

# THE ULSTER MEDICAL JOURNAL

PUBLISHED ON BEHALF OF THE ULSTER MEDICAL SOCIETY

VOLUME 40

1971

PART I

## "THE ULTIMATE DIAGNOSIS"

By **KIRK FORSYTHE, V.R.D., M.D., F.R.C.G.P., D.P.H.**

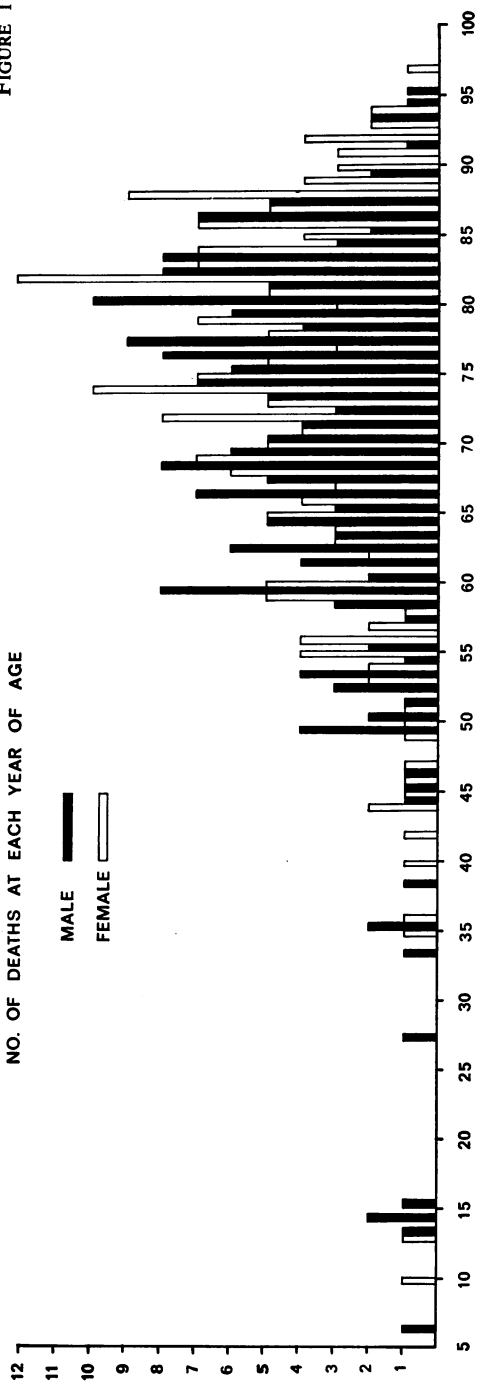
Presidential Address delivered before the Ulster Medical Society  
on 1st October, 1970

IN a short article in the British Medical Journal last year, a general practitioner recorded that one day the local postman said to him: "Doctor, most of those who pass away round here are patients of yours." It would certainly be true to say that many of those who have passed away in the Belmont area of Belfast during the past forty years were patients of mine, and this is a matter of mingled pride and regret. In the practice of clinical medicine we inevitable accept death as the conclusion of many of our cases. In general practice, however, the death of a patient brings to an end a professional association which may have extended over 40 years or more, and, on looking back, there are few deaths which I do not remember – some very clearly.

I have made a survey of all the deaths of patients in my practice during the past twenty-four years; that is to say, from my resumption of practice in 1946, after six years' absence engaged in other affairs, and up to the end of 1969.

I propose to look at three main aspects of the subject. First, the age at which death has occurred, or, as I prefer to regard it, the age to which each patient survived. Second, the broad groups of disease by reason of which death occurred, with some reference to individual cases. Third, there were some diagnostic problems, to which I shall refer. You may fear that this will be a formidable exercise in statistics, but I hope that these fears will be groundless. I acknowledge the essential part which statisticians play in medicine, but my personal orientation to the science was established many years ago, at a meeting of this Society. The occasion must have been the delivery of a paper on maternal mortality, and at its conclusion a much revered past president – only recently taken from our midst – proposed a vote of thanks to the speaker. With tongue in cheek, P. T. Crymble told us that, since graduation, he had conducted only one confinement. Regrettably, the mother had died, and her husband suffered a fatal heart attack at her graveside, completing an overall mortality, in his personal experience, of 200 per cent.

FIGURE I



The certification of the cause of death may be a difficult task, in many cases. The accuracy with which it is carried out is of importance to the Registrar General, but it is of greater importance to our patients, in a retrospective sort of way, because it depends upon our accurate diagnosis of their condition prior to death, "the ultimate diagnosis", and this is what guided our treatment. Many times I have sat at the bedside of a patient whose puzzling condition required further observation, and I have said to myself, "Supposing this patient were to die during the night, have I any idea what I would enter on the death certificate?" Some doctors have more inventive minds than others, in these matters, and I well remember being told by a midwife, some 35 years ago, of a confinement at which she had assisted a local practitioner, and in which the mother had quite unexpectedly died. The doctor had consoled the relatives with the explanation that everything had proceeded normally until the afterbirth had got up round the mother's heart, and strangled her! I do not know what he wrote on the death certificate.

