

Gout

JOHN F. WOODBURY, M.D.

GOUT is a disease which has been known from antiquity. Because of this a great many important facts are known about the disorder, but also a great deal of misinformation and superstition has accumulated concerning it. The name gout is derived from the Latin word "Gutta" which translated means drop or coagulation. Because gout is a disease in which a coagulated mass of urates occurs in joints and other tissues the name is exceptionally well chosen. The frequent occurrence of attacks of pain, redness and swelling in the joints of the feet led the Greeks to apply the term "Podagra." This word is derived from the Greek words for foot and attack, and may be freely translated "foot pain."

Gout comprises five percent of all the cases of arthritis seen at the Mayo Clinic, and other rheumatologists seem to find the incidence in their centres roughly the same. We hear it frequently stated that gout is a disappearing disease or an uncommon disease but these figures appear to refute this. Writers of nearly a century ago commented that among the victims of the disease were many persons in high position or of great wealth or intellect. It is common to find that people think of gouty patients as those who eat a great deal of red meat and drink red wine. However, gout is found in all classes of society, as is made clear by the use, even many years ago, of the term "poor man's gout."

Gutman¹ has defined gout as follows: "a disorder of purine metabolism characterized by hyperuricemia and a typical form of recurrent acute arthritis, often eventually associated with urate deposits in cartilage, joint spaces, bursae, tendons, kidneys and other tissues, these deposits sometimes becoming manifest clinically as tophi or in Roentgenograms." Purines are simple organic nitrogenous bases, derived from breakdown of nucleoprotein.

The typical arthritis of the disease is spoken of as gouty arthritis. The patient who, between acute attacks, has no symptom of the disease but has high serum urate is said to have intercritical gout. As the years go by there is a tendency for the acute attacks to become more frequent and eventually to blend together. At this time the presence of tophaceous deposits of urate may or may not become evident, or produce joint deformity. In either case this stage of the disease is spoken of as chronic gouty arthritis.

The metabolic fault in purine metabolism is familial and probably obeys Mendelian laws of inheritance. In 136 blood relatives of 27 gouty patients Talbott et al found 25 with hyperuricemia, none with gouty arthritis.² More recently Wilson in England³ has carefully studied the family histories in 77 patients with gout and has discovered 30 instances of gout in their relatives. Interestingly, the survey of these relatives also brought to light 15 cases of rheumatoid arthritis.

Ninety-five per cent of cases of clinical gout occur in males. It has been demonstrated that the serum uric acid level becomes elevated in males at or soon after puberty, whereas in females the abnormality appears about the time of the menopause⁴. This finding may help to explain the marked difference in incidence of the disease between the sexes. Men deprived of their gonads do not become gouty, yet low values for 17 ketosteroid excretion have been

described in male patients with gout.¹¹ Women about the age of the menopause may rarely have atypical gouty arthritis resembling rheumatoid.

Although we speak of the serum uric acid level, it would be better to speak of urate or urates since approximately 97% of uric acid exists as the dissociated monosodium salt of urate in serum and other body fluids. For many years it has been known that the urate excreted in the urine is partly derived from food, partly from breakdown of the body's own nucleoproteins. Studies with radioactive isotopes have recently advanced our knowledge by proving that urate is synthesized in the body at a lively rate from the simplest carbon and nitrogen compounds¹.

Whereas in healthy individuals the serum urate fluctuates very little and maintains its values between 3 and 5 mg.%, in the gouty patient the urate level is both high and fluctuant. In the early years of the disease it may at times be normal, but later, although fluctuation of the level continues, estimations nearly always exceed 6 mg.%, and this is the figure usually regarded as the lower borderline for biochemical confirmation of the clinical diagnosis of gout. The test for serum urate is delicate and requires frequent, even daily, controls. Before placing reliance in results, one should be sure of the reliability of one's technician. It is difficult to compute the exact concentrations at which one would expect urates to precipitate out of the various body fluids, but studies indicate that the blood serum is at times nearly saturated. The factors causing precipitation of urates from body fluids in certain locations are not known.

The term "metabolic pool" was coined as a colloquialism expressing that metabolites of the intermediary metabolism may accumulate in different organs. Calculation of the metabolic pool implies that the substance measured is in a molecular aqueous solution and that the physiochemical state of the solution is stable and constant.⁵ Obviously these criteria are not met in tophaceous gout. Nevertheless the results of the study of gout with isotopic-nitrogen-labelled uric acid are most interesting, and the figures in a given case are capable of being reproduced, indicating that they probably have significance. By these techniques it has been found that most healthy people have a metabolic pool of uric acid amounting to about 1200 mg. In the gouty individual the metabolic pool is two or three times this size, and occasionally as much as fifteen times as great. For years it has been known that such drugs as salicylates and cinchophen are capable of increasing the urinary excretion of urate. The isotope techniques show that these drugs increase the turnover of the metabolic pool, as do some new agents, notably Benemid (R)⁶.

Gouty patients may excrete less or more uric acid than normal people, usually more in the absence of renal impairment, but they excrete less than non-gouty subjects with comparable hyperuricemia. When the kidney of a gouty individual becomes impaired, urate clearance tends to be maintained, the per cent of urate reabsorbed by the tubules of the kidney decreasing. Ordinarily 90% of the urate filtered by the glomerulae is reabsorbed during passage of the filtrate through the renal tubular mechanism. Drugs increasing the excretion of urate (uricosuric agents) act by decreasing the amount reabsorbed by about five per cent.⁷ (i.e. increasing excretion by 50%). This they probably accomplish by successful competition with urates for the at-

tention of the renal tubular cells in the cases of salicylates and benemid, and by a mild toxic action on the tubular cells in the case of cinchophen.

Talbott² believes that acute attacks of gouty arthritis can occur probably only in structures containing microscopic or macroscopic amounts of urate. The acute attacks are characterized by tremendous increase of blood flow in the affected limb⁸.

Urate deposits are prone to occur in avascular tissues. They are not seen in muscle, liver or spleen. Typically they occur in joints, bones, bursae and cartilaginous structures. In avascular structures such as cartilage the crystals do not set up inflammation, but when they occur, for example, in a joint capsule or other more vascular tissue they call forth a cellular reaction and become surrounded by a zone of fibroblasts, histiocytes and foreign body giant cells—later by a capsule of collagenous fibrous tissue, the whole mass sometimes being termed a gout granuloma. In joint cartilage the crystals first become deposited in the surface so that microscopically they appear like icing on the top of a cake. Their presence increases the friability of the cartilage and leads to degeneration which is evidenced by clefts and irregularities. In time the deposit of urate becomes visible to the naked eye and may become so extensive as to replace the whole joint although this is relatively rare. Somewhat more commonly, deposition of urates in synovium is followed by fibrous tissue pannus formation so great as to cover the articular cartilages producing fibrous ankylosis.

The kidneys in some cases show urate deposition and hyaline casts in dilated tubules. In others the tubules are atrophied and there is interstitial fibrosis. In addition to these changes there is usually hyalinization of glomeruli and intimal thickening in the blood vessels. The renal lesions are probably largely the result of vascular sclerosis, but the general picture in the kidney may be of chronic glomerulonephritis, nephrosclerosis, pyelonephritis or amyloid disease².

