes, personal and family mental hygiene, medical care

RESULTS OF TREATMENT OF EMOTIONALLY DISTURBED

No one single universal technique is used in dealing with complex emotional problems. Mainly, treatments are 1) behavioural therapy, for example, aversive conditioning, 2) psychoactive drug therapy, 3) convulsive therapy, for example, insulin, ECT, and 4) environmental manipulation.

Recent studies have indicated that results with different treatments are markedly similar. Most statistical studies show that 65-70% of neurotic patients and 35% of schizophrenic patients improve after treatment regardless of the type of treatment received. Long term follow-up studies of treated patients have also demonstrated no difference among the various treatments.[22]

WHICH TYPE OF PSYCHOTHERAPY IS BEST SUITED FOR THE AVERAGE EMOTIONAL PROBLEM?

Because there is no average emotional problem, the answer to this question will probably never be found. Differences in reactions to different stimuli by different people at different times—such variables do not readily lend themselves to measures of psychotherapeutic success. By relatively simple manipulation of his environment, one individual may relieve considerable anxiety-producing stress. At the other extreme, an individual may fail to overcome his emotional hurdles despite intensive appropriate psychotherapeutic treatment.

More important than the *kind* of help received is receiving it from a *competent* source *when* it is needed.

Erikson relates the case of a little boy who ate paper. Nobody, however, paid any attention to him. He ate more and more paper. Still, nobody cared. So finally he ate the theatre tickets, and then he received treatment.

One of the ways of looking at symptomatology at any period in any society is: Where is the point where you eat the theatre tickets? Well, it should be early. A problem that will at first be handled with ease may, if neglected, worsen.

Likewise, a girl who really didn't need treatment herself, although per parents did, was brought in to a psychiatric clinic under the following symptomatology: This girl and her parents lived in a house with *one* bathroom. She used to lock the door and take a three hour bath. In time, the parents brought her to a psychiatrist and then she was able to get her parents treated.[23]

PROPHYLAXIS: AWARENESS OF "CRITICAL" PERIODS OF PERSONALITY DEVELOPMENT AND LIFE CRISES

The life of an individual may be viewed as a series of events, each to some degree conditioning the way later events take place and affect the individual. Some events are of little importance; they pass and are done with. Many events that take place in earliest infancy (0-9 months) appear to be completely blotted out and have no further influence. Similarly, it is probable that there is a critical period in speech development. If the child *hears* no speech during this period, he may be unable later to learn speech. Bowlby and others present evidence that "the capacity to love others matures in the setting of maternal care and that when maternal care is not present in sufficient quantity, the capacity to love and to care about the feelings of others may be damaged."[24]

Associated, but not identical with the above concept of critical periods of development, is the idea that some life events are common to many people and have sufficient emotional impact to be important to the personality functioning. Such events are termed *crises,* times when change takes place, when adaptation is demanded. To be aware of such known crises and devise ways and means to help the individual to sustain and/or adapt such changes successfully is what preventive public health care is all about.

Research indicates that "the emotionally well adjusted mother delivers with fewer complications than the emotionally unhealthy mother."[25] Also, it is believed by some that pre-eclampsia occurs more frequently in pregnant women under severe emotional stress than in those not so burdened.

The successful use of mothers' classes in prenatal clinics indicates that the fears concerning the process of childbirth itself are readily dispersed by frank discussion and by teaching the physiologic anatomy of pregnancy and delivery. Classes in baby care similarly tend to relieve the fears of the normal woman that she does not have the capacity to be a good mother.

It is important to introduce the new baby properly into the life of the child or children already in the family. Children tend to want the exclusive attention of their parents, particularly their mothers, and they resent the intrusion of the helpless infant.

Sibling rivalry, a situation which is known to give rise to emotional conflict can be dealt with in discussion before the situation is actually at hand. The aim is to lessen the emotional impact of the situation and

consequently its potential as a source of conflict. Sibling rivalry should be expected to occur to some degree and appreciated as a justifiable defence reaction of a child who sees affectional sustenance being withdrawn from him by an intruder in the family circle.

The concept of "anticipatory guidance"[26] will appear again and again as a basic technique in mental hygiene from the situation in prenatal care to the preparation for retirement in old age.

Prevention of prematurity is good mental hygiene. To the mother, any feelings of self-blame and isolation, frequently associated with feelings of guilt and of unworthiness, must be dispelled with facts about premature birth. Also, it is easy for this self-blame to be projected upon the child. There may be disappointed grandparents and other relatives who do not hesitate to blame one or the other marital partner for the mishap, thus throwing additional strain on the husband-wife relationship.

The fact that the precarious condition of the premature infant requires hospital care, interrupts the mother's taking over immediately after its birth. Instead, she must put off the practice of motherhood for weeks or months. These babies are often referred to as "little strangers". It has been suggested that more premature babies are abandoned by their parents than is the case with term babies.

One can always go on and on to talk about the logics of the day care centre, the nursery school during the preschool days; the psychoanalytic picture of family relationships typified in the Oedipus theory, the crises of the child's first day in school and the big plunge into the public school educational system.

The central theme of this prophylactic mental hygiene, in the light of known wide variations in children's personalities and rates of development, is to see to it that each personality develops its individual potentialities as fully as possible so that the resulting adult will present maximal health and strength of personality. This is believed to be the best possible basis for the prevention of mental illness as well as all other types of disease.

FINAL THOUGHTS

1. My definition of emotional health in the seventies: An emotionally healthy person is able i) to meet the stresses of life and to choose appropriate methods of solving problems, ii) to have a realistic sense of his own worth and interacts constructively with others, iii) to find satisfaction in efficiently performing his work and iv) to function effectively on the physical health scale.

2. To my knowledge, there is at present nothing in the vast academic and practical training of medical students to prepare them for the realities and complexities of this type of involvement in a real, dynamic, turbulent and at times seemingly chaotic community. What is more, there is nothing now that prepares them to understand, to cope with, or to change the normal chaos of ghetto communities. These are grave lacks which must be remedied soon, if the medical discipline is to become relevant to the stability and survival of our society.

3. Prescription for mental health: LOVE qhs and prn. There is separation at birth. Filling the gulf is love. Without mothering, without embracing love, the infant suffers. Yet, mothering is not smothering. True mother love teaches further separation. The constancy of a mother's love, even after her child's departure, is mirrored by the child's ability to learn to love others in later life.

As the normally learning child explores his body, he learns the glories of self-love. This self-love is not necessarily selfish. The child was born self-ish. He will remain selfish only if he learns to hate himself. But if he learns self-worth, he will love this worthy self. And by giving of a worthy self, he will be able wholeheartedly to enter into a long learning process of loving others. And love is the prescription for our mental health. This is all one can give and all one may give to our fellow men.

4. Health: whose responsibility? In the individual lies the basic responsibility for health. Without enough individual participation, the best health organization is enfeebled. A parable, very old and completely modern, sums it up.

> There was once a rabbi who had the reputation for knowing what was in a man's mind by reading his thoughts. A wicked boy came to see him and said, "Rabbi, I have in my hand a small bird. Is it alive or is it dead?" And the boy thought to himself, "If he says it is dead, I will open my hand and let it fly away; if he says it is alive, I will quickly squeeze it and show him it is dead." And the boy repeated the question, "Rabbi, I have in my hand a small bird. Is it alive or is it dead?" And the rabbi gazed steadily at him, and said quietly, "Whatever you WILL; whatever you WILL."[27]

One is free to choose, to be or not to be responsible; to love or to hate. But freedom means responsibility. This is the free man's paradox, his reality and his health.

5. To effect a change, medicine as a profession must initiate change. A modern social, cultural and economic awareness must start from within. To be an involved observer of health, one must be part of what is being observed—to join in the lives of the people while at the same time, seeking to understand them and the forces which mold them and to which they respond.

Let us plunge ourselves into a new direction of social participation; a soother of the soul as well as the body. Indeed, we can carry on the true Hippocratic tradition—TO BE A PEOPLE'S DOCTOR.

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"Much have I learned from my teachers; more from my colleagues; and from my students more than from them all." Babylonian Talmud (2nd century).

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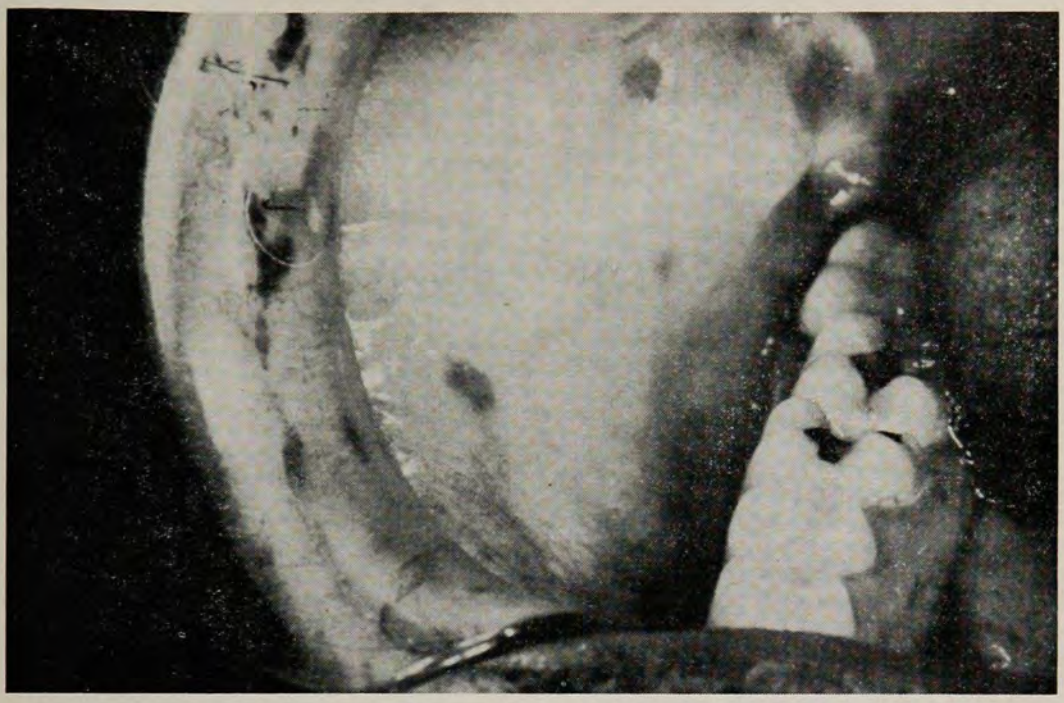
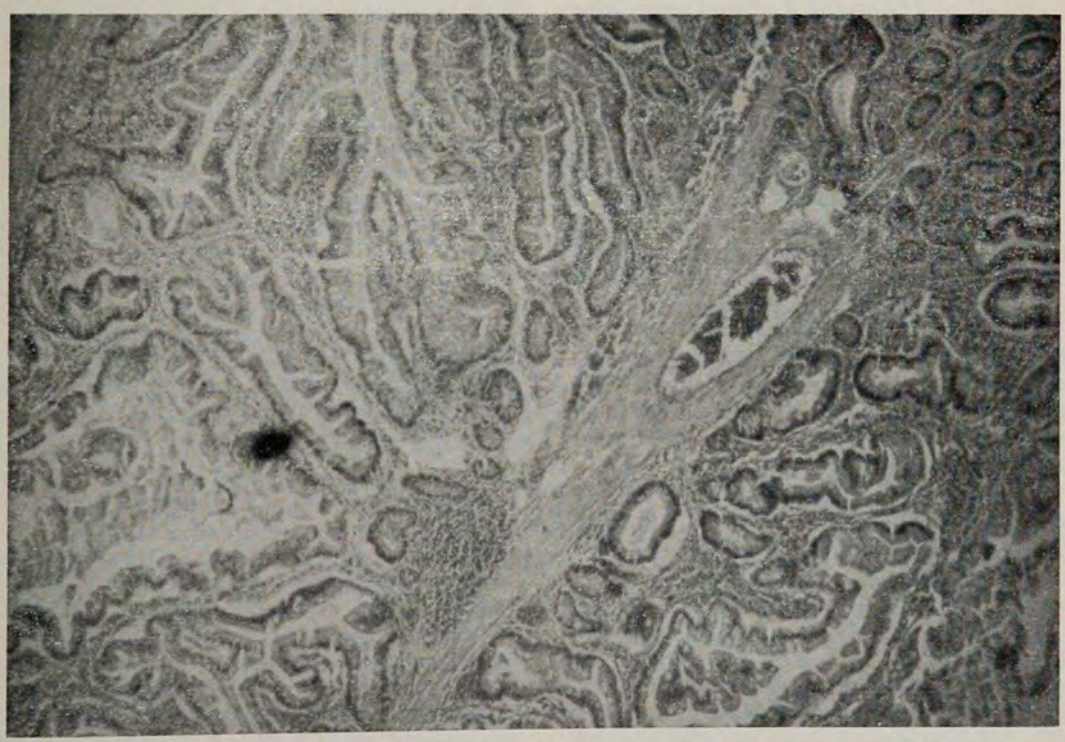
Pathological Photoquiz