In the period under review there were 412 deaths, almost equally divided between the sexes. I shall show you a few graphs, but I emphasise that these have no real statistical validity, as they are not based on a known population, and I have no record of the numbers and age/sex groups in my practice over the whole period. They are simply graphic illustrations of the ages at which these patients died, and of what were the common causes of death.

### AGE AT DEATH

Figure 1 shows the age at death of 412 patients. There were 203 males and 209 females. Twenty-five persons died under the age of 50 years but a nearly equal number (22) survived to over 90 years. One-third of the total lived to 80 years, or over (139). More than half of all these patients lived to ages greater than 74 years. The deaths up to 60 years of age were nearly equally divided between males and females. Between 61 and 70 there was a preponderance of male deaths (M49 F38) but between 71 and 74 the balance swung the other way (M17 F27), to revert again to heavier male mortality between 75 and 81 years (M50 F35). After the age of 81 the longer survival of females inevitably resulted in a greater number of female deaths over this age (M45 F70). Of the 22 patients who survived into their tenth decade, 7 were male and 15 female. The oldest was 97 years of age.

Figure 2 illustrates the same figures, but being in decades, is more easily interpreted. The Psalmist wrote: "The days of our years are threescore years and ten. If by reason of strength they may be fourscore years, yet is their strength labour and sorrow." This is belied by the happy, contented and vigorous octogenarians and nongenarians whom it has been my privilege to attend.

I wished to show some figures to compare with my own, and I was eventually able to find some which are not strictly comparable, but which serve my purpose. I took the Registrar General's mortality figures in different age periods for the City

FIGURE 2

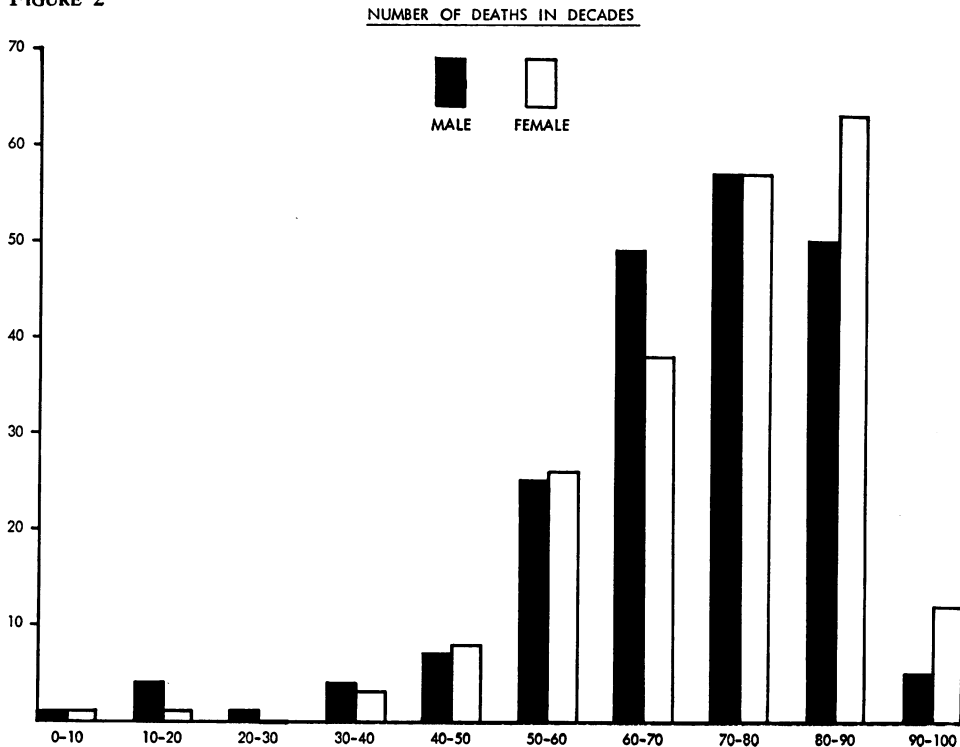
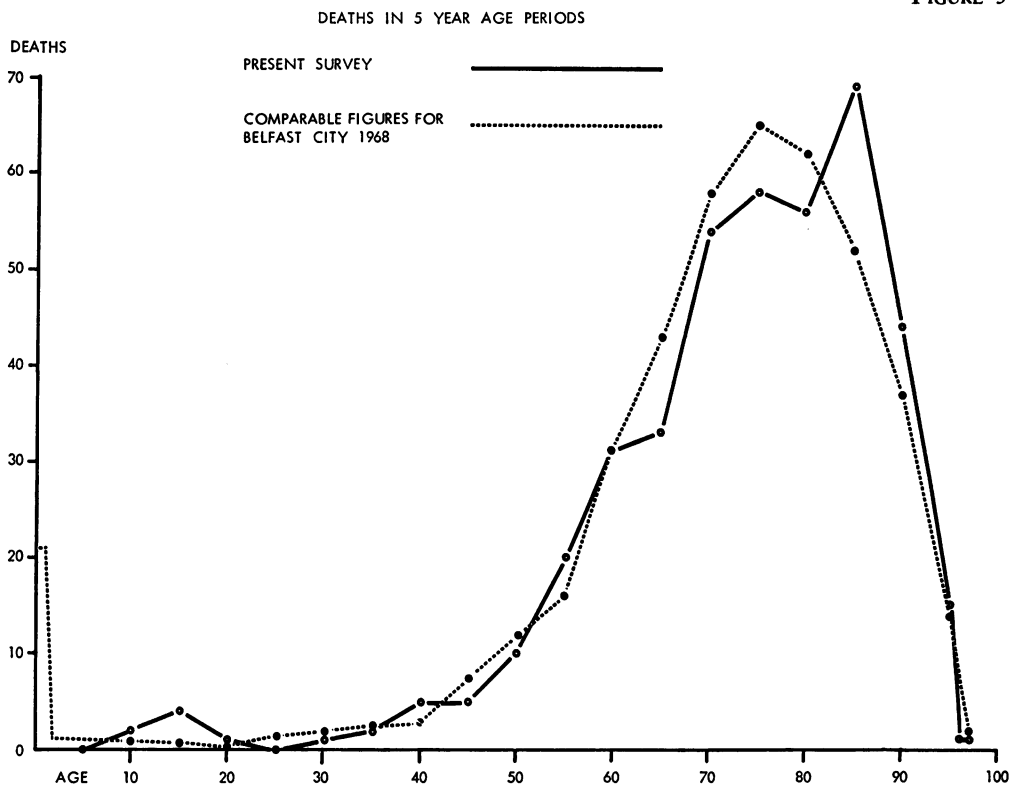