It seems clear that the elevated blood serum urate level in gouty patients must be accounted for by either diminished destruction of urate, diminished excretion of urate or increased formation of urate. Which of these mechanisms is the underlying fault in gouty persons has been the basis of a great deal of controversy. The first mentioned possibility has, I believe, few strong proponents today. The second—diminished excretion of urate—is warmly championed by some able physicians, but the maintenance of urate clearance in gouty patients with decreasing glomerular activity appears a strong argument against this view. The confirmation of the ability of the body to synthesize urates in considerable quantities appears to add strength to the already strong arguments of those who favour the mechanism of increased formation of urate as the underlying fault. In diseases where there is increased formation of urate, such as leukemia and erythremia, gout is more common than in the remainder of the population.

The acute attack of gouty arthritis has been described vividly by many observers, particularly those who have suffered the disease themselves. The most spectacular features of the disease are the suddenness of the onset and the extreme acuteness of the pain. The patient may have a single attack, then none for several years. Recovery from the acute attack is usually com-

plete in the early years of the disease. As a rule only a single joint is affected, though several may be, either simultaneously or, more commonly, one after another. Some discomfort in the joint may precede the attack, and the acute onset of the pain is often during the small hours of the morning. Within a few hours, swelling in and about the joint is apparent, and the veins in the region become distended. The colour of the area changes, becoming slightly cyanotic, and usually within 12 to 24 hours, redness of the skin overlying the joint appears. The pain is spontaneous and continuous, present regardless of whether or not the joint is moved. The joint is excruciatingly tender and even a slight jar may cause the patient such extreme agony that his apprehension of injury from those who would help him may seem exaggerated. The choleric disposition of gouty patients is proverbial. The acute attack is accompanied by fever, malaise, tachycardia, increased sedimentation rate and increased leucocyte count. The appearance of the acutely inflamed joint may mimic cellulitis, and this may lead to unnecessary and sometimes harmful surgical intervention. Severe pain may last two or three days or longer if untreated, but can be terminated, usually within 12 to 15 hours, by colchicine. Some pain, however, persists after this treatment for a few days. An untreated initial attack is unlikely to last longer than ten days. After his first attack the patient may have no further episode for several years, then attacks may commence to appear at intervals of a few months and later at decreasing intervals, until eventually deformity of the joints begins to appear, the pain and stiffness become ever-present, and one begins to think of the patient as having chronic gouty arthritis. Although gout shows a predilection for the first metatarso-phalangeal or bunion joint, only 60% of initial attacks occur in this joint. Usually the attacks involve joints of the hands or feet, but occasionally a sacroiliac, a shoulder or an acromioclavicular joint may be affected. When large joints such as the knees are inflamed, massive effusions may be seen. Inciting factors may precede an acute attack, such as trauma, infection, surgical operation, exposure to cold, myocardial infarction⁹ or excessive indulgence in food or drink. Some drugs, particularly liver extract, adrenalin and A.C.T.H. given by injection may set off an acute attack of gouty arthritis. The first thought should be of gout when acute arthritis occurs a few days after any surgical procedure.

Because of precipitation of urates in kidney tubules and their aggregation in the pelves of the kidneys, attacks of renal colic are common in gouty individuals, and a history of calculus should alert one to the possibility of gout.

The word tophus is derived from the Greek word topos which refers to a crumbly type of rock. Such deposits of urates are prone to occur in cartilagenous tissues such as the pinna of the ear and in the ends of bones. Occurring in the skin they may give rise to a finding aptly described as "skin gravel". They may break down and discharge through sinuses, and they may require surgical intervention, either because of their appearance, because they are painful, because they are placed so as to interfere with the movement of parts of the body, or because of extensive deformity. The olecranon bursa is not uncommonly the site of one or more tophi. Rheumatoid nodules commonly occur slightly more distally. This may constitute a useful hint in differential diagnosis.

The diagnosis in the early stages of the disease is almost completely dependent upon the obtaining of an adequate history. The suddenness of the onset, the severity of the pain, the duration of the attack, the redness of the joint, in addition to the other colour changes and the extensive edema are unlike other forms of arthritis. The completeness of the recovery may be a helpful point. Only in the late stages of the disease do we find tophi, deformities and renal damage. If a tophus is found the material within can be aspirated, heated with a few drops of dilute nitric acid and evaporated to dryness. After cooling, a few drops of ammonium hydroxide can be added, whereupon a purplish red colour develops if urate is present. This is known as the sodium murexide test. The punched out areas described as being typical X-ray findings are sometimes helpful in late gout, but similar radiolucencies may be found in rheumatoid arthritis, sarcoidosis, hyperparathyroidism and syphilis. Because the deposition of urate leads to degeneration of articular cartilage, degenerative joint disease is a frequent concomitant of gouty arthritis, and the X-Ray may show evidence only of this condition. A positive family history, an elevated serum urate level, a typical response of the acute attack to colchicine or the demonstration of renal impairment may be helpful in establishing the diagnosis. The blood urea nitrogen or N.P.N. should be determined at the time of estimation of the serum urate to rule out elevation due to renal insufficiency.

The outlook in this disease as to joint mobility and deformity depends on the rate of progress of the attacks of arthritis which is highly variable and rather unpredictable. The life expectancy, however, depends on the presence and degree of renal impairment. New forms of treatment may greatly improve the prognosis in both respects.

The acute attack is usually best treated with colchicine in a dosage of 1 mg. every 2 hours until the patient begins to have diarrhea or other gastrointestinal symptoms. Treatment should be instituted as early as possible. This is a fairly safe drug and very effective. The total dose often proves to be 5 to 7 mg. Although A.C.T.H. or cortisone may be used to abort an acute attack, colchicine is equally effective, cheaper and usually more convenient. The ease with which an acute gouty attack can be produced by withdrawal of A.C.T.H. or cortisone has probably been exaggerated¹. The joint should be rested during the acute attack but ambulation should be resumed soon after the acute pain has subsided. Another treatment of the acute arthritis which can be applied either before or after the relief of the acute pain by colchicine is the intra-articular injection of hydrocortisone (compound F) which is highly effective after a period usually amounting to 12 to 24 hours. The dose is 25 to 50 mg.

The question of diet is a vexed one, but most clinicians are considerably more liberal with the gouty patient than doctors of a generation ago. Some would prohibit the eating of the very high purine foods such as meat extract, brain, anchovy, sardine, liver, kidney and pancreas (sweetbreads). Others would also limit the ingestion of foods containing only a moderate quantity

of purines such as red meat and some vegetables, to a single serving a day. All agree that alcohol should be limited or entirely avoided.

In the intercritical periods prophylactic colchicine has established a place for itself in the treatment regimen. For this purpose it is usually given in a dosage of one to two mgms. daily.

Because of the possibility of urate deposition in the kidneys, fluid intake should be generous at all times.

Salicylates in doses up to 3 grams a day cause increased retention of urate, but in daily doses of 4 grams or over, they increase urinary excretion. Salicylism often limits the use of this valuable form of treatment. A.C.T.H. and cortisone are also uricosuric agents but are not practical for long term use in most cases. Their efficacy in erasing the symptoms and signs of gouty arthritis is probably due to their anti-inflammatory action rather than to their ability to increase excretion of urate. Cinchophen, though effective in this regard, is a potential liver toxin, capable of doing great harm. Since the advent of Benemid, an improved caronamide introduced by Sharp and Dohme, there is probably no justification for further use of cinchophen. Benemid is a drug of very low toxicity, only an occasional patient having untoward gastrointestinal symptoms as a result of its use. Skin rashes are still more rare. Acute attacks are not prevented but prophylactic colchicine may be given concurrently in the early months of therapy. Later, attacks have appeared to become more infrequent. The usual dose is 2 grams per day.