Polyp found in jejunum in a 21-year-old man with brownish pigmentation around the lips and on the oral mucosa. What is the lesion?





Our thanks to Dr. M. Troster, M.D., F.R.C.P.(C), Victoria Hospital

Answer on page 89.

A Historical Study of Family-Centered Childbirth

Thomas Wolder, '75

HUSBAND'S INCREASING ROLE

For the last fifteen years in North America there has been a decided increase in husband participation at childbirth. Instead of the husband pacing up and down the corridors of the hospital, his modern counterpart stays at his wife's side giving her encouragement, correcting her breathing faults and complimenting her when she is responding particularly well. Generally the husband has followed some kind of course for his new role. In London for example, the husband will attend eight evening sessions along with his wife of family-centered pre-natal classes. There he will learn with his wife the various breathing exercises that will be utilized during labour and he will become familiar with the various anatomical and physiological changes associated with the female body during gestation and delivery. In addition he will have seen a movie on the subject and probably has taken a tour of the obstetrical wing of the local hospital. In all these endeavours the husband and wife have collaborated and thus the whole pregnancy psychologically becomes a shared experience for the expecting couple. In addition this modern couple will have sought out a doctor who approves of having the husband in the delivery room and will have selected a hospital where all this is permitted. Thus the husband has been preparing for the blessed event as well as the wife from the moment they found out that the wife was pregnant.

In one publication of the early fifties a mention was made of the husband's role during a home delivery in England.
If he (meaning the father) is of the right mentality and very few are, he may sustain his wife's morale during the first part of her labour, otherwise he is best employed making tea, keeping the kettle boiling and answering the front door bell.

If the presence of husbands during the delivery process was so unpopular, why this sudden upsurge in demands for husbands' presence during parturition. To search for a possible explanation the whole spectrum of womanhood should be surveyed especially the status and social movements of the North American woman of this century. In the fifties we find a trend in North America to idealize motherhood and as a reaction to that we may observe the birth of the feminist movement in the late fifties and early sixties.

Betty Friedan in her book "The Feminine Mystique" shows quite clearly that the American woman is being brainwashed into the glamorous life of housewifery. The chapter entitled 'The Happy Housewife Heroine' illustrates how popular women's magazines deliberately elevated the housewife to the position of being the heroine of post-war years. A girl would go through grade school, high school and university. She would then promptly forget all she has learned to be a successful mother and housewife. She is allowed however to teach her children and actively contribute to such organizations as the P.T.A. and hospital's auxiliary. Her opinions on politics for example should be confined to the appropriateness of Jackie Kennedy's clothes.

The career woman of the fifties was despised and in many cases she was felt sorry for, while on the other end of the scale the blessings of motherhood was bestowed upon those girls who sought their true and rewarding biological role. Not only did magazines popularize motherhood but paradoxically one of the greatest career women of North America echoed the same views. Margaret Mead's studies of primitive cultures of the South Sea Islands were widely read and actively studied at colleges and universities. From anthropological studies of primitive cultures many students learned that the birth of a baby was the zenith of a woman's biological career. Perhaps Margaret Mead more than any other individual helped popularize the idea of glamour in motherhood. It is within this period that such organizations such as the La Leche League gained many important converts such as Princess Grace Kelly of Monaco. (La Leche League is a group of women who promote good mothering through breastfeeding.)

In 1957 Marjorie Karmel published a book called, "Thank You Dr. Lamaze," in which she described how she had a natural childbirth in France and in addition showed how her husband assisted her in her delivery. That is to say, the doctor delivered the baby but the husband was an active participant in the delivery process. In a later section of the book Mrs. Karmel lists the difficulties she had in finding a doctor and a hospital who would allow husbands in the delivery room in the United States for her second pregnancy. Mrs. Karmel provides some insight

into the method of psychoprophylaxis or natural childbirth without pain. Up to this day Mrs. Karmel's book is a source of inspiration and guidance to many well educated middle class would-be mothers. Thus the increased militancy among the career girls in the form of feminism was paralleled in the married set by a partial rejection of modern obstetrical practices. What they wanted was a return to the more natural form of childbirth away from the sterile hospital atmosphere if possible.

These women also wanted to be part of the birth process, they wanted to be in control of their own body (a well-known feminist expression), they wanted to be conscious and lastly they wanted their husband there in the delivery room. This last point should be noted with increased emphasis. It was the women who wanted the husband there in most cases. In 1957 when Marjorie Karmel's book was published, many deliveries in the United States took place by having the woman fully unconscious by means of a general anaesthetic. Women would say sometimes, "How do I know this baby is mine. It want to be conscious at delivery. My husband wasn't there. Should I just take the word of the hospital staff." Thus in 1957 the idea of psychological anaesthesia as proposed by Dr. Lamaze gained instant popularity among many women.

Marjorie Karmel's book possibly had a greater effect upon the American woman than Grantly Dick Read's book "Childbirth Without Fear" a decade earlier. The reason for this might be that the women of the fifties were more ready to rebel against existing practices than the women ten years earlier. It seemed that the college educated woman of the late fifties found a cause. She was ready to fight for the right to deliver her own baby; that is to say, fully under her control without any medication and share this experience with her husband at her side.

A lot of husbands complied and followed their wives into the delivery room whenever hospital rules and staff would permit it. But even then there were some husbands who procrastinated. One couple told me that they had decided three months before the blessed event that the husband would accompany the wife into the delivery area. As the appointed day came the husband dutifully stayed at his wife's side in the labour-room until she was fully dilated. As she was ready to be wheeled into the appointed room, one of the nurses remarked to him, "Why would you possibly want to see this?" This single remark was sufficient reason for the husband not to go in. Thus there are always husbands who search for the slightest pretext not to go in.

Another reason for the increasing husband participation in childbirth might be the European influence upon our Canadian society. In a lot of Western European countries the midwife system is employed. For example, in a country such as West Germany the system works as follows: Midwives were usually on duty in a hospital for at least twelve-hour shifts. Also there were a sufficient number of midwives, so that a woman in labour would have one and only one midwife in attendance for her whole period of labour. In addition, since the midwives were on duty a long period of time it would seem highly likely that the woman would have the same midwife throughout her whole delivery. The doctor was only called if any complication would arise otherwise the midwife would complete the whole delivery. Now we can see that the woman would always have the midwife at her side. They would chat between contractions and the midwife would answer any questions that the patient might have. Then when the baby was ready to deliver, the baby was brought into the world in the same room where the labour took place. This method offers the woman a constant amount of psychological support supplied by the midwife, because as the midwife stays with the patient a sort of trust or bond develops between the two and as the baby is born the patient will be more relaxed on account of this. Now let us compare this to many modern hospital obstetrical procedures. First of all the labour room and the delivery room are two different places. Thus as the time comes, the woman is rushed out of the labour room into the delivery room. While in the labour room the interns, residents and doctors come in, examine and leave and many times without explaining to the patient what is going on. Even though the woman may be assured that many staff members are concerned about her delivery there is no continuous *bond* of trust and support as developed between the midwife and the patient in the previous description. Now with the development of the epidural, the modern obstetrical atmosphere has become much more relaxed but this was not the case in the late fifties. Thus we see that having the husband in the delivery room and labour room provided the wife with a constant support during her labour. The only difference between the husband and the midwife of course was knowledge. While the midwife could reassure the woman on a professional basis the husband could only reassure her at an emotional level.

The feminist movement of the early sixties pioneered by such women journalists as Betty Friedan stressed as one of their platforms the joint responsibility of husband and wife for the raising of children. These

feminists advocated an end to pure male and female role playing. For example they wanted to eradicate the notion that certain tasks were strictly feminine and others masculine. They would say, "What is so particularly feminine about doing dishes?" or, "What is so masculine about putting out the garbage?" Thus they emphasized the sharing of duties both the unpleasant and pleasant ones. Thus the notion of having the husband share the birth experience with his wife could possibly be a natural consequence of the women's liberation movement. In that light Marjorie Karmel was one of the feminists of the fifties. For Mrs. Karmel demanded that she have control over her own body through utilization of the Lamaze method of natural childbirth. She also insisted that her husband participate in the experience. The fact that Mrs. Karmel is the dominant force is readily apparent. It was she, not her husband, who wrote the book. Secondly at one point in the book Marjorie's husband remarked that he would be able to see the baby before his wife. Marjorie's reply was swift and sure. She insisted that her husband stay with her at her side and in that way he would be able to see the baby at the same time as herself. Thus Marjorie wanted to make sure that her husband would act in his supportive role rather than just be a curious bystander.

Thus the whole emphasis is on sharing. As soon as the new liberated woman finds out she's pregnant, she starts to involve her husband. If they haven't already done so they immediately set out shopping for a doctor. The doctor will in most cases be a specialist obstetrician who looks favourably upon natural childbirth according to the Lamaze method and who is not opposed to having husbands in the delivery room. They must also insure that the hospital in which the selected doctor practices allows husbands in. The next step will be the enrolment of husband and wife in the family centered maternity classes. Family centered maternity classes are those attended by both prospective parents. The couple will learn a little anatomy and physiology of the normal female body. In addition they will both participate in the breathing exercises according to Lamaze as outlined by Marjorie Karmel and Elizabeth Byng. They will see either one or more movies concerning a Lamaze birth and will take a guided tour through the obstetrical facilities of the designated hospital. They will learn all this in evening classes, one evening per week for eight weeks. The husband will be trained to act as a coach for his wife's breathing exercises. He will remind her when she is not breathing correctly, he will encourage her when she is performing well, he will assist her in rubbing her back and lower abdomen during the height of the contraction, and now and then he will pop sweets into her mouth for quick energy.