FIGURE 3



of Belfast in 1968, scaled them down proportionately, and plotted them as in Figure 3. The graphs coincide fairly closely up to the age of 60 years, but thereafter more of my patients have lived to a considerably greater age, than in the general city population. This is no doubt accounted for by social groups, standards of living, environment, and many other factors.

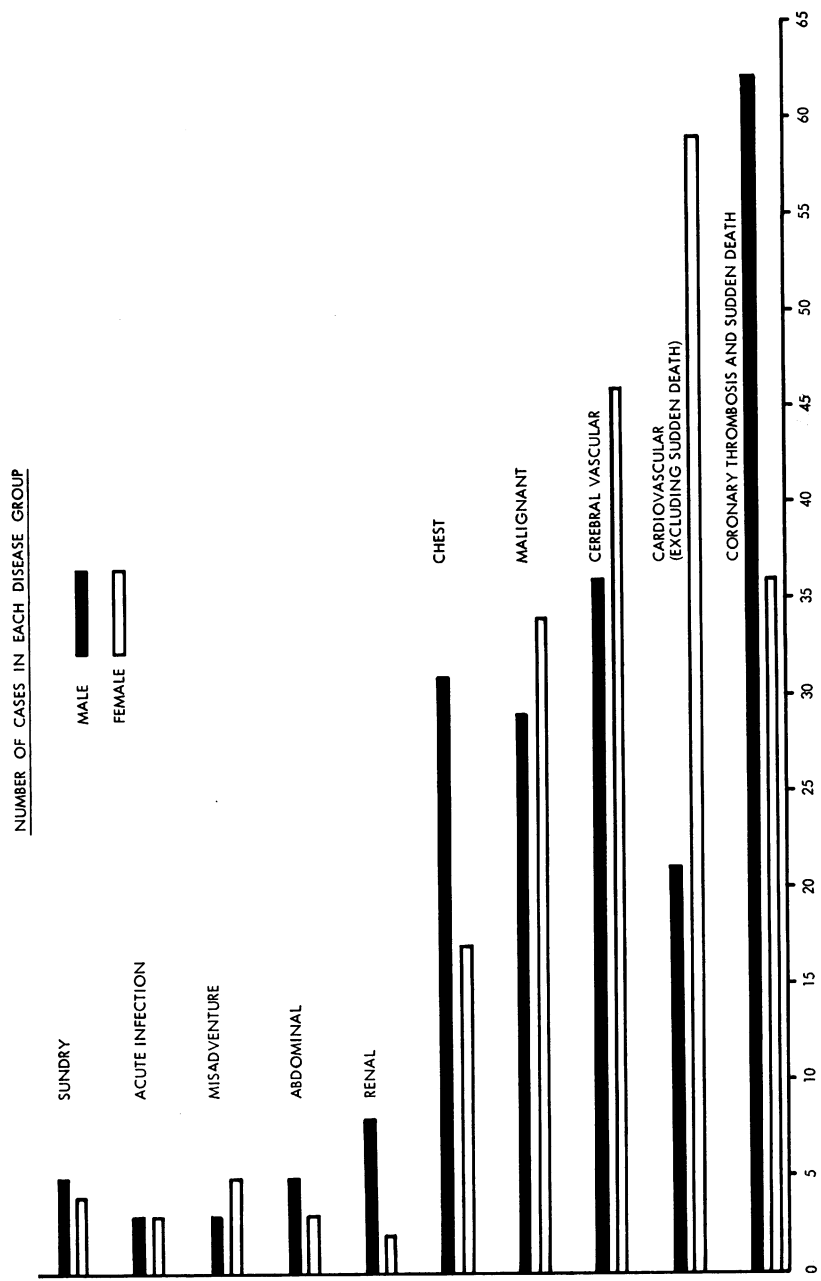
#### CAUSES OF DEATH

When considering the causes of death, I have found it convenient to ignore the accepted international classification, and to place all the deaths in ten groups. This is open to criticism, inasmuch as some of the groups are based on anatomical or systemic criteria, and others on causative factors, but it makes for simplicity. Figure 4 shows the groupings which I have adopted. All cases of malignant disease are grouped together and are not included in any other group.

#### *Sundry diseases (9)*

Four patients died of inanition and exhaustion following prolonged suffering from chronic rheumatoid arthritis. There were two cases of leukaemia and one of Hodgkin's disease. A boy of 14 years died as the result of muscular dystrophy complicated by measles and pneumonia, and a child of 10 years in status epilepticus, in spite of having undergone hemispherectomy.

FIGURE 4



#### *Infective diseases (6)*

This is a rather vaguely defined group of infections affecting various organs, but not meriting individual grouping.

- 1 Polio-encephalitis
- 1 Influenzal meningitis
- 1 Non-specific meningitis
- 1 Infective hepatitis with necrosis of the liver
- 2 cases of diabetes, who died from general septicaemia.

The case of poliomyelitis occurred in the caterer of a well-known public school, at the very beginning of term, and, naturally, extreme vigilance was exercised during the following two weeks or so. One of the cases of diabetes had been in coma, but made a rapid recovery after the intravenous infusion of glucose and insulin, only to die a week later with general septicaemia and multiple abscesses. This was a long time before the establishment of the Central Sterile Supply Department. The other diabetic died of septicaemia and other major complications arising from infected insect bites.

#### *Accident or misadventure (8)*

Three deaths resulted from road accidents and there were two from fracture of the neck of the femur occurring at home. One elderly man suffered a pulmonary embolus following fracture of ribs. A paraplegic, addicted to smoking in bed, died from burns, and there was a very tragic case of accidental hanging.