The metabolic pools of gouty patients have in some cases been reduced to normal size by use of Benemid. This may take weeks, months or years, depending on the size of the pool and the amount of precipitated urate in the body. Tophi have been reduced in size by the protracted use of uricosuric agents¹⁰, and now that a non-toxic drug is available, we may hope for complete prevention of the manifestations of gout.

SUMMARY

Gout is a term applied to an hereditary fault in purine metabolism. The Arthritis associated with the metabolic disorder is called Gouty Arthritis. Elevated Serum Uric Acid levels in the absence of raised values for other non-protein nitrogenous substances, establish the diagnosis, but are not constantly present in the early years of the disease. "Tophi", and X-Ray findings also make their appearance late in the course of the disease. Because of this, diagnoses should be based on history and physical findings in early cases. A history of sudden onset of acute Arthritis with redness of a joint and recovery in 5-10 days, is almost diagnostic. Response of the attack to Colchicine is confirmatory.

Studies with radio-active isotopes have demonstrated that the total amount of urate in the Gouty patient is several times as great as in normals. Prognosis for life is dependent upon renal and vascular complications. These may prove to be preventable. Treatment is directed at the acute attack of

Gouty Arthritis, and at the long term goal of reducing the metabolic pool of urate to normal, and maintaining it at this level. For the treatment and prophylaxis of acute Arthritis, colchicine is the drug of choice. To increase excretion of urate, a new drug, "Probenecid", ("Benemid"—Sharp & Dohme) appears to be the best agent found to date. Given on a permanent basis, it may significantly improve the prognosis.

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The Problem of The Enucleated Eye*

J. P. McGrath, M.D.
Kentville, N. S.

WHEN one enucleates a previously normal-looking eye, one immediately creates a cosmetic and a psychiatric problem for the patient. That side of the face, presenting a picture of the lids in apposition, and sunken into the orbital space, is in sharp contrast, to the natural appearance of the other side.

The sinking of the lids into the orbit is due to the gross migration of tissue, which occurs when the globe is removed. The cut muscles retract and the fat of the superior quadrant is drawn in, to occupy the space vacated by the globe—resulting in a sulcus or depression at the base of the upper lid.

The patient, if a young person or a woman, is conscious of the grotesque and unsightly appearance, which they now present. We have all seen the celluloid patch or the frosted glass, that has been used in some cases, to hide the deformity. Very little improvement also results from the ill-fitting glass or reform eye, which in many cases, is off color, off axis, and off size.

You all have spent a good deal of valuable time attempting to select something from an assortment of stock eyes, that would—

- (1) Feel comfortable in the socket
- (2) Look straight ahead
- (3) Be somewhat near the color of the other eye.

The facilities not being available for having a custom eye made or not being fortunate enough in having a patient financially able to go where one could be made, this solution of the problem is often the best one can achieve.

Then there is always the subsequent problem of breakage, discoloration of the glass sclera, excessive secretion, and sometimes the startling fact of the explosion of the eye, while worn in the socket.

Therefore the challenge is:

- (1) To eliminate the sulcus in the upper lid and
- (2) To provide natural movement of the prosthesis with comfort and safety.

Some years ago the insertion of a gold ball, within Tenon's capsule or into the eviscerated eye—Mules' operation, was introduced; it pushed the reform eye forward and helped to correct the sunken appearance that is usually present. It also created more movement due to its apposition to the concave back of the reform eye or prosthesis.

Of recent years a Lucite Ball of 14, 16 or 18 mm. has been the instrument of choice, being both lighter and less expensive.

Then came the work of Ruedemann, Cutler, etc. to say nothing of our own Crawford, to produce a moveable implant onto which a custom plastic eye could be attached, thereby giving a life-like and more pleasant result.

*Paper delivered at the Annual Meeting of The Nova Scotia Society of Ophthalmology and Otolaryngology at Yarmouth, N. S. September 4, 1952.

This exposed integrated implant which seemed to be the solution has unfortunately not been the whole answer. Excessive secretion from the exposed portion resulted, and in most cases was very troublesome, also erosion of tissue took place and the implant became dislodged and in many cases had to be removed in from one to two years.

Many varieties of implant were devised. Some had a ring for the muscles to be sutured around. Others had tantalum wire mesh for the same purpose and still others had apertures in the body of the implant through which the muscles could be drawn and sutured.

The universal basket implant of Cutler, as used by Crawford, seemed to be more satisfactory and could be inserted into Tenon's Capsule and the muscles attached to the mesh; or the implant could be inserted into the eviscerated globe, through a posterior opening or inserted from behind, into a collar of sclera, to which the muscles were still attached in their natural manner.

I have been extremely disappointed in not being able to show you a case today of a young boy of 18 years, with a universal basket exposed integrated implant, inserted in an eviscerated eye. The movement is just as good as the natural eye, as the sclera is in its normal state, with the muscles attached and undisturbed. The artist also made a good plastic reproduction of the Iris, Pupil, and Sclera and except for some slight discharge, he has a splendid result. He left this summer for Ontario, where he has employment and consequently I cannot show him.

To overcome the faults of the exposed implant, Troutman devised one containing a magnet, which is completely buried in the socket and covered over with conjunctiva, similar to a Lucite Ball, and the plastic eye moves with the implant, due to a second magnet, fixed within the substance of the prosthesis. This has not been satisfactory, due to erosion, caused by friction between the prosthesis and the implant.

Cutler now has a buried implant with a depression, into which a spud on the back of the prosthesis fits and creates movement, through mechanical conduction, also when the basket rotates, one side of the socket becomes shallow and the other deep, thus forcing the prosthesis to move. It is however, somewhat more limited in its excursion of movement than that from the exposed implant. There is supposed to be less secretion; but also again I find there is a fair amount of the same.

Recent investigation and results have proven that it is not necessary to attach the muscles to the implant. The severed muscles have sufficient attachment to Tenon's capsule to give the implant more movement than the prosthesis can accommodate.

I will now present a case of a boy with this latter type of Cutler buried implant. He is 11 years of age and had his right eye blinded four years ago by the penetration of a pitch-fork. A phthisis bulbi resulted. It was removed last January and following the healing of the implant in the socket, he was sent to Toronto to have a custom eye made to fit the space and with the proper size and color of iris to match the other eye. He has much better movement than

he would have had from a ball implant. He also has a custom made eye which improves his personal appearance, does not make him stand out before the other boys at school, as one with a deformity, and he also has the advantage, that his employability will be enhanced in later years.

The selection of these cases is obviously young people, women, and men that are employable and who desire a much better result. In the elderly, the extra length of time for operation and the extra expense incurred in having the custom eye made, are usually not warranted or desired by the patient.

These implant operations are exacting, and very definite principles must be followed, but I think we, as a profession, owe it to our patient to give either him or her, as good a cosmetic and psychiatric result as possible, so that they may take their place in society, with as little handicap as possible and as a more marriageable or employable citizen.

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SYPHILIS SEROLOGY

Halifax, Nova Scotia
June 18, 1953

Dr. H. G. Grant

Secretary

Nova Scotia Medical Society

Dalhousie University

Halifax, Nova Scotia

Dear Dr. Grant:

We are attaching herewith a memorandum summarizing the results of the Sixth Serological evaluation series which has just been released by the Laboratory of Hygiene in Ottawa.

We feel that this information will be of interest to the medical practitioners of this province.