Many ardent feminist writers have stated time after time that the married women are the failures of their sisterhood. Maybe those well-educated women that mobilize their husbands from the time of conception in a shared supportive role are really saying maybe we aren't such failures after all. For they have shown that they have managed to involve their husband not only in the process of child raising but in the whole prenatal period.

In London, Ontario, in a group of 64 women who have attended the family-centered prenatal classes, 61% had some type of post secondary school education, either B.A., R.N., M.A., or Ph.D.

FAMILY CENTERED PRENATAL CLASSES LONDON ONTARIO 1971-1972

Total number of women	64	
Post secondary education	39	61%
High school graduates only	17	27%
Some high school	6	9%
No high school	2	3%

There is no doubt from the above figures that husband involvement is highly popular among the more educated women. It could also be assumed that most of the women attending family centered childbirth classes have more than a passing acquaintance with modern feminist literature and this could possibly explain why they are so insistent in having their husbands in the delivery room.

There are two questions however that may seem puzzling at first and should be explored further. First of all in the family-centered prenatal classes in London there were a high significant proportion of Dutch couples (20%) and secondly, why is this movement flaring up now in 1972 in London more than ten years after it has manifested itself in the United States.

In the decades following the second world war there was a great deal of European immigration to Canada. One of the ethnic groups that settled in large numbers around London, Ontario were the Dutch. Although Dutch Canadians assimilated quickly into the mainstream of Canadian life they did however retain a distinct identity. In London for example there are numerous Dutch societies such as the Dutch Canadian Club, St. Willibrord Society, the Christian Reformed Church, etc.

These organizations probably helped in maintaining certain Dutch traditions. Deliveries in The Netherlands usually take place at home. The woman is on the main delivered by the local midwife. Only if complications arise will the woman have her delivery in the hospital. Thus under those circumstances the husband normally attends the wife at her delivery. In addition the Dutch women usually deliver naturally without any medication. It is for these strong cultural reasons that the Dutch immigrants seem to prefer the natural childbirth with the husband in attendance. As a matter of fact many Dutch women were still delivering their babies at home in London but with the relaxation of hospital policy whereby the husband is allowed in the delivery room more of these women are delivering their babies in Victoria Hospital.

In the United States in the nineteen fifties when a general anaesthetic was used routinely during obstetric deliveries there seemed to be a popular reason for delivering naturally and allowing women to be conscious during the whole process. Ferdinand Lamaze and Grantly Dick Read both advocated having the husbands in the delivery room and as a result this notion was also very popular. Now we find this movement flaring up in London, Ontario fifteen years after its initial impetus in the United States.

Some reasons for this so-called cultural lag may be that natural childbirth is a subject that only interests a small group of the general population, only those couples who are in the process of bearing children. The program is not really widely advertised and is usually spread by word of mouth and this alone would explain a certain delay. In addition, since a great number of the participants that I interviewed came from the United States, a possible explanation may be that after 1966 when the American involvement in Vietnam was at its height, many well educated young people came to Canada. Many of these had Ph.D.'s and took up teaching positions at Canadian Universities. A significant number of participants of family-centered childbirth classes were members of the University of Western Ontario faculty who had come from the United States since 1966. It can be shown statistically that Americans teaching at Canadian universities have drastically increased in the last five years. Thus part of the reason for family-centered childbirth being popular in London, Ontario in 1972 may be attributed to the conflict in Vietnam.

As it stands there are many objections to having the husbands in the delivery room. Many doctors must feel a little on edge when they have the husband there looking over his shoulder. In an emergency the doctor might have to perform some radical procedure without delay and he simply does not have the time to explain to the husband what is going on. Another factor which might weigh against having the husbands in the delivery room is that the husband is not used to operating room conditions. That is to say, no matter how many movies he has seen, he might not be emotionally prepared to see a little blood. Although it does not happen too often the episode of the husband fainting or becoming sick happens enough times that the physician is always aware of it. At a critical moment it could happen that the doctor has three patients to look after, the mother, the baby and also the father.
A third point which became apparent in Victoria Hospital on some occasions was that certain husbands were not familiar enough with sterility procedures in the delivery room. There was one husband for example who lifted up the sheet covering the perineal area and thereby contaminating a sterile area. Fourthly most husbands are quite behaved and do not cause any disturbance but with any new phenomena certain people are attracted to it who like to overdo things and thereby spoiling it for the others. There was one case where a husband told me that the delivery went so fast that he had no time to set his light meter on his camera. He told me in addition that in an American hospital where his wife delivered the first baby that the obstetrician took the pictures.

PSYCHOPROPHYLAXIS

Natural childbirth may be defined as that type of birth for which the woman does not require any medication. Rather than having the woman taking a passive role in parturition, Dr. Grantly Dick Read and Dr. Ferdinand Lamaze have suggested a set of exercises by which the woman may prepare herself for the process of natural childbirth. This very idea by which women themselves could take an active part in the delivery had great appeal especially among the well-read women. The notion of being able to control your own delivery has a somewhat similar connotation as the feminist cry of "We want to control our own body." As a result many more women wanted to attempt the natural childbirth technique with the advent of the sixties. One feminist told me in an interview that through natural childbirth the woman could be truly liberated from all those who wanted to punch her full of dope during delivery. There is one item that many advocates of natural childbirth overlook and that is the fact that not every woman can deliver naturally.
One prominent anaesthetist told me that about 60% of deliveries could occur naturally, and about 20% will have complications that would

make a natural delivery impossible. There is however, another 20% for whom a natural delivery is physically possible but the patients are of such nature that without the anaesthetic they would become unmanageable.

It must be pointed out, however, in my survey of natural childbirth, only referring to the women that attended the family-centered classes of psychoprophylaxis, very few women complete the whole delivery without asking for the epidural. Those that are successful are very vocal about their accomplishments and this may tend to give people the idea that many women are accomplishing the feat of natural childbirth.

Psychoprophylaxis in its very name implies that there will be no pain in delivery when a few simple breathing exercises are adhered to. If a woman has pain the proponents usually say that the woman is not doing her breathing correctly. Many young primips who are enthusiastic and fired up to deliver naturally after having gone to the classes find out to their dismay that the discomfort is more than they were let on to believe. As a result they usually request an epidural.

Unless the woman is of very strong character and the husband is understanding the very act of asking for an epidural may psychologically affect her into believing that she is a failure as a prospective mother. She might feel that she is inadequate in the eyes of her husband. There were some instances where the wife wanted an epidural but the husband refused. Finally the husband relented but later said to me that the staff was continually asking his wife if she wanted some medication and regarded the staff as constantly tempting his wife. These types of labour room conflicts can offer irreparable damage to both husband and wife and could in addition be disconcerting to hospital staff.

In Hamilton, Ontario, at St. Joseph's Hospital psychoprophylaxis is quite popular and the success rate of women completing their delivery without medication is considerably higher than in London. The reason for this might be that the whole psychoprophylaxis training and coaching is carried out by a team of obstetricians and general practitioners headed by Dr. Murray Enkin. Thus the driving force behind the whole method are members of the medical profession.

Much has been written about painless and painful deliveries through the ages. To clarify some facts and fallacies, we must look at the various ways that deliveries took place through the ages starting with primitive societies.

CHILDBIRTH THROUGHOUT HISTORY

The role of the female in primitive cultures centres around her reproductive function. It is the woman who becomes pregnant, bears children and is equipped to nurse them. Men are necessary for conception and this was recognized but it is the woman who must conceive, give birth to and care for the offspring and any shirking of her responsibility in that role was generally frowned upon by everyone. Thus in these societies fertility was a blessing bestowed upon the woman by the gods or spirits but she who is barren had obviously fallen out of favour with the gods. An infertile woman was a disgrace to the community and to her husband, and was for many cultures an automatic reason for instant divorce. No wonder we see evidence of many rituals and medicines that attempt to restore fertility in barren women.

Parturition in most primitive cultures was considered to be a frightening experience, filled with pain and suffering. There have been some writers who have stated that the so-called "natural childbirth" of primitive peoples was a painless affair but this has been contradicted by actual observations. Beatrice Blackwood who in 1935 witnessed and described a birth in the Solomon Islands leaves us the following account.

"Sanasi's first instructions to Maney were to come and sit close to the central pole of the hut, and hang on to it. This she did, raising her arms as far as possible above her head, clasping the post, which was immediately behind her, pulling on it, as Sanasi had shown her. Presently a short log was brought, about three inches thick and two and a half feet long. She was told to leave the pole and sit on the log, in a posture with her knees bent and her legs separated. Sanasi knelt behind her on one knee, pressing the other knee into her back, and clasping both arms around her body just below the armpits, the clasped hand resting on the protuberant abdomen and pressing it downwards. Another woman sat in front and held her knees wide apart.

"As the pains grew more severe, Maney shrieked and cried, and tried to get up. At one time there were four women holding her, one behind her as described before, one holding each knee and pressing it downwards, and one standing behind and pressing her hands on Maney's shoulders, to keep her from springing up. At long intervals she was allowed a short respite, during which she lay on her side on the floor, but after a minute or two she was called back onto the log and told that she must think of the child. Twice she vomitted, but not violently.

". . . This went on for five or six hours.

". . . Then another four or five hours passed, the women still holding Maney as previously described. She appeared to be in great distress, and called repeatedly: 'Atsat pio, atsat tagala.' (Woe is me, in the two dialects currently used in her village.) No notice was taken by the women of any of her cries.

"Once in a while the woman kneeling behind moved her clasping hands from the top of the protuberant abdomen to the bottom and shook it violently. This caused fresh cries and groans. Tears were streaming down Maney's face, she begged continually to be allowed to lie down. Once they let her down on the ground for a minute or two, and once they helped her to her feet, and she stood for a few seconds supported by two women, but most of the time she sat on the log, with knees drawn up and pressed wide apart. Towards morning they all came and sat in front of her awaiting the first sight of the child. As soon as the first glimmer of daylight appeared through the chinks in the walls of the hut, they put out the hurricane lantern that I had brought with me, which up until then faintly illuminated the scene, so that when the top of the child's head at last appeared it was distinguished with difficulty in the dim light of dawn. Sighs of relief and smiles of anticipation came from all women. It was an occipito-anterior presentation and apparently normal."

(Pp. 146-149, Blackwood, Beatrice, Both Sides of Buka Passage. Oxford: Clarendon Press, 1935.)

The husband is usually not present during his wife's delivery in most primitive cultures. In some however he may be present or a male doctor may be called in. In general however childbirth in those types of societies is attended by elderly women of the village or midwives. Even though men as a rule do not assist in deliveries, they may have definite duties to perform. For example in some cultures the husband must refrain from hunting and fishing during his wife's confinement. There are even some instances where the husband must also stay in bed and simulate his wife's labour pains.

After the child is born the mother and child will isolate themselves away from the village for a week or in some cases up to a month. This isolation procedure was not medically appreciated until the development of modern hospitals. For it was crowded conditions in modern hospitals that increased infection rates and forced the adaptation of aseptic techniques. Thus the self-removal of mother and child from the rest of the village was really done for the protection of the offspring. The mother would nurse her baby anywhere from six months up to two or three years. Usually by the time she has finally weaned the child, she will be pregnant again. Only in menopause will the primitive woman find freedom from her reproductive function.