#### *Abdominal diseases (8)*

Two cases of cirrhosis of the liver, one of diverticulitis and one of oesophageal stricture due to hiatus hernia. There was also a case of pulmonary embolism following herniotomy, two cases of non-malignant intestinal obstruction, and a strangulated hernia.

#### *Diseases of the renal tract (10)*

There were four cases of nephritis and five of non-malignant prostatic obstruction. The remaining case had tuberculosis of the kidneys and bladder, and eventually died as the result of obstruction of the ureters following transplantation into the colon.

#### *Diseases of the chest (48)*

We are now coming to the more common diseases, and the groups are increasing in size. Eight patients died from pulmonary tuberculosis and they were all chronic cases which did not have the benefit of the recent forms of chemotherapy for this disease. All except one died more than twelve years ago, the remaining case surviving, with active disease and chronic fibrosis, to the age of 82, and only died two years ago. Excluding this case, the average age at death of the remaining seven was 51 years, which demonstrates that tuberculosis was one of the "killer" diseases of the past.

There were 17 deaths due to chronic bronchitis, 8 of these being associated with asthma and cor pulmonale. The average age at death of patients with severe asthma, terminating with cor pulmonale, was 60 years – again a disease of the chest which does not lead to longevity. It is noteworthy that 23 patients died from acute bronchitis or pneumonia, in spite of the use of antibiotics. The average age of these acute lung cases was 78 years, and I quote from an article by Dr. George

Adams: "It is a popular fallacy, even among doctors, to imagine that society is overburdened with senility because antibiotics have deprived us of Osler's 'Old man's friend'! Old people still die of chest infections, in spite of antibiotics." But they do not always die. Some years ago, while I was on holiday, a dear old lady, verging on 90 years of age, but with all her faculties, recovered from a severe attack of pneumonia following very heavy dosage with antibiotics. Presumably as the result of anoxia, or toxic causes, her mental capacity became gravely affected, and she spent the remaining seven or eight years of her life in a mental hospital, eventually dying at the age of 97 years. I think that she was quite happy there, and is reported to have thought that she was in a somewhat eccentric hotel, being wont to chide the strangely attired waitresses and chambermaids, from time to time, and possibly to complain to the "manager".

Apart from pointing out its place as a cause of death, I shall defer comment on malignant disease at the moment. The wide variety of its manifestations merits separate illustration.