Yours very truly,

J. S. ROBERTSON, M.D., D.P.H.

Deputy Minister

MEMORANDUM

To: Dr. J. S. Robertson

The report of the sixth serological evaluation series conducted by the Laboratory of Hygiene has been released and a summary of the results with particular reference to this laboratory follows.

Eleven laboratories took part, composed of each provincial laboratory and the Laboratory of Hygiene, Ottawa. This was one less than in the fifth survey when a laboratory operated for the armed services participated.

SPECIFICITY

The results across Canada were not as good this time—at least not on paper. In the fifth survey all twelve laboratories got a rating of 100% in both

the standard Kahn and the Kolmer Wassermann tests. The Laboratory of Hygiene was urged to find "normal" cases that were serologically more complex than young University students with the result that in this survey, of 11 laboratories reporting on the standard Kahn test, 7 out of 11 got a rating of 100% specificity and in the Kolmer Wassermann test 2 out of 11 rated 100%. This laboratory obtained 99.5% in both tests, which represents one doubtful finding in each series. In each case we suspected the finding to be a false positive, the test was repeated on the small quantity of serum available and the same result obtained and reported as such.

SENSITIVITY

In this phase also, more difficult cases were requested particularly ones that were far on the way towards reversion from positive to negative under treatment and the result shows in the lower average rating obtained. In this sixth survey the Wassermann ratings ranged between a low of 37.4 to a high of 81.9 and Standard Kahn 35.9—65.7 while in the fifth series corresponding figures were 54.0—73.9 for the Kahn test and 49.0—73.5 for the Wassermann. This laboratory came first in sensitivity in the Kahn test and second in the Wassermann.

A summary of the results show for the Kahn test:

LABORATORY	SENSITIVITY	SPECIFICITY
Halifax.....	65.7	99.5
I.....	65	99
Laboratory of Hygiene.....	59.2	100
B.....	58.7	100
C.....	58.1	99.5
E.....	58.1	99.5
D.....	49.5	100
A.....	48.3	100
G.....	46.6	100
H.....	42.0	100
F.....	35.9	100
Average.....	53.37	99.6

Results in the Wassermann test:

LABORATORY	SENSITIVITY	SPECIFICITY
H.....	81.9	98.9
Halifax.....	75.7	99.5
C.....	73.6	99.5
E.....	73.3	99.5
Laboratory of Hygiene.....	71.9	99.5
B.....	71.8	100
I.....	71.6	99.5
A.....	69.9	99.5
G.....	65.6	100
D.....	62.3	99
F.....	37.4	99.5
Average.....	68.63	99.49

Results were also submitted on the Kahn Quantitative test, with this laboratory showing a specificity of 100% with the most consistent titre results in the whole group. In the V.D.R.L. test, Mazzini and Presumptive Kahn tests, the first two were modified with a view of adapting them to replace the last (Presumptive Kahn) about which much dissatisfaction is felt in its suitability as a screening procedure. In the V.D.R.L. test we were first in sensitivity with 87.5, the next being 82.9. In the Mazzini test the Laboratory of Hygiene was first with 85.9 and Halifax second with 84.2 and in the Kahn Presumptive test, Laboratory B was high with 87.2 and Halifax was fourth with 85.5.

SUMMARY

Test	SENSITIVITY		SPECIFICITY	
	Halifax	Canadian Average	Halifax	Canadian Average
Kahn.....	65.7	53.37	99.5	99.6
Wassermann....	75.7	68.63	99.5	99.49

Despite the fact that we recognized both false doubtful tests we are not satisfied with our specificity. Sensitivity is, perhaps, too high having regard to the Canadian averages though that is far to be preferred than the other extreme such as shown by Laboratory F. Sensitivity on doubtful findings is being softened slightly to influence specificity in an upward direction.

The Management of Acute Injuries to the Neck*

Committee on Trauma
American College of Surgeons

INJURIES to the neck vary in extent and significance from the trivial, superficial and inconsequential to the most extensive, deep, disabling and life endangering. The size of the external wound and the extent of tissue damage are not always distinguishing features between the two extremes. Many neck wounds that appear to be slight in character are immediately fatal or become so soon after injury. However, if the patient can survive long enough to receive care adequate to the needs, even the severest wounds may be cared for with survival of the patient. Thus an injury to the neck is never slight enough to be neglected nor extensive enough to be regarded as hopeless.

First Aid

1. Apply a sterile dressing of adequate size, shape and volume to cover the wound, prevent flow of blood, and avoid further contamination.
2. Fix the dressing in place with adhesive tape, or with a bandage which is anchored about the head, jaw or opposite axilla.
3. If loss of blood has already resulted in shock, give one or two units of plasma or other blood substitute.
4. Direct the patient immediately to an emergency aid room or hospital for examination and treatment.
5. **Do not tamper with the wound, remove foreign bodies or disturb blood clots.**
6. **Do not apply a snug circular bandage around the neck.**

Immediate examination of patients with neck wounds will help to classify them into (1) those who may be given necessary care at a well equipped emergency room; and (11) those who require more adequate facilities and personnel for proper treatment.

The latter must be separated into patients who require

- IIa Urgent care for respiratory obstruction or hemorrhage,
- IIb Delayed care pending arrival at a hospital where adequate attention is available.

Answering the following questions will help to classify the patient.

1. Is respiratory obstruction present, impending or likely?
2. Is there a vascular injury with external or internal hemorrhage?
3. Is there an injury to the cervical cord or is such an injury likely?
4. Is there a foreign body lodged in the neck?
5. Is there an injury to the pharynx or esophagus?
6. Is there an injury to the head above or the chest below the neck wound?
7. Does the patient have other injuries requiring special care?

I Patients with wounds which do not involve the important structures outlined above are treated as follows:

1. Protect the open wound with a sterile dressing while cleansing a wide surrounding area with plain soap and water. Hairy parts are shaved.
2. Infiltrate the margins of the wound through the intact skin with a one per cent solution of procaine.
3. Cleanse the wound and excise devitalized tissues.
4. Close the wound with the least number of interrupted nonabsorbable sutures necessary for adequate approximation without tension.
5. Apply a sterile dressing and supporting bandage.
6. Tetanus antitoxin or tetanus toxoid and antibiotic medication should be given when circumstances and the nature of wound warrant this treatment.

Constricting bandages should not be applied to the neck of any patient who is unconscious, or may become so following medication, unless there is someone in attendance to guard against strangulation from hemorrhage, edema, or any other cause for tracheal obstructions or venous compression.

It is sometimes advisable to transport these patients in a prone position when the presence of tracheal or esophageal injuries renders possible fatal aspiration of secretions, vomitus, or blood.

II In the case of patients who require more adequate facilities, the wound should be covered with a sterile dressing of appropriate size, and the patient should then be sent to a hospital where the care necessary for such wounds is available. Even in the well equipped emergency room probing of neck wounds and removal of blood clots should not be done unless one is prepared to control hemorrhage and supply blood in a volume sufficient to prevent or overcome shock. However, the urgent case must be cared for promptly.

1. Injuries to Air Passages

Respiratory obstruction may result from (1) aspiration of blood or a foreign body; (2) direct trauma to the larynx or trachea; (3) edema due to injuries to adjacent structures in the neck or floor of the mouth; and (4) increased pressure in the neck due to hemorrhage from an artery, large or small.