Some people have generalized that primitive women do not experience pains of childbirth. Care must be taken to discern whether these women actually experience pain or do not show the effects of pain by constant outcry. One investigator, Hrdlicka, reported that Mohave Indian women undoubtedly suffer in the course of their childbirth, but the expression of their suffering is held back through fear of ridicule. Preisman and Ogoulbostan-Essenova reported that Turkmenian women behave calmly during childbirth but this does not mean that they do not feel it as painful. If one judges the matter by their own statements childbirth is considered by these women as a task they must perform. This behaviour according to the investigators is due to customs with roots deep within the secular Turkmenian tradition. Custom decrees that the women are delivered outside the house in the absence of any strange person and even if they suffer they must prevent any motor expression of their suffering. It is interesting to note that these same women who nowadays are delivered in modern maternity hospitals still adhere to these same traditions. Ford, who studied the literature concerning childbirth in sixty-four different primitive societies, came to the following conclusions: "The popular impression that childbirth in primitive societies is painless can easily be contradicted by our cases. As a matter of fact it is often prolonged and painful. Fear of difficult and painful labour motivates women in all societies to follow strict rules during pregnancy."

There is no reason to believe that in Biblical times childbirth was considered to be a painless affair. It may be noted in the following passage of Genesis, Chapter 3, verse 16 . . . "Unto women he said, I will greatly multiply thy sorrow and thy conception; in sorrow thou shalt bring forth children." Since Christianity was the dominant religion of the Western World little was done to alleviate or even question the pains of childbirth until well into the eighteenth century. Women, according to the opinions of those times, must be made to suffer for that original sin. The theme of man being pure and women evil, aiding in man's downfall, has been a popular idea throughout Western civilization. Indeed there are still many people who hold this view today. Authors have echoed this concept in their literature, composers in their music and artists

in their paintings. All we have to do is read Flaubert's Madame Bovary, listen to Bizet's Carmen or view many paintings hanging in today's museums, to capture the spirit of Western thought on women. Even in primitive societies women were thought to be impure because of their menstrual flow.

At the beginning of the nineteenth century pain relief of childbirth was attempted by means of hypnotism. Hypnotism only occurred in a small number of cases because many physicians did not have the time nor the skill to administer hypnotic trances to their patients. It was however Dr. James Young Simpson of Edinburgh who was the first to use pharmacological means of pain relief in his practice of midwifery. In 1848 Simpson delivered the first baby after having administered chloroform to the mother. Dr. Simpson immediately wanted to share his discovery with his colleagues by publishing his results. Almost immediately Dr. Simpson was besieged by outcries from influential clergy who said that Dr. Simpson was flouting God's word, and doctors who said that chloroform was untried and dangerous, and many other outspoken critics who said that pain was a good thing and let's not do away with a good thing. However a few years later all arguments against the use of chloroform in childbirth ceased when Queen Victoria asked for chloroform as she was ready to deliver her eighth child. For the next century chloroform was used routinely in obstetrics in Britain and North America especially. Other agents were also tried but the general anaesthetic for delivery remained popular even into the nineteen fifties.

The modern concept of natural childbirth refers to delivery without the use of pharmacological agents. It became popular first in England as a reaction against the routine use of chloroform. Dr. Grantly Dick Read first described the method of preparation for this type of delivery in a book published in 1933 called Natural Childbirth. It was followed by another book in 1942 called Revelations of Childbirth and the latter was republished in the United States under the name Childbirth Without Fear. Dr. Read acquired his inspiration for promoting natural childbirth around 1914 when he was called in to deliver a woman in the poor district of London called Whitechapel. The birth went according to plan except when Read tried to offer the woman some chloroform. The woman refused. The reason for her refusal puzzled the doctor and on leaving he asked her why she had not taken any medication. Her reply was as follows, "It didn't hurt. It wasn't meant to was it doctor."

Subsequently during the first world war Read went to continental Europe and while there observed many apparently painless natural deliveries. After the war when he came back to Britain he was once again confronted with women that wanted chloroform because they were experiencing pain. This apparent contrast between the women of continental Europe and those of the British Isles spurred Dr. Read on to do research in this field which culminated in his first publication.

About 1945 Russian scientists and obstetricians Velvowski, Platonov, and Nicolaiev began to use a system of childbirth preparation based on the Pavlovian concept of conditioned reflex. They called their method psychoprophylaxis. Its procedures were brought to France in the early fifties by Dr. Ferdinand Lamaze who had observed the method in use in the U.S.S.R. The method uses the power of words (verbal approach) and breathing as a means to suppress pain. Thus in essence psychoprophylaxis claims that by following their method painless deliveries are possible.

Psychoprophylaxis still remains controversial in the medical profession. First of all childbirth without any type of pain or discomfort is very difficult to accept by most medically trained persons. Many doctors will accept the idea that pain can be diminished by psychoprophylaxis but they feel that total removal of pain is inconsistent with reality. Secondly, the method comes from Europe where the anaesthetical procedures in obstetrics are not as advanced as they are in North America. Thus in a way there is a cultural objection. In France for example medication is not used as routinely as it is in North America during deliveries and as a result any method that will attempt to relieve the discomfort of birth would be welcomed. In continental Europe forceps deliveries are looked upon with horror and these instruments are only used in the most difficult of cases while in North America on the other hand forceps are used routinely by doctors who are familiar in their use. Thus the proponents of psychoprophylaxis use arguments that do not apply to North America to further their aims. Very few studies have been done to objectively compare psychoprophylaxis with other types of childbirths. In the studies that have been done there has been no significant reduction in time of labour nor different apgar score using the Lamaze method. However it has been found that patients trained in psychoprophylaxis will require less medication than those women who are not prepared. Dr. Lee Buxton of Yale University, who has studied many patients using this type of childbirth preparation, concludes, "Psycho-physical training techniques were probably a valuable psychological adjunct but that the

whole idea might well be an enthusiasm of the moment which in future years would decline considerably in popularity."

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Answer to Pathological Photoquiz

The polyp represents a hamartomatous malformation of intestinal components known as the Peutz-Jegher's syndrome in association with the oral pigmentation. This condition is passed as a simple mendelian dominant trait and is initially apparent in childhood. Polyps are found distributed throughout the entire gastro-intestinal tract. Microscopically the characteristic features are that they are composed of normal intestinal components and smooth muscle bands are particularly prominent.

Clinically these people present with haemorrhage and intussusception. Rarely the polyps may become malignant.

"A Day in the Life of a Family Physician"

Kitchener-Waterloo Family Physician's
2nd Annual Medical Students Preceptor Day.

Dr. W. H. Bryant

Seventy-eight of 88 third year medical students from the University of Western Ontario have enjoyed a day with a host family physician in Kitchener-Waterloo. Two years ago local family physicians formed a University Affiliate Committee on Education of Medical Students, Interns and Family Practice Residents. Presently all residents in the two London programs undertake their obstetrical rotations in Kitchener at St. Mary's Hospital. Both family physicians and obstetrician-gynaecologist specialists are active in this program. Doctor Bill Bryant, Immediate Past President of the Ontario Chapter is the Preceptorship Co-ordinator on the committee responsible for arranging the medical students day-long visits on November 30, January 25 and March 1 in the past year. There are some 90 family physicians in the area and 35 of them have volunteered to host students. The program has the blessing of the University of Western Ontario Dean of Medicine and also the Chairman of the Department of Family Medicine at the University of Western Ontario, Dr. Ian McWhinney.

Students provided their own transportation from London, a distance of some 70 miles, and were teamed up with their host physician upon arrival at the K-W Hospital. From there the student was in the company of his host physician throughout the entire day which included hospital rounds, surgery, office practice and the usual unexpected things which occur in day to day family practice. In the early evening students and hosting doctors relived their many and varied experiences through the day over cocktails at the beautiful Westmount Golf Club. A dinner followed after which a "rap session" lasting about 1½ hours was staged. During these discussions stimulating dialogue took place between doctors and students ranging from the changing role of the family doctor to residency programs and certification. Without exception, the students' response to the program on all three visits was positive. Most were quite amazed at the volume and spectrum of problems handled by family physicians in communities outside the direct influence of universities. They were also impressed with the healthy rapport between specialists and family physicians and the many key positions held by family physicians in local hospitals.

For most students it was their first experience in delivery or operating room scrubs, and the recognition of early illness as seen in doctors' offices. An air of excitement and enthusiasm amongst students was quite evident at the evening activities.

The experience of hosting students proved to be most stimulating to local family physicians, all of whom enjoyed their students immensely.

On March 1, during the last visit of 26 students, Doctor Donald Rice was kind enough to come to Kitchener to lead the evening forum. His remarks were well received by all in attendance and he congratulated local physicians on their efforts with undergraduate students. The cost of the students' meals was covered by a grant from the Ontario Chapter and in part by the National College and will no doubt prove a sound investment in years to come.

The Kitchener-Waterloo area is increasing its efforts toward the development of a high calibre satellite teaching community in Family Medicine.

The results can be measured in the overflow applications to the University of Western Ontario residency training programs in London and the increasing enthusiasm for preceptorship experience amongst Kitchener-Waterloo family physicians. Hopefully many more areas across the country in close proximity to medical schools will develop similar programs for undergraduate medical students.

Decisions: General Practice or Specialty Training

Rolando Del Maestro, '73

Standing on a precipice contemplating my future in medicine I find myself somewhat confused. The analysis of this confusion has allowed me to accumulate some information and suggestions which may be useful to those who are making and to those who will make the difficult decisions ahead.

The decisions begin in October of fourth year. October will find you making such decisions as where you will intern and whether you desire a straight, mixed, rotating or family medicine internship program. These choices will and should influence your career in medicine profoundly. You will discover that the different hospitals and internship programs provide you with important information and some lectures are given by faculty members and the dean but this is insufficient information to make such an important decision.

After four years of medical schools' structured life and innumerable lectures on a wide range of medical topics the question of what a student does after he receives his M.D. receives relatively insignificant attention. Has medical school really prepared us for our individual role in medicine?

To make an intelligent decision as to one's future career realistic and pertinent information concerning the alternatives available must be at our command. Some of the fourth year class by October have had some elective exposure and hopefully will be able to use their experiences to make a more enlightened decision. Many students choose an elective which concerns an area of medicine in which they are interested as a career and such use of this eight week period is very rewarding. For example if you are interested in general practice in a smaller community spending time in such a practice may aid you in making a realistic appraisal of the type of practice you would be involved in and what special qualifications if any would be advantageous. If on the other hand you are interested in a specialty it may be of particular interest to work in a non-university centre where the majority of specialists in most fields are found. Fruitful use of elective free time during the week in third year may also provide information in specialty areas.

Some practical points are that before choosing a particular hospital or program as your first choice try to discuss it with someone (preferably a former or present intern) who has first hand experience with the program. This will provide you with a more in depth view than can any pamphlet. If you are particularly interested in one program (internship or straight) I would strongly suggest visiting the hospital in person if humanly or financially possible. Nothing will impress a co-ordinator more than a student who is interested enough to spend the time to visit and discuss his future with the people involved in his selection. I think this is especially important in straight programs outside of London and in highly sought hospital internships (New Westminster). Although most students receive their first choice, a few will receive their third or fourth choice so make all your choices carefully. Another frequently mentioned point is to try to take your internship in the same hospital program in which you later may apply for specialty training and in general this may be true.