#### *Cerebral vascular disease (82)*

This is a large group, almost entirely comprising very elderly patients, whose lives were terminated by cerebral vascular accidents. There were four patients who died at a relatively early age from sub-arachnoid haemorrhage (one at the age of 28 years) and a woman suffering from severe malignant hypertension, who had a massive cerebral haemorrhage at the age of 59 years.

#### *Cardiovascular disease (excluding coronary thrombosis and sudden death) (80)*

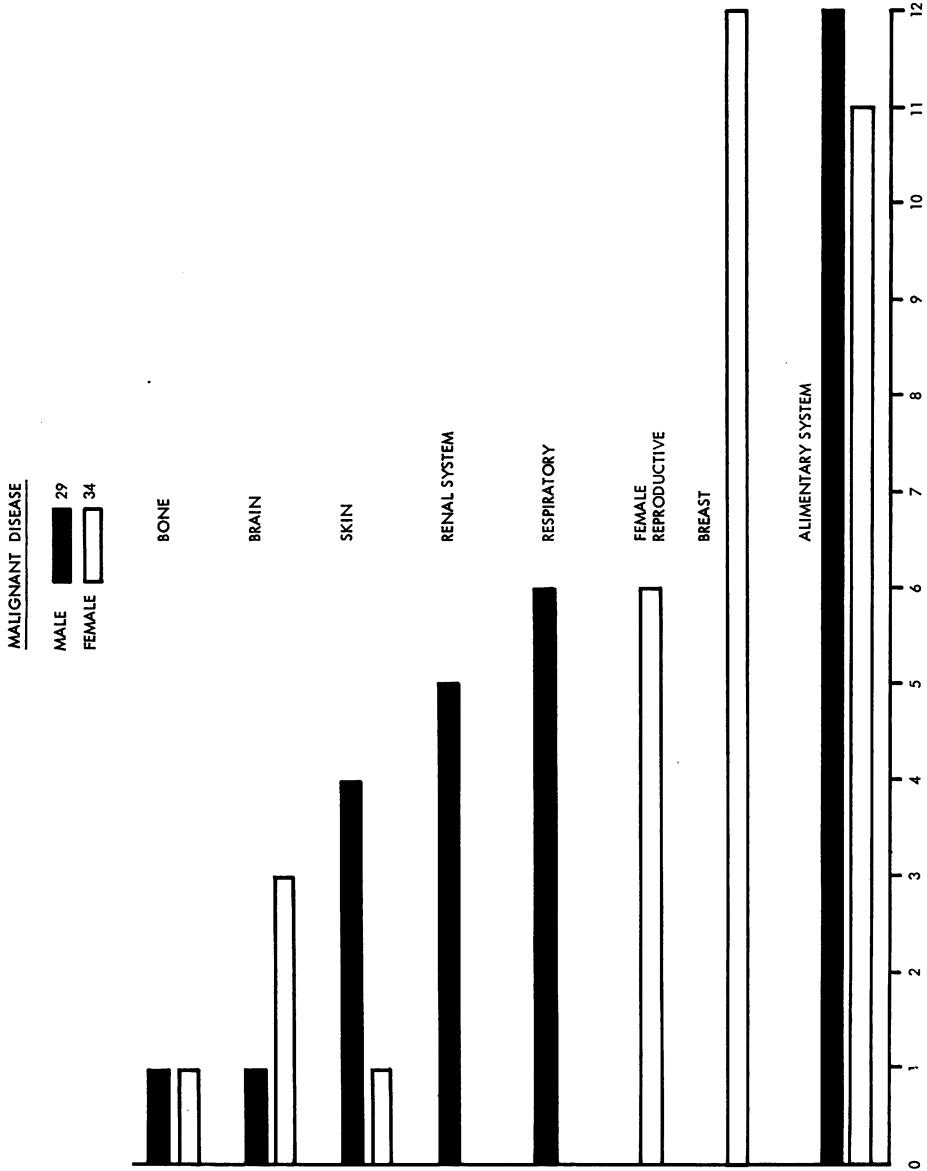
The great majority of the 80 patients whose death was certified as being due to cardio-vascular disease were in advanced years, almost two-thirds of the total being over 80 years of age, and only 8 (or 10 per cent) were under the age of 70 years. This is, therefore, a group, mainly of old people who lived on, free from other mortal disease, until hypertensive or degenerative changes brought about their death by heart failure. There were 4 cases of thrombosis of the femoral artery or femoral vein, and one case of specific aortitis. Only 2 cases of rheumatic valvular disease are recorded, one of whom died following attempted valvulotomy at a very late stage of her illness.

#### *Coronary thrombosis and sudden cardiac death (98)*

These 98 patients were either known to have died as the result of coronary thrombosis, or died suddenly, or were found dead, in circumstances which pointed strongly to sudden cardiac death. At least half of these patients certainly had coronary thrombosis, as confirmed by post mortem examination or by the known circumstances of their death. There is no reason to doubt that the majority of the remainder probably suffered from coronary occlusion, and most of them were certified accordingly. The usual preponderance of males over females in this group is quite clearly shown (M62 F36). There is no doubt in my mind that some of these patients could have been saved, if the modern cardiac emergency service had been available, and I can recollect a number of patients who died suddenly while I was at their bedside.