Respiratory obstruction when impending, or likely to occur from the nature of the neck wound, warrants immediate hospitalization lest an urgent condition be precipitated. *Morphine should not be given to a patient with impending obstruction.*

When strangulation is already present or developing, immediate tracheotomy is necessary. Done soon enough, even under the most unfavorable circumstances, it may be lifesaving. Inspiratory indrawing at the suprasternal notch, supraclavicular fossae and epigastrium, indicates the urgency of the condition.

The preparation of the skin for tracheotomy is done as in any elective procedure but the urgency of the situation may curtail some or all of the steps commonly taken.

1. The trachea is fixed between the thumb and index finger.
2. Skin incision is made over the trachea. A longitudinal incision in the midline of the neck is the most expedient.
3. Fascia is separated in the midline.
4. Incision made into two tracheal rings (at least two rings below cricoid cartilage).
5. Insert tube—metal, rubber or glass, whatever is available. Instruments—a forceps, bent hairpin, paper clip or other object—may have to be improvised on the spot.
6. Suction is accomplished with bulb syringe and catheter. Dependent position of head may aid in emptying the bronchial tree of blood or secretions and permit aeration of the lungs.
7. Patient is hospitalized for more definitive care of condition.

Elective tracheotomy done under better circumstances differs from the urgent type in the following particulars:

1. Adequate preparation of the skin.
2. Anesthesia (one per cent procaine infiltration along line of incision)
3. Skin incision. Similar to a thyroidectomy incision placed at a level below the cricoid but well above the suprasternal notch.
4. Fascia incised in the midline over the tracheal rings.
5. Insertion of a canula of proper size with obturator.
6. Suction apparatus, oxygen for inhalation.
7. Nursing care.

Injuries to the trachea or larynx due to blunt objects may result in edema even as late as forty-eight hours after injury. Tracheotomy may become necessary at any time. Lest strangulation develop and result in delay in establishing an airway, these patients must be observed by competent attendants. The gradual development of anoxia may be too subtle to be recognized until sudden changes occur and prove fatal.

Penetrating or perforating wounds of the respiratory passage are usually associated with emphysema of the superficial tissues. These wounds should be exposed and cleansed but they need not be closed by suture. The skin should be loosely approximated lest infection develop and interfere with the healing process. Large tracheal wounds may be covered with adjacent muscle tissue or thyroid gland if available. It is best not to place a tracheotomy tube into wounds of the trachea close to the cricoid cartilage. When necessary, the tube should be inserted at the elective site in the trachea.

Tracheotomy tubes should be removed as soon as possible, when the airway is patent. This can be determined by plugging the opening in the tube or by substituting a tube of smaller caliber.

When possible, the advice and services of a laryngologist should be sought for the care necessary to prevent the sequelae of these injuries.

2. Injuries to Vessels

Bleeding from superficial vessels is controlled by ligation. When injury to a large vessel is suspected or actually present, manipulation of the wound should be avoided lest disturbance of a protective blood clot result in uncontrollable hemorrhage. Care of injuries to large vessels requires (1) blood for replacement; (2) intratracheal anesthesia; (3) oxygen; (4) adequate assistance to aid in exposure of the wound and control the blood flow in the carotid, or innominate or subclavian arteries, and one or two of these vessels may require control to help locate and ligate a bleeding vessel or vessels; (5) suture material and instruments of proper size and design; (6) adequate lighting; (7) nursing care.

Unless these facilities are available, and pending transportation to a hospital, the wound should be covered with a compression dressing held in place by adhesive tape which does not encircle the neck, or by manual compression.

Penetrating or perforating wounds of small size associated with severance or perforation of large vessels may be accompanied by little or no external bleeding. The neck becomes swollen because of venous compression and accumulation of blood in the fascial spaces. This is commonly associated with difficulty in breathing due in part to tracheal compression and in part to factors associated with increased pressure in the neck but not related to a decrease in size of the airway.

It is of some value to distinguish between strangulation due to a defect in the airway and strangulation due to internal tension in the neck. Decompression of the fascial spaces by incision into them will relieve the respiratory difficulty, but the bleeding point must now be controlled lest fatal hemorrhage ensue. Intratracheal anesthesia with a high oxygen content is extremely useful. Operating procedure is as follows:

1. Skin incision over the anterior border of the sternomastoid muscle on the side of the injured vessel.
2. Compression by stick sponge over site of injury.
3. Isolation of carotid artery below the wound with application of tape sling.
4. Isolation of carotid artery and jugular vein above the injured site with application of tape slings.
5. Exposure of the injured segment of vessel, and wound cleansed of clots, loose tissue, and tag.
6. Closure of artery wound either by a continuous nonabsorbable suture (0000 on needle) or ligation with a braided silk ligature close to adjacent branches with removal of the damaged segment. The smaller the caliber of the artery the finer the ligature necessary to occlude the lumen. Veins are ligated close to branches to avoid sacs of non-circulating blood. In injuries to the common carotid every effort should be made to apply lateral suture to avoid hemiplegia.
7. Skin is closed loosely. No drains are used in such wounds.
8. Firm bandage is applied and adequate nursing care instituted.

9. Whole blood in the amount required to replace the volume lost.
10. Antibiotics in full dosage. Tetanus antitoxin or toxoid as indicated.
11. Oxygen inhalations if any large vessel to the brain is occluded.

3. Injuries to Cervical Cord

Penetrating and perforating wounds in the neck may be caused by missiles which lodge adjacent to the cervical cord. The wound may appear trivial and the patient may walk into the emergency aid room but die suddenly following manipulation of the neck. Fractures and dislocations of the neck may be unassociated with cord injury until manipulation causes changes which result in paralysis or death. Thus, suspicion that such a sequel is possible warrants extreme care and study of the case with x-ray views before extensive manipulations are undertaken. The management of cord injuries is considered elsewhere.

4. Foreign Bodies

Patients with perforating wounds, lacerations and superficially imbedded foreign bodies obvious on inspection, do not warrant immediate x-ray studies. However, penetrating wounds with the possibility of a foreign body lodged in the neck warrant x-ray study to determine the probable course of the missile, its site of lodgement, and the likely damage resulting therefrom. Two views, antero-posterior and lateral, are taken. They should include the base of the skull and the clavicles. Depending upon the direction of the wound, studies of the skull or chest may be necessary to complete an evaluation of the extent of the injury. It is extremely important that the left and right sides be correctly marked on the films and that the examination of the neck be made with these markings clearly in view. Missiles which enter on one side of the neck may lodge on the opposite side and do more damage at the site of lodgement than on the side of entrance. Thus, surgical care may be more urgent on the side opposite to the external wound. A misinterpretation of the film as far as the side of lodgement of the missile is concerned may result in a futile effort to improve the condition of the patient.

5. Injuries to Pharynx and Esophagus

These injuries may be noted on inspection, suspected from the course of a missile, or become obvious when complications develop. Exposure of the site of the wound with decompression of the fascial spaces or mediastinum, is all that is necessary in most instances. In small wounds healing occurs without suture, but repair of large rents is desirable in order to avoid persistent leakage of secretions. Feeding through a nasal catheter is desirable for a period of a few days to one week, depending on the size of the opening. Extensive wounds of the pharynx or esophagus may heal better without an indwelling catheter. The establishment of a gastrostomy or jejunostomy may better accomplish maintenance of nutrition without interfering with the healing process in the neck. Following necessary care at the site of injury, the skin is closed loosely, and a drain put into the fascial space.