I do not believe that the medical school should structure your decision-making concerning your future as it has structured your undergraduate teaching but more awareness concerning the problems of the final year student would certainly be of value. A subcommittee of the Academic Policy Committee has made some suggestions which are both useful and feasible. One important suggestion concerns the setting up of a library of information in which information concerning all fourth year electives and all available internship programs (mixed, straight, rotating, or family practice) would be kept in some central area with easy accessibility. This data centre could also contain residency program information and if each department involved in Western's residency training could write a short summary in booklet form of qualifications needed to enter the program, courses needed to obtain the fellowship and projected needs for certain specialty areas, the student would certainly be better prepared to make a realistic choice. One specialist should be appointed by each department and he should be in charge of dealing with inquiries concerning that specialty so that some continuity of information is presented to the student. A

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Endocrinology and Metabolism: Prototypic of Future Medicine

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Curriculum changes in progress at this medical school make an early career choice advantageous to the undergraduate student. At the same time the students are increasingly required to choose their own course content. I am grateful for the invitation by the editor of this Journal to define the field of clinical endocrinology and metabolism, currently recognized as a sub-specialty of internal medicine, and to identify characteristics of importance to students attempting to develop the objectives of their curriculum. The relationships of this branch of medicine to molecular biology almost guarantees that every student, from the future psychiatrist to the future surgeon, will as a practitioner be affected by developments in this field. Every student therefore, should consider what portion of his undergraduate and postgraduate teaching programmes should be directed to its study.

The selection of a career in a branch of medicine has been faced by medical students since the Renaissance, when apothecaries, barbers and midwives were in demand. Motivations and methods of reaching this decision have no doubt been discussed by others over the past few centuries. Many of you will have made a firm career choice before entering medical school. For those whose options are still open, the factor in the decision-making process that I will deal with is the vitality and nature of this branch of medicine.

It is usually accepted that an examination of past performance will provide a reasonable insight to future developments. In a metaphorical sense, endocrinology and metabolism may be said to have roots in the four humours of ancient medicine, although the hematologists and gastroenterologists might lay claim to blood and yellow bile. The humours were analogous to the hormones of modern times, circulating messengers, which regulate in various ways the conversion of food into energy, and of energy into chemical and physical work, the disorders of which constitute the modern clinical specialty. The branch sprouted hesitantly with descriptions in the mid-nineteenth century by Addison of adrenocortical failure, and by Graves and Basedow of hyperthyroidism with goitre and exophthalmus. Its growth gained momentum through a developing relationship with biochemistry, as exemplified by the work of Claude Bernard on carbohydrate metabolism. In this century the clinical application of discoveries in biochemistry and physiology have been applied in large part by specialists in this field, accelerating its growth tremendously. The discovery, isolation and synthesis of the many hormones has had great impact on clinical medicine: Canadian contributions to the discovery of insulin and of parathyroid hormone (Dr. Banting and Dr. Collip both had close ties with this medical school) and of calcitonin are salient. Diseases of high prevalence assigned usually to the field include diabetes mellitus, obesity, hyperthyroidism, and osteoporosis. Functional diseases of the hypophysis, thyroid, parathyroid, adrenal glands, the gonads and the endocrine pancreas constitute the main areas of the specialty. Diseases related to nutrition, lipid transport, genetics, hypertension, and certain hormone dependent malignancies are also commonly managed by endocrinologists. The accelerating rate of growth of this specialty may be expected to continue into the future, and to dominate other fields which though longer established, are based on organ (e.g. cardiology) or cellular (e.g. clinical pathology) systems. This evolutionary process is breeding its own sub-specialties (e.g. reproductive endocrinology, neuroendocrinology). Ultimately the molecular basis for most biological events will be known meaning that a whole new set of career specialties, perhaps not yet dreamed of, will be available for the consideration of the medical student of the twenty-first century.

There is no doubt that the principles and many of the details of this "molecular medicine" are already being developed and practiced—to a large extent by basic and clinical scientists whose primary interest is in some aspect of endocrinology or metabolism. In an effort to encourage the future practitioner to see clinical disease in basic molecular terms, Professor Rubenstein at

McGill University is using clinical presentations of endocrine cases to exemplify to students basic biochemical principles (e.g. lipid catabolism: diabetic ketoacidosis).[1] The future use of enzyme substitution therapy for the correction of inborn errors of metabolism (e.g. glycogen storage diseases) will utilize principles developed by individuals familiar with the use of hormone replacement therapy. The massive outpouring of detailed biochemical information, subdividing and categorizing various diseases, will continue and will be most easily dealt with and assimilated in a continuing education sense, by those who have had previous training in the principles and background of this specialty. Technical developments likely to change the nature of clinical practice in this specialty in the near future include the ability to categorize hypertensive patients as to certain endocrine factors having therapeutic implications, the development of vitamin D analogues with selective effects on calcium and bone metabolism, more precise radiotherapy for Graves' disease, the application to insulin therapy in diabetes mellitus of an implantable glucose sensor, pancreas transplants and the application for diagnosis and therapy of specific pituitary hormone releasing factors. To apply new knowledge of this sort to a maximum number of people in the most efficient manner, new modes of practice will be necessary. Diabetic day care centres, genetic diseases screening programmes (e.g. Tay-Sach's disease, phenylketonuria), nutrition clinics (e.g. for the dietary therapy of hyperlipoproteinemia) are undoubtedly the precursors of a variety of such new programmes.

One may further speculate about the impact of such developments upon the individual physician. There seems to be a theme of prevention (as opposed to crisis intervention) of the onset of primary disease (e.g. myocardial infarction in a case of hypercholesterolemia), of the relapse of chronic disease (e.g. perhaps in a patient on an enzyme substitute programme) or of postponement of complications (e.g. in diabetes mellitus), combined with a requirement for good follow-up (needing paramedical personnel) and technical resources (a good laboratory). To the extent that this type of medicine is a form of ambulatory care, it is clear that the future primary care physician must be aware of these clinical problems, their solutions, and be prepared to supervise paramedical personnel dealing with them. At the present time the family practitioner should be able to maintain established programmes of diet and pharmacotherapy for stable diabetes, obesity, thyroid dysfunction, hypertension and hyperlipoproteinemia.

I find the effect of these events on the skills necessary to the successful general internist hard to predict. At the moment he should be able to diagnose and establish therapy in all of the above conditions, manage unstable diabetics, and be prepared to manage patients established on therapy for more complex forms of pituitary, adrenal and gonadal dysfunction. Perhaps he will become more of an endocrinologist, whose skills I feel cannot fail to be in increasing demand over the next two or three decades. Today's endocrinologist has a unique opportunity to apply the basic principles of biochemistry and physiology to his everyday practice. He is required to deal with a variety of problems the solutions to which require contributions from individuals with a variety of skills in hormone assay, nuclear medicine, radiology, surgery and nutrition. At the present time the technical organization required to practice this type of medicine is only found in university centers. As one of the great problems of the future will be to create the necessary facilities for the efficient application of molecular medicine to large numbers of people, physicians trained in endocrinology will be sought out. Therefore those training and practicing in this speciality will be developing skills very relevant to future modes of clinical practice and in fact will be pioneering the development of newer health care delivery systems, which will inevitably supplant the "hospitals" and "operating rooms" of the twentieth century.

Although the primary physician, internist, and endocrinologist will absorb large portions of the impact of "molecular medicine" on clinical practice, other fields will do likewise. The student interested in psychiatry or neurology for instance, should be aware that significant developments in his field could be based on the interactions of the hypothalamus and the hypophysial hormones; in surgery on glucagon and protein catabolism; in obstetrics on placental hormone production; in gynecology on gonadotropin secretions; in pediatrics on growth and development; and in nuclear medicine on mineral metabolism.

The fundamental nature of this specialty will impress itself upon the student as he examines the medical curriculum and experiences the courses: a point of view will be taken on the subject by every basic science department. However particular attention should be paid to the contributions of the biochemists and physiologists. Hopefully in the new curriculum more perspective will be achieved than in the past by the trend to

systems teaching, and by the participation of more clinical scientists in the basic science programmes, facilitated now by the proximity of the University Hospital. At this stage in the student's career reference may be made to one or other of the large standard textbooks,[2] but Osler's admonition should also be borne in mind: "let the old men read new books; you read the journals and the old books",[3] at least as far as the journals are concerned. You will be amazed at the amount of endocrinology in the "general" journals such as *Lancet* and *The New England Journal of Medicine*. The larger amount of elective time will permit the student to join exponents of the specialty both on the wards and in the the laboratory. The clinical programme in the department of medicine is based on the activities of primarily Dr. R. Green (Victoria Hospital), Dr. B. Wolfe (University Hospital) and Dr. G. Tevaarwerk and myself (St. Joseph's Hospital). Undergraduate and postgraduate teaching programmes and interhospital rounds are coordinated by this group with the cooperation of Dr. M. Jenner (pediatrics) and Dr. E. Plunkett (obstetrics) who directs a large group of reproductive endocrinologists at the University Hospital. Valuable experience may be gained in ward rounds and out-patient clinics at the various hospitals and in the near future in the Diabetic Day Care Centre at St. Joseph's Hospital. Most of these individuals direct active research programmes, e.g. Dr. B. Wolfe—lipid metabolism, Dr. G. Tevaarwerk—calcium metabolism, and in my own case—insulin action. With the facilities now available here, clinical study and experience can be gained suitable for almost any career requirement. For those who are considering a career in the specialty, it is worth noting that in the near future an examination for certification will be instituted by the Royal College of Physicians and Surgeons of Canada. Within the standard four year postgraduate medical training programme a minimum of two years training in the specialty will likely be required in order to sit this examination. The specialty is represented nationally by the Canadian Society of Endocrinology and Metabolism and the professional section of the Canadian Diabetic Association. In addition to the group here at Western, large and productive groups of academic endocrinologists are located at McGill and McMaster Universities, and the Universities of Toronto, Manitoba and Alberta.

I have attempted to describe the place of clinical endocrinology and metabolism as a branch of medicine in the past, present and future. Every practitioner draws upon the field in some way, and this may be expected to increase. As a discipline endocrinology offers the prospect of specific and precise therapy, based on the direct application of fundamental physiological and biochemical principles. The approach and technology of the endocrinologists are prototypic of those which will be required to apply newer medical knowledge based on molecular biology to clinical and community health problems.

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Decisions: General Practice or Specialty Training

(Continued from page 91)

night could be set aside once or more a year for each specialty and for family practice at which time interested students, interns, and doctors could acquaint themselves with the areas in which they have some interest. Another area which may be helpful to students is aptitude testing, this could be completely voluntary and made available to students having particular difficulty in making their minds up. In time better tests could be evolved which could be used before, during and after your medical training to aid you in choosing your future.

The decisions concerning the future will certainly be less emotionally trying for the student if he makes them from a solid information base. The student would hopefully spend less time in programs which are not what he really desires.

Each student will always stand by himself on life's precipice but if only some of the clouds of confusion can be dispersed his particular role to play in the medical panorama may flower before him.

The Burden of Bangladesh

Ray Corrin

Saw the people standin'
Thousand years in chains
Somebody said it's different now
Look it's just the same
If you see the answer
Now's the time to say
What I want—all I want
Is to get you down to pray.

—*J. C. Fogerty,*
"Wrote a song for everyone"

The Indian subcontinent, racked by wars, famine and pestilence for centuries and still recovering from the wounds of the 1971 war, was recently the site of my elective. Specifically, I worked with two American (1 surgeon, one OB-GYN) and two Bengali doctors at Memorial Christian Hospital, a 55 bed facility in the south of Bangladesh near the Burma border.