We can all remember cases of sudden death which caused us some special embarrassment. One patient was reviewed routinely in surgery, his prescription

FIGURE 5





for tri-nitrin tablets renewed, and five minutes later he died on the roadside 200 yards from my door. Another patient, well-known in public affairs, had an electro-cardiogram done twice within a week, both being reported to be normal, and, on being allowed up, he died half an hour later. Two other patients, apparently previously well, were found dead in their bath. One evening, at the beginning of surgery, I went into my waiting room and found the only occupant to be a corpse.

Further reference to these groups of diseases reveals that death resulting directly from failure of the heart or blood vessels occurred in 260 out of the total of 412 patients, or 63 per cent. Adding 8 cases of misadventure and 63 cases of malignant disease brings the total to 331, or 80 per cent. All the other diseases "in the book" only accounted for 20 per cent of the total deaths, and therefore it is easily seen that any major prolongation of life in the future must depend on a solution of the problem of malignant disease, and the prevention of heart disease in middle age.

#### *Malignant disease*

Figure 5 shows the sites in which malignant disease occurred, and its relative incidence in different systems. The number of deaths of females from malignant disease of the breast and reproductive organs has, to a large extent, been offset by the preponderance of males having disease of the skin, urinary tract and lungs. The brain lesions were all primary. (Cases with secondary brain lesions are included in other groups according to the site of their primary disease). There were five cases of malignant disease of the skin (including two of melanotic sarcoma) and three cases involving the mouth. In all these eight cases the lesions were readily visible, emphasising the need for acute vigilance in skin or mouth lesions which might have a malignant basis. Urinary tract disease comprised two renal tumours, two malignant prostates and one papilloma of the bladder. There were five cases of carcinoma of the lung, and one of carcinoma of the larynx – all in males. There were twelve cases of breast cancer, four of disease affecting the ovary, one the vulva and only one uterine cancer. The largest group, as might be expected, was in the alimentary system, and Figure 6 shows the distribution of the various sites.

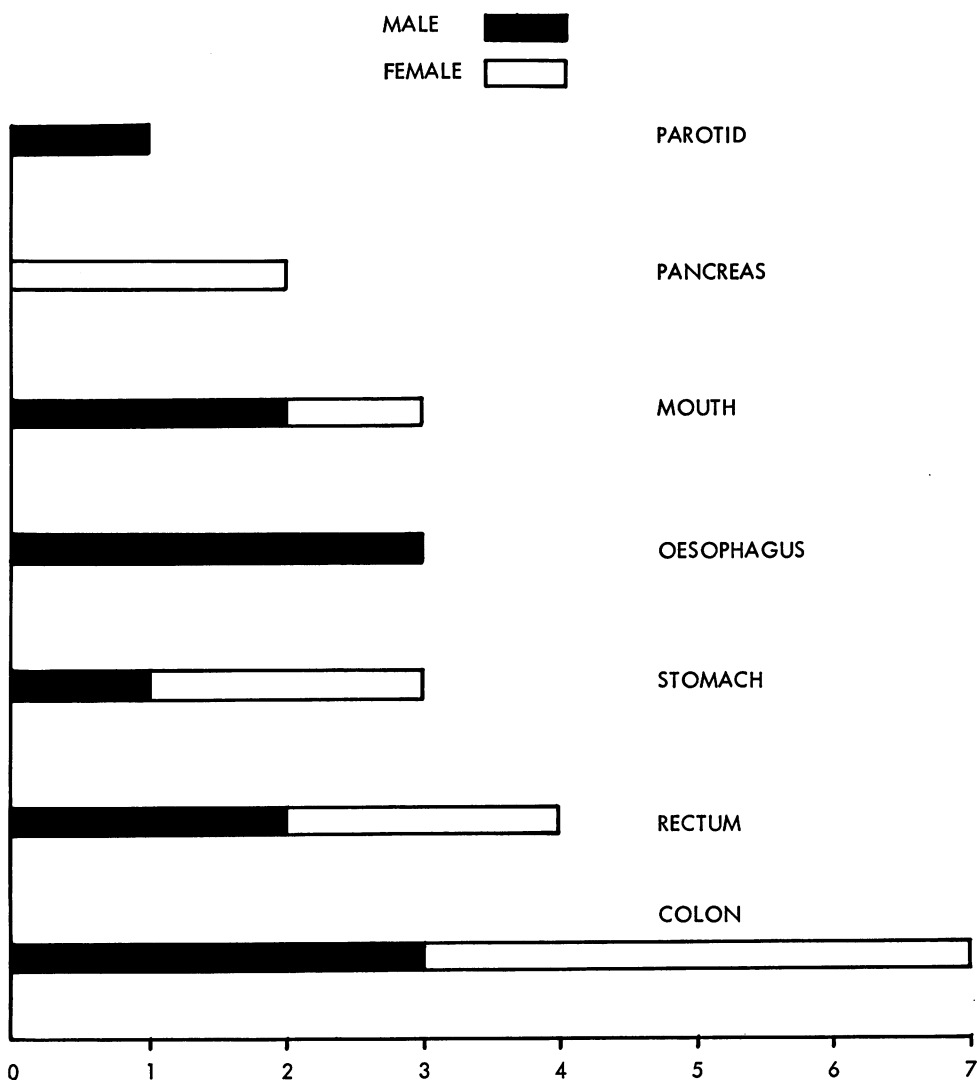
Looking back over the years one inevitably remembers cases, the diagnosis or treatment of which left something to be desired, or recollects occasions on which some axiom or aphorism has been forgotten. As Jonathan Swift wrote: "A man should never be ashamed to admit he is in the wrong, which is but saying, in other words, that he is wiser today than he was yesterday." The commonest error on my part appears to have been undue concentration on the site of symptoms, instead of regarding the body as a whole, but the factors of pressure of work, and available time, are relevant. In 1950 a mother brought her son, aged 5 years, to my surgery, with the story that he had been noticed to be limping during the previous week, and had stumbled once or twice. Brief examination showed that he had considerable paresis of one leg, and as poliomyelitis was prevalent at the time, I had no hesitation in sending him to the Northern Ireland Fever Hospital. My satisfaction with my diagnosis was short-lived, as Dr. Kane 'phoned me on the following afternoon to say that the boy was in the Neuro-Surgical Unit, for investigation of his brain tumour. He had, indeed, a malignant tumour, and ultimately died in the condition