6. Wounds Adjacent to Jaws, Chest, Axilla, Head

The bony barrier between the neck and chest is the first rib on each side attached to the sternum. The bony barrier between the neck and axilla is the clavicle on each side. These barriers between adjacent zones of soft tissue interfere with the freedom of manipulation which is frequently necessary to cope with wounds of the neck extending to the chest or axilla.

The floor of the mouth and mandible are also frequently injured in wounds involving the neck. Thus these zones adjacent to the neck must be studied and, when necessary, exposed in order to complete the care of injuries to important structures (blood vessels, food and air passages). The control of blood flow in the carotid, innominate and subclavian arteries must not be undertaken lightly in an emergency room. The possibilities of the complications noted above emphasize rather the need for the careful examination and triage of patients with neck wounds.

7. Concomitant Injuries

Failure to examine the rest of the body of the patient who has a severe neck injury may be cause for an avoidable disability or a fatal issue, even when proper care for the neck wound has been carried out. Thus the casual survey of the initial examination must be followed by more thorough study by all personnel who are charged with the responsibility for the care of the patient. An unreduced dislocation of a thumb may be insignificant when compared to a life of endangering wound in the neck. However, while he may recover from the neck injury, the patient may be left with a disabled hand.

*Note:—The foregoing is one of several articles on the subject of trauma distributed by the Committee on Trauma, American College of Surgeons, through its Regional Committees.

Fourth Annual Report

Maritime Medical Care Incorporated

April 15, 1953.

President's Report

Members of the Board of Directors:

It is my privilege today to present to you the Fourth Annual Report of the Corporation covering the fiscal year ending December 31, 1952.

Progress:

We are pleased to record that the past year has been one of continued progress. Probably the outstanding feature has been the fact that our balance sheet which we are presenting to you today shows a net surplus for the period of \$44,551.83. The improvement in our financial position is due largely to the increase in subscribers' fees which became effective February 1, 1952. While this increase did have a very serious effect on enrollment, and while we certainly lost a large number of subscribers, the increase was necessary in order that the doctors could be compensated in a relatively adequate manner for their services. Before the year ended a large number of persons, who previously cancelled their coverage, re-enrolled. Further details on enrollment are contained in the General Manager's report, so I shall not deal with this subject further here.

Medical Costs:

During the year the problem of high medical costs was one which absorbed much time of your Executive, and one on which considerable study was made. While a slight improvement was shown in the demands for home calls, the demands for office calls increased. Following up my interim report to you made at Yarmouth last September, a close watch has been maintained with reference to the number of home and office calls made, and we regret to say that the improvement has not been what we had hoped. We realize that there are abuses on both sides, but we do feel that it is the obligation of the physician to protect the interests of his plan as these interests are both common to the physician and the subscriber—to the physician in receiving fair remuneration for his services and to the subscriber in maintaining the monthly subscription fee at a figure which he can afford to pay. Medical costs at present compare very favourably with similar pre-paid plans in Canada, with the exception in the home and office field where ours are considerably higher than the others.

Medical Taxing Committee:

We wish to extend to the various members who have served on the Medical Taxing Committee our sincere thanks for a big job well done. These men have given freely of their time to the onerous task of reviewing accounts and establishing a fee which is commensurate with the services rendered. Their task is not an easy one, as often they were obliged to make decisions with the minimum of information. But we are pleased to record that the number of

complaints received were very few in comparison with the number of accounts reviewed.

Participating Physicians:

The number of participating physicians continues to grow. At the end of the year there were 511 participating physicians in the plan—an increase of 46 over the previous year. These new participating physicians were mostly recent graduates or physicians who lately came to the province. One resignation from a participating physician was received during the year and this was more or less by mutual consent as the physician's type of practice did not lend itself to a pre-paid medical plan.

We believe that our subscribers are relatively content with their pre-paid medical plan. Our office still receives some complaints with reference to the payment of X-ray accounts at 50% and the extra billing by specialists, but the situation with reference to extra billing improved considerably during the year which we presume was due to the fact that more discretion is being practised; and, while our subscriber's agreement provides for extra billing, it was always understood that it would be done within certain limits.

Trans-Canada Medical Plans:

Considerable progress was made during the past year in the further development of Trans-Canada Medical Plans. T.C.M.P. now has an Executive Director working part time, and it is planned to have him available on a full time basis by June of this year, at which time a national office will be opened in the city of Toronto. Considerable work has been done in the establishment of some standardization between the plans, and those plans which lacked comprehensive coverage are studying a contract which is very similar to our own. Liaison between the plans is working very well, and at present transfer arrangements are available between all plans with one exception, and this plan has the matter under advisement.

Investments:

During the year we found it possible to increase our investments from \$60,000 to \$100,000. This money is invested at a good rate of interest and is practically 100% secure. We should like to point out that this \$100,000 we have invested is not surplus but are subscribers' premiums which are collected in advance to pay doctor's fees.

Provincial Welfare Plan:

The Provincial Welfare Plan, as administered by the Corporation on behalf of The Medical Society of Nova Scotia, enjoyed an excellent year. With a curtailment of services to Blind Pensioners and recipients of Mothers' Allowance only, the Plan became solvent—yes, and even showed a surplus. The improvement in the financial position of the scheme can be contributed to the elimination of the Old Age Pensioner from the group at the beginning of the year, as it was the Old Age Pensioner with his chronic conditions which made so many heavy demands upon the service. It was also noted that the majority of Old Age Pensioners lived in rural areas, while the present beneficiaries of the Plan are urbanites, and, as a result, mileage costs were drasti-

cally reduced. Payments for doctors' services were made at 100% during the year, but the mileage fee was continued to be pro-rated at 75%.

Administration:

Administrative costs during the year showed a slight decrease over the year 1951 when administration stood at 11%. Last year it was pared to 9.7% which is considered very good for a plan of our size.

Appreciation:

I should like to extend my sincere thanks to my contemporaries on the Executive Committee. Dr. Gosse has been a member since its inception four years ago. Those of us who have worked most closely with him perhaps appreciate best his unusual administrative ability. Our success to date is largely due to his wisdom and the guidance which he has given us. Our lay member, Mr. John A. Walker, has been a regular attendant at our meetings and has given unstintingly of his time. He has brought with him a wealth of experience and has proven to be a wise counsellor in many of our debates. On behalf of the Medical Profession of this province, I should like to extend to him our sincere gratitude. To our youngest member of the Executive Committee, Dr. Arthur Murphy, the thanks of the Corporation is due, for his valuable services during the past year. His well considered opinions have always been of great assistance to us. I also wish to extend our thanks to the Administrative Staff for their loyalty and devotion to duty. On behalf of the Corporation I should like to express a word of appreciation for the fine services that have been rendered by our general manager, Mr. D. C. Macneill. I am sure the other members of the Executive Committee would like me to thank him for the excellent work he has done for this Corporation.