Medically, things were expectedly incredible. The mind-throttling pathology that is encountered daily as a matter of course was difficult to adjust to at first. Every morning I would get up and try to gear myself for the wondrous new sufferings of the day.

Leprosy, TB, malaria, tetanus, smallpox, typhoid, kala-azar (quick somebody—what's the organism?) are seen with discouraging regularity. Most of the common North American maladies are of course present as well, with a few notable exceptions (e.g. coronary artery disease). Peptic ulcer and Buerger's disease seem to be more common than they are here, for a variety of possible reasons. Surgical conditions were often terrifically advanced before the patient would seek help. Examples that Dr. Pete Macfield and/or Dr. Donn Ketcham and/or Dr. Joe DeCook and I attacked included: an 11 pound hydronephrotic kidney, a 20 pound ovarian tumour, a tennis-ball sized tumour of the orbit, and a 12 day old open fracture of the tib-fib in an eight year old boy.

Trauma abounds—water buffalo gores (nearly always within a few inches of the rectum), dal wounds (dal=a machete-type all purpose knife), fractures from falls. Gunshot and other weapon injuries were seen frequently. Many weapons left over from the war have been sequestered for personal use, and bands of roving dacoits attack innocent persons periodically. One morning I arrived at the hospital to find six men lying about on stretchers with various shrapnel wounds received when a hand-grenade was thrown into the audience at a drama in Cox's Bazaar the previous night. The victims had been kept there overnight (travel at night would have been too dangerous) and brought the 30 miles to MCH the following morning.

Local "doctors" (usually ignorant but well-meaning charlatans) often sent us horrendous "referrals". One man with a giant fungating sarcoma of his shoulder who had refused forequarter amputation returned a week later having had it treated by the insertion of a hot poker. You guessed it, he now wanted treatment for his sarcoma plus his newly acquired tetanus. What would you do?

A popular 'cure' for sciatica was to place a small plug of wood over the common peroneal nerve at the fibular head (don't ask me how they knew the anatomy) and secure it tightly with a strip of cloth for a few weeks. In time this would erode through the superficial tissues and destroy the nerve. The patient sometimes ended up with osteomyelitis of the fibula, etc., but it sure did kill that pain, at least temporarily.

Outright starvation was not common, but there are millions walking the fine line. Nearly every other person has a sore tongue, can't see in the dark, has paresthesiae, etc. Close to 80,000,000 Bengalis populate a land mass the size of the state of Wisconsin, resulting in a population density of 1,300 per square mile. Children are everywhere. They crawl out of the grass at the side of the road, stand and stare for hours in the crowded marketplaces, and ramble through the busy city streets crying "bakshish" (i.e. handout) to susceptible-looking passers-by. Population control efforts are being made but results so far are not hopeful. The increase per year is now 3.6%.

Islam rules the souls and minds of 85% of the Bengali people. Beggars roam the streets outside magnificent mosques. The government is officially secular but any

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Some Social Aspects of Family Planning

Charles W. Smiley

The family physician encounters an incredible number of psycho-social problems in his practice. One of the most sensitive and difficult is providing counselling in the areas of sterilization and therapeutic abortions. It is even more difficult when the patient is mentally retarded or when you are working with a family who has a retarded member. This article will attempt to provide some basic guidelines for the family physician who has to meet this challenge.

I am the Chief Social Worker of the Rockwood Mental Retardation Unit of Kingston Psychiatric Hospital located at Kingston, Ontario, Canada. During the past five years Rockwood has been involved in over 300 cases where sterilization and/or therapeutic abortions for the retarded were considered. Many of these people were in-patients. However, a large percentage were retarded people living in the community. Virtually all of these people were referred to Rockwood by family physicians. At Rockwood we provided an out-patient clinic to nine counties. We spent considerable time and energy in sterilization and abortion counselling. This article is based on the information and knowledge gained from those experiences.

The problems concerning sterilization, therapeutic abortion and mental retardation focus in two main areas.

I. The improvement of the physical and emotional health of the retarded patient by eliminating or limiting the stresses of child bearing and rearing.

II. The *primary* prevention of potentially severe mental retardation in certain "high risk" pregnancies.

Concerning item number one, the first principle would seem to be:

Ia. The assessment of a patient as to her suitability for abortion or sterilization on the grounds of mental retardation must include psychological testing, assessment of the patient's social situation and a psychiatric interview.

The objective assessment of limited cognitive abilities require the skills of a psychometrist or a psychologist. The diagnosis of mental retardation implies the patient has scored below 70 on a well standardized intelligence test. In order for the family physician to obtain the psychological testing, the home assessment and the psychiatric interview it may be necessary for him to use community and governmental facilities. Every county in Ontario is covered by a Mental Retardation Clinic provided by the Ontario Department of Health. This would seem to be the most appropriate referral source. In terms of genetic counselling and services there are clinics in Hamilton, Kingston and London. The Ontario Department of Health would have specific and detailed information. In the other provinces the family physician would have to contact his provincial health department.

The main handicap in mental retardation is usually seen as a cognitive one. This would include defects in thinking, learning and calculation. However, an assessment of the retarded patient must also consider the affective or emotional factors. It is not surprising that the mind which is defective should also lack balance. As a rule, the mental defect is accompanied by more or less mental instability. The degree of stability varies markedly in different retarded individuals and at different times in the same individual. Some are simply giggling, emotional, and impulsive, liable to sudden fits of waywardness, but readily controllable, and capable of living reasonably normal lives. In others, however, the instability is more persistent and the person is so changeable and undependable that major problems are an ever-present factor.

The above would include the majority of the retarded. However, there are retarded individuals who are quiet, good natured, placid, inoffensive, and who go on their way comparatively unmoved by the happenings of life. They are not insensible to pleasure and they exhibit delight. They are conscious of and affected by praise, rebuke or ill treatment. However, their joy or sorrow is neither excessive nor of long duration and their general demeanor is that of happy placidity.

Ib. When the social assessment reveals the patient cannot function as an independent citizen or where the psychological testing reveals an I.Q. of 55 or less the consent of the patient is inadequate and an appropriate substitute must be found.

Laidlaw and Bass[1] in their discussion of sterilization have concluded that "the individual who is capable of living in the community is able to understand the meaning

of the operation and is almost always willing to have it." This would include therapeutic abortions. It is suggested in cases where the retardate lives independently in the community no further consent is needed or required. However, if the patient is married, the consent of the husband should be obtained. If the patient is to some degree dependent for support from her family, then their consent should be obtained. In all cases of an I.Q. under 55, the consent of the family must be obtained.

The OMHA publication "The Law and Mental Disorder"[2] deals with the special case where the patient is considered incompetent, is hospitalized, and no next-of-kin is available. It states, "the superintendent may authorize action by the physician in charge but it is advised the superintendent first must have a consultation with another medical person as to the need for treatment."

Ic. Sterilization and abortion should be recommended and should be easily available for retardates when their I.Q. is less than 55. This should also be true for retardates with an I.Q. range of 55 to 70, where significant "emotional instability" factors are present.

For the purposes of discussion in this section. I propose to divide retardation into two categories, "slight" and "marked". The I.Q. of 55 will divide the two divisions.

I agree with the British recommendations[3] that marked retardation is definite grounds for abortion. Because of the inability of this group of patients to make use of contraceptives I feel sterilization should be recommended. The modern trend of management in mental retardation is to keep as many of the retarded as possible in the community. The sense of relief provided to the families of the retarded and to the community itself when the risk of reproduction is no longer present allows the patient a degree of freedom not hitherto available. In the traditional environment of the isolated institution where the sexes have been segregated reproduction was not a major problem. This is not the case in the community. The behavioural abnormalities, such as aggressivity and extreme dependence, which seems to be a reaction to excessive surveillance and which themselves have added to the patient's handicaps are prevented.

In the cases of "slight" retardation, the the indications are less clear and the evaluation of the patient's emotional stability and social situation assume relatively more importance. The retarded are more prone to emotional instability.[4] Another factor is the retarded parents ability to satisfactorily care for their children rapidly declines when their family extends beyond two children.[5]

I would suggest sterilization or abortion be recommended and available in all cases where the retardate is rated as emotionally unstable. For the stable retarded sterilization or abortion should be available and recommended at any time after two children are born. A previously stable retardate, who becomes unstable after the birth of her first child should be recommended for sterilization.

Concerning primary prevention, the basic guideline would seem to be:

IIa. The deleterious effect on the health of the mother in caring for a severely retarded child is grounds for sterilization or abortion. This is in cases where the risk of a birth of such a child is demonstrably increased.

There are a number of situations where sterilization or abortion are indicated because of an extremely high risk compared with the general population, that a child would be born retarded. Lists of these situations are being compiled and should be available at local Mental Retardation facilities. New preventive techniques such as amniocentesis are being researched. These techniques promise to make intervention more reliable and selective. I would suggest the family physician document each case and make the information available in the professional literature.

There are a group of cases where the genetic risk is less clear but still present. As an example one can use the mother over 35 who is concerned about having a child with Down's Syndrome (mongolism). The British Medical-Psychological Association memo on therapeutic abortion[3] states, "where the parents already have children, the termination of a pregnancy in which the risk of abnormality in the child is substantially enhanced would appear to be justifiable." In my view, this seems appropriate. With the current legislation in Canada, the risk may have to be considered from the point of view of the health of the mother. However, the deleterious effects that raising a severely handicapped child can have on the mother's physical and mental health are well documented.[6] In my opinion, they justify both abortion and sterilization.

Consideration of the genetic aspect in mild mental retardation reveals the evidence is less clear and at times apparently contradictory. It seems advisable to consider

mild retardation in the context of risks to the mental and physical health of the mildly retarded mother.

In conclusion, I would like to restate the following points:

Ia. The assessment of a patient as to her suitability for abortion or sterilization on the grounds of mental retardation must include psychological testing, assessment of the patient's social situation and a psychiatric interview.

Ib. When the social assessment reveals the patient cannot function as an independent citizen or where the psychological testing reveals an I.Q. of 55 or less, the consent of the patient is inadequate and an appropriate substitute must be found.

Ic. Sterilization and abortion should be recommended and should be easily available for retardates when their I.Q. is less than 55. This should also be true for retardates with an I.Q. range of 55 to 70, where significant "emotional instability" factors are present.

IIa. The deleterious effect on the health of the mother in caring for a severely retarded child is grounds for sterilization or abortion. This is in cases where the risk of a birth of such a child is demonstrably increased.

These are the basic guidelines that were developed at the Rockwood Mental Retardation Unit. I hope they will be of some interest and value to the practicing family physician.

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The Burden of Bangladesh

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Muslims who let it be known that they have doubts are severely socially ostracized and sometimes worse.

The burden of Bangladesh—a heavy one indeed.

The question I'm most frequently asked since returning is usually along the lines of "What did the experience do to you?" A resident who had been to India told me before I left, "It'll change your life." I suppose it did.

Dr. Merv Vincent of Homewood Sanitarium in Guelph states in a recent article "One of the most immoral trends in medicine in recent decades has been the steady immigration of physicians from the 'have not' to the 'have' countries." The ratio of doctors to population in Canada is 1:740. In Ghana it is 1:16,000, in Nepal 1:72,000, in Cambodia 1:95,000. I don't have overall figures for Bangladesh, but at MCH four doctors served an area with at least several hundred thousand people.