of opisthotonos – the only occasion on which I have ever seen this.

One Saturday afternoon I saw an elderly woman, who complained of pain in her left knee – which looked normal. Suspecting that she had osteo-arthritis of her hip joint, I made a gentle manipulation, and to my consternation I felt the “snap” as her femur fractured. More extensive examination revealed an advanced breast carcinoma with bone metastases.

FIGURE 6

MALIGNANT DISEASE OF ALIMENTARY SYSTEM



In 1946, routine screening had not yet become a well established procedure. A middle aged professional man came to Belfast in that year, under my care, with a long history of controlled diabetes. He also had a history of recurrent ischio-rectal abscess, and had frequent obscure febrile attacks. No one had ever thought of examining his sputum, of having a chest X-ray, but at a later date it was found that his sputum was teeming with tubercle bacilli.

An elderly well-known public figure consulted me because of sudden severe pain in the distribution of his anterior crural nerve. This appeared very likely to be due to a lumbar disc lesion, and knowing his impatient temperament, and that relief was likely to be slow, I wasted no time in seeking the support of a consultant orthopaedic surgeon. While agreeing with my presumptive diagnosis, he proceeded to a general examination, and my face reddened when he demonstrated a spleen extending almost to the umbilicus, the result of chronic myeloid leukaemia. The patient was a hunting gentleman, and I had some difficulty in persuading him that a liberal application of strong horse linament was unlikely to relieve his symptoms.

In hospital, errors also occur, but here I think that the main factors are lack of previous knowledge of the patient, failure of communication, temporary loss of touch of the patient with his own doctor, and occasionally the failure of a relatively inexperienced member of the hospital staff to seek a more mature opinion.

Some 20 years ago, a young man, 28 years of age, presented himself, complaining of supra-orbital pain and double vision, and was seen to have a squint and a dilated pupil. This merited specialist advice and he was immediately referred to hospital, but through a combination of misdirection, faulty communication, and temporary loss of contact with me, the only action taken was to do his Wasserman three times in successive weeks, all being reported negative. He died in sudden convulsive coma. In present times I have no doubt that his aneurysm would have been diagnosed and probably successfully treated.

A man, 80 years of age, consulted me about a very odd looking knob on his cranium. My diagnostic skill did not go beyond feeling quite sure that it was not a sebaceous cyst. Rather ridiculously, searching for a possible diagnosis, the only thing which came to my mind was a whisper from a dim past of 40 years ago – something about a “Pott’s Puffy Tumour”. But I had no recollection of what that was. I referred him to hospital and I eventually received two independent opinions, one advising removal of the “sebaceous cyst”, and the other advising that the “sebaceous cyst” should not be removed! Further representations secured his admission to a hospital ward where the correct diagnosis was made, and treatment of the Sarcoma of the parietal bone was commenced.

To emphasise the pitfalls of failure of communication, I will relate one more dismal tale. A woman of 83 years was admitted to hospital with a firm diagnosis of carcinoma of the rectum. She had a detailed letter, stating that she was also known, by previous investigation, to have a freely mobile and palpable right kidney. I do not know what became of my letter. The patient returned home two weeks later – not with a colostomy as I had expected, but with a paramedian scar, and a report that laparotomy had shown the swelling in the right upper quadrant of her abdomen to be her right kidney.