On behalf of the Board of Directors,

J. C. WICKWIRE, M.D.
President.

MARITIME MEDICAL CARE INCORPORATED

Balance Sheet

December 31st, 1952

ASSETS

Cash on hand and in Bank.....	\$ 13,153.94
Accounts Receivable—Subscribers.....	\$ 14,877.32
Accounts Receivable—Miscellaneous.....	1,262.13
Due from Province of Nova Scotia—Welfare.....	6,935.48
	<hr/>
	23,074.93
Investments—Guaranteed Investment, 3% Certificates— Eastern Trust Company.....	100,000.00
Supplies, per Inventory.....	4,787.35
Furniture and Fixtures, at Book Valuation.....	10,000.00
	<hr/>
Total Assets.....	151,016.22
Deficit Account.....	10,301.24
	<hr/>
	\$161,317.46
	<hr/>

LIABILITIES

Accounts Payable.....		\$	1,761.96
Doctors' Fees (Estimated).....	\$100,000.00		
M.M.C. Accounts.....	21,400.00		
			<u>121,400.00</u>
Unexpended Balance, Welfare Funds.....			565.14
Prepaid Subscribers' Dues.....			35,590.36
Loan from the Medical Society of Nova Scotia.....			2,000.00
			<u>\$161,317.46</u>

Note—The Corporation has, by Agreement with Participating Physicians, paid only a portion of accounts as approved for Services. Such balances may be cancelled by Resolution of the Board, in accordance with the By-Laws and are not included in the above liabilities.

MARITIME MEDICAL CARE INCORPORATED
Statement of Revenue and Expenditure for the Year
ending December 31st, 1952

REVENUE

Subscribers' Dues—Medical Care.....		\$26,249.81	
Deduct			
Doctors' Fees—Paid.....	\$602,474.10		
Doctors' Fees—Estimated as owing and not rendered at December 31st, 1952.....	100,000.00	702,474.10	\$123,775.71
			<u>5,911.77</u>
Administration Fee—			
Public Welfare Accounts.....			1,772.88
Income from Investments.....			<u>131,460.36</u>

EXPENDITURE

Salaries and Wages.....	\$	52,306.98	
Office Supplies.....		3,731.80	
Rentals, I. B. M. Office Equipment.....		6,949.62	
Advertising.....		1,895.00	
Travelling Expenses.....		1,810.13	
Rental of Premises and Light.....		3,497.14	
Telephone and Telegraph.....		697.36	
Postage and Excise Stamps.....		1,835.03	
Directors' Fees.....		505.00	
Taxing Committee Fees.....		620.00	
Auditing.....		1,600.00	
Interest and Exchange.....		959.44	
Taxes and Insurance Premiums.....		693.72	
Unemployment Insurance.....		480.49	
Repairs and Maintenance Charges.....		302.30	
Commissions to Group Secretaries.....		1,662.77	
Trans Canada Medical Plans—Travelling Fees and Expenses..		4,378.50	
Sundry Charges.....		2,983.25	86,908.53
			<u>\$ 44,551.83</u>
Operating Profit for the Period			

DEFICIT ACCOUNT

Deficit brought forward, January 1st, 1952.....		\$ 51,091.52
Excess of Revenue over Expenditure for the year 1952, per above Statement.....	\$ 44,551.83	
Less—Furniture and Fixtures written down in lieu of De- preciation.....	3,761.55	40,790.28
		<hr/>
Deficit carried forward, December 31st, 1952.....		\$ 10,301.24

MARITIME MEDICAL CARE INCORPORATED**PUBLIC WELFARE FUNDS**

Unexpended Balance brought forward, January 1st, 1952.....	\$	767.31
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RECEIPTS

Monthly Cheques from the Province of Nova Scotia.....	\$ 77,518.68	
Due from Province of Nova Scotia.....	6,935.48	84,454.16
		<hr/>
		85,221.47

DISBURSEMENTS

Doctors' Fees Paid in 1952.....	\$ 57,344.56	
Administration Fee.....	5,911.77	63,256.33
		<hr/>
		21,965.14
Less—Doctors' Accounts for 1952 submitted and approved for payment in January, 1953.....	\$ 4,421.50	
Provision for other outstanding 1952 Doctors' Accounts..	16,977.50	21,400.00
		<hr/>
Unexpended Balance carried forward, December 31st, 1952.....	\$	565.14

April 15, 1953.

Report of the General Manager

The President, Members of the Board of Directors:

The year 1952 was one of consolidation rather than expansion.

Enrollment:

In February our new rate increase went into effect, which was not met in an entirely acceptable manner. For some months our cancellations were quite heavy, primarily among those persons who had availed themselves of little or no medical care during the year. The vast majority accepted the increase with our explanation that because of the subscribers' high utilization of services rates had to be increased to meet their demands.

Some groups fell far below the required 75%, but during the year, through concentrated effort, all groups were brought back to the 75% figure and in most cases a little higher. Competition in the province was very keen during the period, particularly from the commercial insurance companies who were in a position to offer a "package plan" which included medical, surgical, and obstetrical care, hospitalization, weekly indemnity and in some cases life insurance; and in nearly all cases they undersold M.M.C., the reason being, of course,

that services offered were not nearly as comprehensive as those available under M.M.C.; but, like everything else, the cost is an important factor in making a sale. Over 90% of the subscribers to M.M.C. have some type of hospitalization coverage. The commercial insurance companies, while somewhat weak in the medical benefits they make available, have an excellent hospitalization plan, and as a result we lost some four groups to insurance companies. Actually, we took six groups away from the insurance companies. This type of selling in such a high competitive field is very expensive.

Notwithstanding considerable effort, we have still been unable to become registered in the Province of New Brunswick; but application has currently been made for licence under their Insurance Act which would allow us to do business in that province. At the present time we are unable to say if and when this licence will be granted.

Enrollment at the end of 1952 stood at 51,465. Actually some 3,000 of these people are persons who originally enrolled, cancelled when the rate increase came into effect, and were re-enrolled at the next group opening. We believe our subscribers are much better satisfied now than at any time in the history of the Corporation. Probably the two most common complaints received are that of extra billing and the X-ray problem. The X-ray problem righted itself a good deal when we discontinued the pro-ration and paid 50% of the schedule; but then we met the problem of receiving X-ray accounts in excess of the schedule and which had to be reduced and then paid at 50%.

Doctors' Accounts:

The utilization of services was slightly higher than the previous year, but on the other hand average individual accounts were slightly lower, which permitted us to pay accounts at 80% during the last ten months of the year; but even with the reduction in the individual accounts our costs per subscriber are still the highest in Canada and our income per subscriber is the third highest among the seven prepaid plans. So the problem revolves around the point that our subscribers are receiving more medical care than they are paying for. We still experience a very high incidence of illness during the first three or four months of the year, which tapers off during the summer and early fall, and increases again with the approach of winter. It is during the middle months of the year that we are able to accumulate a small surplus over expenditures.

We, similar to other pre-paid plans, encounter difficulties with subscribers who leave the province for medical treatment, particularly surgery. In all cases the fees charged by physicians elsewhere, particularly by name doctors, are many times the fee allowed by M.M.C. We do feel and the opinion has been expressed by members of the Medical Taxing Committee that a good deal of the work that is done outside the province could be done just as well at home, but on the other hand it has also been noted that the people concerned in a great many cases were referred outside the province by their family doctor.

Finances:

As seen from the Financial Statement, during the year we had a surplus of \$44,500.86 over expenditures after provision for unsubmitted accounts. Actually this surplus account was reduced by another \$3,761 when provision was made for depreciation of office equipment. \$1,500 of this depreciation

was written off against welfare equipment which was paid for the first year the Welfare Plan was in operation; but with the elimination of the Old Age Pensioners, the equipment in question is not currently used to capacity so we deemed it advisable to re-list it at its current value to us. The remainder is depreciation on our furniture and fixtures covering the past three years. We believe that this procedure is financially sound and that it is not accepted business practice to show your fixed assets at the full cost price except for the first year.