What kind of a man would spend his life there? Well you can bet he doesn't read Playboy, or drive a Cadillac, or go pubbing Saturday nights. He doesn't vaunt his prowess at noon rounds, or tongue-lash his residents, or intimidate nurses, or even 4th year med students. He lives close to the earth. Close to God.

And it's too bad there aren't more like him. But it's corny to be a 'missionary doctor' isn't it? No class. The days of "white man's burden" are passé. Or are they?

What did Bangladesh do to me? It left scars on my heart, that's what.

"Boy, you're gonna carry that weight
Carry that weight a long time."

The Effect of Personality Types on the Pathogenesis of Atherosclerosis

Doug L. Woolley, '75

The impetus for this review has been the result of a combinatoin of many factors, the main one being the lack of an effective personal treatment for one of modern mankind's major medical maladies, Coronary Artery Disease (CAD).

The literature is saturated with studies on groups concerned with one variable or another that the experts claim produce cardiac proneness. However it seems that no matter how much saturated fat is consumed, how many cigarettes are smoked, how little exercise is present, how obese the groups are, or how many of their ancestors have suffered cardiac ailments, there is still a good proportion of the population that escape this crippling problem and go on to use and abuse their body systems until they meet their nemesis in some other form.

As a result, there are many professional and lay people who realize this situation, and when they are confronted with their own high index of cardiac proneness, they either: (1) decide not to change their life style (they are, after all, still "healthy" and competent); or (2) make a rapid transformation in their life style as a result of their fear for the "predicted" impending illness.

Paradoxically segments of both groups go on to escape CHD, and unfortunately the remainder suffer what they had hoped to avoid. For the people that have encountered this situation, there soon comes a realization that their doctor's prescription for healthful living is basically common sense that men like Osler advocated over 70 years ago for cardiac patients (i.e. (1) avoidance of tobacco and rich food, (2) a program of graded physical exercise, (3) elimination of emotional stress).

What is even more mystifying, is that this problem was practically non-existent two centuries ago. For even in the era of classical clinical descriptions it was not until July, 1768 that the first case of Angina Pectoris was recorded by Dr. Wm. Heberden; this was later diagnosed by Edward Jenner in 1776 as a malady afflicting the coronary arteries.[1]

It is perhaps this last fact more than any other that has caused so many researchers to hypothesize as to what has changed in this modern age that makes man more susceptible to CHD. In the past there were people of the upper classes, who ate, drank, and smoked excessively, had little exercise, and in fact poorer health care, and yet did not seem to suffer this contemporary illness.

While the studies of Rosenman et al. have not found a clear cut solution for the individual, they postulate about the concept of a personality type that is cardiac prone as a result of his life style; this seems to fit in with today's thinking of an organism interacting with his environment. And as Osler stated at the turn of the century, "in the worry and strain of modern life, arterial degeneration is not only very common but develops at a relatively early age. For this I believe that the high pressure at which men live and the habit of working the machine to its maximum capacity are responsible, rather than execesses in eating and drinking." Interestingly enough this supports the hypothesis of Toffler in "Future Shock" which continually reiterates the hypothesis that modern man is forced to continually increase his limits of tolerance so that he can function effectively in this modern society.[2] Also, naturally different people have different stress loads, different stress tolerances, and especially different reactions to stress. It is this reaction to stress, in the form of an overt personality type that Rosenman claims predicts an individual's prediliction to CHD.

While there are many researchers that doubt the soundness of this hypothesis, a thorough epidemiological study of CHD[3] indicates that there is a lot of information to be synthesized from what at first appear as gross indications of coronary proneness. For instance these are some of the questions that Rosenman hoped to answer by proving a personality type is likely responsible for this:

(1) Why do different countries, regions and groups have higher rates of CHD (i.e. urban individuals are more susceptible than rural individuals, North American born are more susceptible than European born, men are more susceptible than women, married individuals are more susceptible than single, some workers are more susceptible than executives, rising executives are more susceptible than static executives?

(2) Why do the common indicators of blood pressure, serum cholesterol, obesity, smoking, genetic inheritance vary with time, and act only as crude indexes of approaching disaster?

(3) Why does the serum triglyceride level rise when carbohydrate replaces lipid in diet?

What is the Cardiac Prone Personality, and How is it Determined?

It is commonly recognized that personality is made up of two components—i.e. genetic and environmental. There is little doubt that the influence of the parents (genetic) will be a more predominant contributor to the development of personality if the individual is not exposed to a varied and/or stimulating environment. Thus his personality will be essentially the combined reflection of his parents', for it would seem that inheritance provides the multi-faceted base for personality, and its subsequent development depends largely on the environment to which it is exposed. In the early clinical descriptions there was a certain acquired personality that seemed to predispose a patient to the onset of CHD.[1] Similarly it is this personality (Type A), and the means by which it is acquired that has consumed most of Rosenman's research.

According to Rosenman, type A personality belongs to an individual who has an excessive competitive drive, a persistent involvement in multiple functions subject to "deadlines", and a habitual propensity to accelerate their pace of living and working.[4] Their laboratory findings reveal, an increased serum cholesterol level, a seven-fold increase in coronary artery disease, three-five times as much arcus senilis, and faster blood clotting times, when compared with a control group with a personality type "B"[5]. The groups were essentially identical in terms of weight, age, height, diet and caloric intake.

Different methods have been used to determine this overt behaviour pattern. The first method employed was the interview technique. This required specially trained physicians and personnel to interpret the subjects responses to a list of specially-structured questions. The behaviour pattern was determined far more by the atylistics of the subject (motor reactions, quality of voice) than by the content of the answers. This all was reproducible with EKG and abnormal roentenograms, but was, unfortunately, a time consuming procedure and could involve some bias.[4,6,7]

A psychophysiological test was designed which used tape recording of two monologues that frequently interrupted each other. One of these monologues, the challenge monologue, consisted of inane subject matter that was delivered repetitiously in a slow, hesitant manner. The respiratory excursions, body movements and possible indulgence in hand clenching were graphically recorded as they listened to the two monologues. It was found that the group of patients with coronary heart disease exhibited respiratory and hand clenching phenomena that clearly differentiated them from type B.[4]

Another method of segregating Type A and Type B behaviour patterns is by means of voice analysis while reading an emotional passage.[8] It has been noted that the majority of Type A employ an explosive or semi-violent accentuation in the rhythm of their speech, are eager to do well at any task they perform, and have latent hostility.[9] Therefore it was not surprising to find amongst type A and CHD subjects, an increased amount of harsh, explosive speech rhythms during the hortatory period of reading.[8]

The most recent attempt to diagnose the Type A behaviour pattern is the development of the Jenkins Activity Survey. This as a self-administered, machine-scored test that measures three behavioural syndromes (i.e. hard-driving, job-involvement, and speed/impatience),[10,11] After repeated testing it was found that the results from this test coincided about 70 percent with the results achieved from interviews for diagnosing Type A and Type B behaviour.[12] However, in testing individuals with recurrent CHD, it was found that those subjects who suffered two attacks scored significantly higher than did those who suffered one attack.[13]

A Comparison of the Distinguishing Features Between Type A and Type B Behaviour

As was previously mentioned Type A behaviour was associated with increased self-imposed stress and subsequently increased CHD.[5,14,15] However in studying the effects of stress with behaviour type A, it was found that with individuals under stress (students during exams, accountants near tax deadlines, blind men learning to walk) the serum cholesterol levels increased, more norepinephrine was excreted daily, clotting times were faster.[14] Hemodynamic effects did not seem to be "wearing out" the coronary vasculature, for the heart rates between type A and type B were essentially identical.[16] However one of the most interesting differences between the two groups was the higher average serum triglyceride and B-lipoprotein values in fasting subjects with behaviour pattern A.[17] These

findings suggested possibly there was a difference in the metabolism of trigycerides between type A and type B.

Thus a standard fat meal was fed to two groups (type A and B). The pre- and post-prandial tests revealed that the average fasting serum triglyceride, cholesterol and phospholipid values of the "A" subjects were significantly greater than those of the "B" subjects. Following the meal, the average serum triglyceride rose much higher and remained relatively higher, for a longer period of time in subjects with pattern A than those with pattern B. The serum free fatty acid content was essentially the same in both groups before and after the meal. The observed differences in serum triglyceride behaviour did not appear to be due to differences in the circulating phase of the heparin-induced lipoprotein-lipase system. Also following the meal, marked sludging and capillary ischemia were found in the conjunctival tissue of 100 percent of the type A, while it was present in only 25 percent of the type B.[18]

In other studies the increased serum triglyceride did not appear to be due to a lipoprotein lipase deficiency,[19] nor to increased alcohol consumption[20]. In fact the only discernible defect in glucose metabolism in Type A behaviour was the increase in triglyceride levels in the serum that came from the liver.[21] Since serum triglyceride levels vary with the state of the triglyceride pool, the removal of chylomicrons, the state of digestion and absorption, and since all of the aforementioned vary with behaviour, it seemed logical to study the effect of administration of ACTH (corticotropid in lyophiligeclasdgel form). Interestingly enough this led to a decrease in the abnormal serum levels, except in Addison's disease (adrenal cortical hypofunction), in which there was not a decrease in abormal serum levels. Therefore the decrease in triglyceride in Type A behaviour is likely due to the release of some hormone(s) other than epinephrine or hydrocortisone (but possibly still under the influence of ACTH). This hypolipemic effect of corticotropin was not found to be due to its possible lipotropin or growth hormone content.[27],[23] In animal studies it was found that likely dietary cholesterol and endogenous cholesterol have different pathogenic properties. When newly growing connective tissue was presented with crystalline cholesterol or chylomicronous cholesterol (diet-derived), these forms tended to persist indefinitely and led to the subsequent retention of excess triglyceride. On the other hand endogenous cholesterol in lipoprotein form did not display either of these characteristics.[23]

Since it has been found that one of the extra-adrenal effects of ACTH was the stimulation of the pancreas, leading to an increased release of insulin (and possibly glucagon), and that some types of hyperlipemia have been ascribed to derangement in carbohydrate or insulin metabolism; it seemed possible that the observed effect of ACTH is lowering plasma triglyceride might be due to the insulinogenic action of the hormone.[25] Therefore the responses of hyperlipemic subjects to carbohydrates, pancreatic hormones and prolonged fasting were studied. It was observed that fasting for up to 38 hours did not lower further the ordinary fasting (overnight) plasma triglyceride of the subjects, nor could the latter be lowered by the administration of glucose. However, the usual post-prandial hyperlipemia occurring in the subjects after a fat meal could be diminished significantly by the administration of either glucose or fructose, but not by insulin, tolbutamide or glucagon. However in diabetic subjects (with ketosis), insulin lowers the increased triglyceride levels because of deficient lipoprotein lipase activity. This tended to confirm the suspicion that this type of hyperlipemia was chiefly of an endogenous origin.[26]

The responsiveness of the adrenals to ACTH was then tested in Type A and B behaviour, by administering it exogenously and endogenously (via metyrapone). There was a decreased adrenal response (due to a decreased adrenal reserve because of continued discharge of ACTH) in Type A subjects. This was determined by measuring the urine concentrations of 17- hydroxy-corticosteroids.[27]

Hypercholesterolemia in rats could be induced with electrolytic lesions in the fornix, the medial part of the lateral hypothalamus and one of the two medial nuclei. However there was no change in the plasma triglyceride levels.[28],[29]

Since the metabolic pathways used by individuals produce different constituent serum levels, a test of 19 type A and 14 type B subjects revealed quite marked biochemical characteristics. The group of coronary-prone subjects not only exhibited abnormally high plasma triglyceride (both before and after fat feeding) and cholesterol levels, but also a hyper insulinemic response to a glucose challenge. There was also some evidence of a decreased content of growth hormone in the plasma of the same coronary-prone subjects. Plasma levels of free fatty acids, uric acid, glucose, cortisol, and thyroxine, however, were not elevated, in these subjects.[30]

Continuing with their carbohydrate metabolic studies, Rosenman et al. studied the effect of low sugar intake, for 60 days, upon blood lipids and insulin levels of six hyperlipemic (Type IV—increased triglyceride and pre-beta lipoproteinemia) subjects. It was found that this restriction led to a moderate weight loss, a normalization of their previously elevated pre-beta lipoprotein levels, and a moderate decrease in their pre- and post-prandial hyper-triglyceridemia. The elevated serum cholesterol and pre- and post-prandial serum insulin levels were not normalized by the dietary change.