I would like to refer now to a few incidents which have lingered in my memory for various odd reasons.

In 1957 a young woman of 34 years, with advanced carcinoma of a breast, submitted to a series of surgical manoeuvres including mastectomy, hypophysectomy, oophorectomy, and other extensive therapy. Three years after her death, her sister, then aged 36 years, came to see me, and volunteered that there was something wrong with her breast. My first reaction was that, with knowledge of her sister's case, she was probably seeking reassurance about a trivial lesion, or at worst, had a very early and probably curable nodule. To my consternation she then revealed a huge ulcerating carcinoma. She had not wanted to worry her two remaining sisters! To the best of my knowledge they remain in good health, but I have always had some apprehension when I have noticed either of them in my waiting room.

Two elderly sisters, aged 82 and 88 years, led a rather spartan and independent life, but were rarely ill. In the severe winter of 1958/59, when there was deep snow on the ground, I was asked to call. Their house was bitterly cold, with no sign of a fire or a radiator. I doubt if there was any food. Both women were in bed, helpless, their limbs icily cold and blue, and their legs covered with large lesions of bullous impetigo. They were classical cases of hypothermia, and were immediately admitted to hospital, but died soon after. And so, two old women almost froze to death in a busy populous city suburb, because no-one knew of their plight.

An old gentleman developed an odd looking raised brawny area of skin on his shoulder. As it increased in size, and I had never seen a similar lesion, I asked Dr. Reggie Hall to advise me, and he had no hesitation in recognising a sarcoma of the skin. In spite of treatment, it spread uncontrollably. Shortly before this, at about 90 years of age, he underwent removal of his prostate, and very intensive post-operative resuscitation measures were required. He was able to return home some weeks later, and told me that he felt well, but he complained bitterly about a pain at his left ankle. This I was able to relieve by removing a rather dirty bandage and extracting a tied-in intravenous cannula, obviously there for many days, if not weeks.

A few years ago, looking over my morning mail during breakfast, I noticed an envelope addressed in distinctive handwriting, which I immediately recognised as being very well-known to me, but I could not identify the writer. Little wonder, perhaps, because I had last seen this handwriting some 35 years before (which leads me to explain that this anecdote will have little or no meaning to our younger members, but may be of interest to my contemporaries). The letter was from an elderly lady, asking me if I would accept her as a patient, which I was glad to do. She later developed a hemiplegia and was cared for, at first, in a hospital which she had served faithfully for many years, and after that was in Dr. Adams' care in Wakehurst House. Dr. Adams has told me that on asking her one day how she was, she insisted that she was very well and had nothing wrong with her, and when he suggested gently that perhaps she might have had a "wee stroke", she sat up straight, and said with outraged pride, "The Luttons do not have strokes." One could wish that this spirit was more commonly displayed.

I will describe two cases, in which the patients' awareness of serious illness was in marked contrast.

The first, a clergyman aged 82 years, suffered a very severe attack of coronary thrombosis and it was immediately apparent that his condition was very grave. Having given him the necessary pain killing drugs, etc., I retired to the drawing room and told his relatives that his prospects of survival were very small indeed. I returned to the bedroom where the patient greeted me with a smile, said that his pain was much easier, and asked if he could get up in the afternoon! He died about two hours later, but apparently had no insight into the gravity of his condition.

The other case was a very elderly medical colleague, whom I had attended for some years. He was somewhat chesty, had a poor circulatory system, and an abdominal aneurysm, but he got along fairly well. I was surprised to be asked to see him one evening, as I had already visited him that morning, when his condition seemed much as usual. When I entered his bedroom, he said, "Doctor, I'm done." When I demurred, he said firmly, "Doctor, you know and I know that I will not be here tomorrow morning." I examined him again and I could not support his pessimistic prognosis, but I was puzzled, and I sat and watched him for some time. Very gradually the picture changed and he became more ill-looking, with evidence of failing circulation. He reached out his hand, shook mine, and said, "Thank you for all you have done for me." He was dead within an hour. This old man had quite clear awareness of his impending death.

We have considered the "Ultimate Diagnosis". Finally may we consider the situation when the "Ultimate Prognosis" appears to be that of inevitable death. Fewer than 40 per cent of the patients, whom I have referred to, died in hospital – the great majority of the remainder in their own homes. To use a topical, but unhappy phrase, unless there are "obvious compelling reasons" for hospital treatment, I am quite certain that every effort should be made to care for terminal cases in their own familiar surroundings. Relatives, even if unskilled in nursing, can provide soothing care and comfort. The presence of the family doctor is not regarded lightly. Surely after a happy life, it is fitting that it should be relinquished only in the presence of one's "Lares et Penates". I cannot phrase it more aptly than by mis-quoting Oliver Goldsmith, who might well have written, in "The Traveller" –

"Where-er we roam,  
The first, best nursing home  
Is still at home."