Welfare:

The Provincial Welfare Plan, administered by the Corporation on behalf of The Medical Society of Nova Scotia, operates with a minimum of difficulty. With the elimination of the Old Age Pensioners, costs dropped tremendously due to the reduction in the number of calls made by the physician and lower mileage costs. The majority of the Old Age Pensioners lived in rural areas, while now the majority of the beneficiaries of Mother's Allowance live in towns or cities. As a result, the Welfare Plan shows a sizeable surplus. Approximately 1400 Welfare cards are submitted each month by the doctors.

Medical Taxing Committee:

Twelve meetings of the Medical Taxing Committee were held during the year, and it was noted that while these doctors endeavoured on all occasions to be fair and just, there were occasions when from month to month there were inconsistencies in the fee allowed for similar procedures due in all cases to the fact that the procedure in question was not included in the minimum Schedule of Fees of The Medical Society of Nova Scotia. During the year an average 1,076 cards per month were taxed for one reason or another—the two major reasons being the fee above schedule or services rendered were above average. In some cases, on request of the physician who rendered the account, these accounts were re-submitted to the committee with additional information and they were approved as rendered. Over and above this figure of 1,076 approximately 300 accounts are returned to the doctors each month due to being incomplete or incorrect. During the year approximately 138,000 accounts were received from physicians. The average runs around 11,000 per month with the exception of January, February and March when the figure is higher. Approximately 400 of these accounts are received monthly for services by other than participating physicians. About one-half this number would be for X-ray services. During the year we find that more and more of our subscribers were taking up residence in other provinces, but very often we were not aware of the fact until such time as we received a doctor's account. A concentrated effort is being made to transfer these people to a pre-paid medical plan in the province in which they currently reside. The transfer agreement we have with all plans, except British Columbia, is working out very satisfactorily. We only had one transfer refused, and this was an individual who was obliged to become a pay direct on another plan and the person in question had a chronic condition which was almost a guaranteed liability to the incoming plan.

Trans-Canada Medical Plans:

Considerable progress was made during the year in attaining working agreements among the member plans. With seven plans across Canada, and

each of the different contracts has a different scale of monthly subscriptions, we believe that the co-operation shown signifies the good will of the participating plans and their desire to work as a unit on behalf of the welfare of all.

Administration:

During the year a complete re-arrangement of subscribers' files was undertaken where all subscribers were shown by number rather than by name. While this change-over took approximately two months to complete, it improved efficiency considerably; and when the plan went into operation one less employee was required in the Medical History department. Our administration costs for the year were reduced to 9.7%, which is an excellent figure for a plan our size.

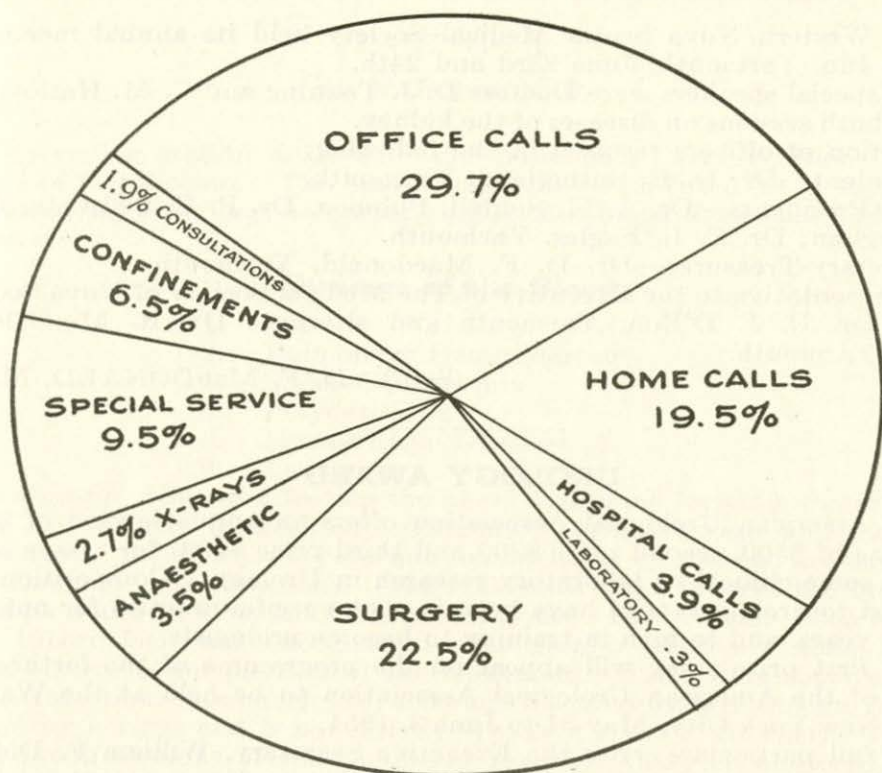
Staff:

In closing, I would like to express my sincere thanks to the staff for their co-operation and interest.

Respectfully submitted,

D. C. MACNEILL,
General Manager

DISTRIBUTION OF ALLOWED ACCOUNTS—1952



COMPARISON OF ALLOWED MEDICAL ACCOUNTS

SERVICES	1952		1951	
	ACCOUNTS	%	ACCOUNTS	%
Office Calls	\$261,028	29.7	\$200,553	27.6
Home Calls	171,508	19.5	150,071	20.6
Hospital Calls	33,890	3.9	36,324	5.0
Laboratory	2,236	.3	8,666	1.2
Surgery	197,968	22.5	161,775	22.3
Anaesthetic	30,691	3.5	25,052	3.5
X-Rays	23,688	2.7	39,485	5.5
Special Service	83,416	9.5	64,704	8.9
Confinements	57,098	6.5	28,457	3.9
Consultations	16,572	1.9	10,804	1.5
	\$878,095	100.0%	\$725,891	100.0%

Society Meeting

WESTERN NOVA SCOTIA MEDICAL SOCIETY

The Western Nova Scotia Medical Society held its annual meeting at Lakeside Inn, Yarmouth, June 23rd and 24th.

The special speakers were Doctors D. J. Topping and C. M. Harlow, who spoke at both sessions on diseases of the kidney.

Election of officers resulted in the following:

President—Dr. D. R. Sutherland, Yarmouth.

Vice-Presidents—Dr. A. M. Siddall, Pubnico. Dr. P. E. Belliveau, Meteghan; Dr. E. L. Eagles, Yarmouth.

Secretary-Treasurer—Dr. D. F. Macdonald, Yarmouth.

Representative to the Executive of The Medical Society of Nova Scotia—
Dr. B. J. D'Eon, Yarmouth and alternate Dr. R. M. Caldwell,
Yarmouth.

(Sgd.) D. F. MacDONALD, M.D.

UROLOGY AWARD

The American Urological Association offers an annual award of \$1,000 (first prize of \$500, second prize \$300 and third prize \$200) for essays on the result of some clinical or laboratory research in Urology. Competition shall be limited to urologists who have been in such specific practice for not more than ten years, and to men in training to become urologists.

The first prize essay will appear on the programme of the forthcoming meeting of the American Urological Association to be held at the Waldorf-Astoria, New York City, May 31 to June 3, 1954.

For full particulars write the Executive Secretary, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his hands before February 1, 1954.

PHYSICIAN WANTED

A physician is wanted by a medical group in a large Nova Scotia town. Excellent office and hospital facilities. Good remuneration. A recent graduate will be acceptable. For further particulars apply to the Secretary.

PRACTICE AVAILABLE

Practice available with open hospital, near Halifax, grossing \$14,000. Excellent office and house for rent. For further particulars apply to the Secretary.