Since (1) elevated plasma cholesterol is likely due to some intermediate in the metabolic pathway, which is controlled via hormonal action, and (2) it was noted that the mean fasting plasma human growth hormone (HGH) content was lower in type A than type B, Rosenman et al. decided to test the response of HGH to arginine hydrochloride infusion (HGH stimulator) in both types of behaviour. The average resting and post-arginine hydrochloride infusion plasma growth hormone concentrations of type A subjects were found to be significantly lower than those of type B. This difference did not appear to be a fixed one, but was related to the intensity of the behaviour pattern present at the time of testing.[32]

It was found that in rats subjected to either a hypophysectomy or thyroidectomy, hypercholesterolemia usually resulted, and that this abnormality could be prevented by the administration of growth hormone.[33,34] This may have been due to an enhanced rate of growth of pancreatic x-cells, and also increased stimulation of these cells to secrete more glucagon.

The chronic administration of glucagon resulted in the reduction of the normal plasma-cholesterol of stock-fed rats and prevented completely the occurrence of hypercholesterolemia regardless of their exposure to hypercholesterolemia-inducing processes. Thus, this hormone seemed to be the most potent endogenous control of plasma-cholesterol in the rat.[35]

CHD in the Western Collaborative Group Study: A Long Range Prospective Follow-Up

In order to help validate the hypothesis of a coronary-prone behaviour pattern, a prospective study on CHD was initiated in 1960 among 3,524 subjects at risk for its subsequent occurrence. The subjects were between 39 and 59 years of age, and restudied at annual intervals.

The first follow-up of 3,182 subjects at two years (mean two and one-half years) revealed that seven percent of the subjects had incurred the advent of manifest CHD. It turned out that only when the diastolic blood pressure was elevated or the serum lipids (cholesterol and betalipoproteinemia) or both, in association with the type A behaviour pattern that these factors carried a marked prognostic indication of CHD.[36]

At four and one-half years, subjects were compared with recurring and nonrecurring myocardial infarction; in subjects with fatal and nonfatal infarction were also compared. In the younger men (39-49) that had recurrent myocardial infarcts there was a higher frequency of hypercholesterolemia in type A behaviour.[37] In all ages that had recurrent infarcts, there was an increased frequency of heavy smoking and arcus senilis, an elevated serum B/X lipoprotein ratio, an increased frequency of diastolic hypertension, and a significant increase in frequency of Type A behaviour in both recurrent and nonrecurrent infarcts.[37] In comparing fatal infarcts to non-fatal infarcts, it was found that the fatal group had a significant increase in frequency of serum hypercholesterolemia and a history of decreased regular exercise. To a lesser extent there was an increased frequency of cigarette smoking, and increased B/X lipoprotein ratio. In both fatal and non-fatal infarcts there was a significantly higher frequency of Type A behaviour.[37]

Furthermore it was found that with an increased incidence of CHD there was also a positive parental history of CHD, and increased systolic or diastolic blood pressure, an increased frequency in cigarette smoking, higher serum levels of cholesterol, triglycerides and B-lipoproteins, an increased frequency of Type A behaviour.[30]

In the Western Collaborative Group Study there were 11 participating companies. Even though CHD seemed to be linked with increased serum lipoprotein patters, hypertension, positive familial history CHD, and type A behaviour—none of these factors could be linked to specific work activity.[39]

In using the California Psychological Inventory to test firemen and supermarket managers, it was discovered that men who were particularly adherent to social norms, who placed high value on being dependable, and overly conscientious were more likely to have a high serum cholesterol than men without these traits.[40] Also, in some groups, passivity, self-criticism, proneness to feelings of guilt may further elevate the cholesterol level.[40] Therefore, it seemed that excessive control on certain personality traits may lead to increased serum lipid levels.[41]

What About the Other Factors?

According to Rosenman et al. cigarette smoking does not show a distinct correlation by age with CHD. The most constant relationships was in the 39-49 age group with moderate and heavy smoking and type A behaviour.[42] Also, why don't cigar and pipe smokers have an increased frequency of CHD as cigarette smokers?[43] Could it be that cigarette smokers have a different behaviour pattern from cigar and pipe smokers? Could it also be that increased incidence of CHD associated with type A behaviour and lack of exercise is due more to the possibility that type A's don't have enough spare time to exercise?[43]

It seems strange that: (1) over the last 50 years, middle aged American males have ingested the same excesses in calories, fats and proteins in their diets, but have had a marked increase in coronary morbidity; (2) if inheritance was largely responsible for CHD, that natural selection would start culling out the weaker genes; (3) Haitian and Jamaica negroes ingest low fat diets and have low serum lipid levels, yet have as much atherosclerosis as their American counterparts, but a strikingly lower incidence of CHD; (4) while the frequency of coronary atherosclerosis and the increase in serum lipids has remained constant, there has been a marked increase in CHD; (5) many groups ingesting diets high in animal fat, have markedly less CHD than other groups with the same diet;[44] (6) while increased levels of estrogen protect the chick's vasculature from a high cholesterol diet, there does not seem to be any protection for the female woman in Italy nor the female negro, as their incidence of CHD is equal to their male counterpart.[45]

Criticism

Generally most studies are criticized because of a lack of systematic controls, and the studies of Rosenman et al. are no exception. However as Rosenman points out it is best to study the two extremes of behaviour to determine the relative merit of the variable under consideration. Other problems such as the selection of subjects and the population parameters seemed to be evenly distributed in their studies.[46]

One of the major problems in the preceding studies had to be the determination of the particular behaviour pattern. While different tests were employed, the most effective appeared to be the interview method. The problems encountered here were: that behaviour may have been consciously or unconsciously camouflaged; that neurosis could confuse the interpretation; and experimenter bias in the grading of behaviour.[4]

From other investigators the main criticisms were: how reproducible were the results of prospective studies by other investigators; and how accurate are personality profiles?[47]

Interestingly enough the main critics of Rosenman's research, are by investigators who have failed to recognize that in their own studies, they have used personality variables that have influenced their results.[48]

Conclusion

After having reviewed the work of Rosenman, there seems to have been more questions put forth than answered, regarding the pathogenesis of CHD and its prevention. However from their statistics, there seems to be an immunity to CHD if the individual possesses a type B behaviour pattern, a serum cholesterol level less than 226 mg./100 ml, a serum triglyceride level less than 126 mg./100 ml, or B/X lipoprotein ratio less than 2.01.[49]

Some of the questions have to deal with his recent work with glucagon and HGH[32],[33], and they are:

(1) It seems that a decrease in HGH is associated with an increase in serum cholesterol; then conversely will an increase in HGH result in a decrease in serum cholesterol.

(2) Glucagon seems to effectively prevent cholesterolemia. Does it achieve this by interfering with the synthesis of cholesterol and lipids? Is there a generation of hepatic cyclic A.M.P.? Does it increase gastric motility and secretion or inhibit pancreatic secretion and therefore affect the absorption or excretion of cholesterol?

No matter what the answers are, or what new questions may be raised it appears woefully clear that the omnipotent and ubiquitous treatment of prescribing strict diets, no smoking and exercise programs for CHD patients seems similar to a blind man searching into a bag of keys and pulling out the biggest key in hope that it will open the door to his new house; if, indeed, there is only one door. In fact this seemingly safe formula may possibly be the final straw, for imagine the anxious feeling of the chronic smoker who is forced to give up his relaxing habit and must replace it with a deep concern for his coronary vasculature; or the "good" eater who is forced into conscious diet control and instead of enjoyable and relaxing meals is faced with a stressful situation of counting calories that

may upset his digestion and metabolism.[50] Indeed a great deal of research has yet to be done into what are the metabolic changes in *individual* CHD patients during exercise, rest and stress. For all the evidence indicates that CHD is a product of our way of life and that measures designed to reduce the morbidity of this disease must relate to the total environment of the individual. It would appear insufficient to simply control the aforementioned factors without simultaneously attempting to alter the behavioural or personality factors which characterize the type A individual. Unfortunately, little can be done concerning genetic or parental factors, but certainly some modification in one's total environment and way of life can at least be attempted. In fact while exercise programs for post-myocardial infarcts seem to be in vogue the current research of R. J. Shephard's laboratory indicates that hypnotherapy is equally effective in rehabilitating these victims of CHD.

If indeed, in the near future a cure or prevention is found for the pathogenesis of atherosclerosis, it will be an idiopathic treatment, until we understand the neuro-endocrinology of this mind-body dichotomy.

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Class News

MEDS '74

With less than six weeks left in this, the last trimester of the academic year 1972-73, the vast majority of the class of Meds '74 have, like caterpillars, metamorphosized their characters from their usual qualities of amicability, frivolity and vertigo to that of diligence, courage and tenesmus, which will soon be required to face the ultimate upcoming challenge—that is, starting and finishing their community medicine essays before the deadline. Good Luck Fellow 74's.

On a less serious note and in view of the proximity of the final examinations, I think it both worthwhile and vital that each of the four medical years take time to assess its present academic status. As a guide for you I should like to present for your approval, the assessment which was related to me by a young but knowledgable Urologist.

A First Year Student—One who knows not; but knows not that he knows not. *Chastise* him!

A Second Year Student—One who knows not; but knows that he knows not. *Pity* him!

A Third Year Student—One who knows; but knows not that he knows. *Honour* him!

A Fourth Year Student—One who knows; and knows that he knows. *Worship* him!

The Med 74
Richard G. Haddad

* * *

Does a young M.D.'s personality point him toward any one medical specialty? Often it does, say psychiatrists at the University of Illinois. They found that medical students who acted aloof or unsociable with their first patients tended to enter depersonalized, technique-oriented specialties such as radiology and ophthalmology. "People-oriented" students, who acted in a friendly and helpful way toward their patients, usually became internists, obstetricians or general practitioners. Future surgeons turned out to be the most easily irritated, the most independent and the most resistant to restrictions imposed by authorities. Pediatricians showed the most understanding and empathy with their patients—but scored low on humility.

* * *

P--- D---s is putting out a new cold capsule, selling for $302.25. It contains ten grains of aspirin and a return air ticket to Florida.