Title A Nurse Led Assessment Prior to Elective Admission for Surgery

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ABSTRACT

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This thesis reports on a study undertaken at an NHS Trust during a thirty month period commencing January 1994. The aim of the study was to evaluate the results of a pre-operative assessment clinic for adult patients due to undergo major and minor elective surgery, (other than those admitted for gynaecological procedures).

The primary focus was on hospital efficiency, within government initiatives, and the use of assessment as a means to guarantee a bed on admission, reducing theatre cancellations and waiting list times. The main outcome measures are the reduced theatre cancellation rates, increased patient throughput, and a clear reduction in length of stay.

A secondary theme was explored, that of multi-disciplinary collaboration in particular doctor nurse collaboration; the role and ability of an advanced nursing role, whereby the assessment clinic provided the environment for comparison of patient outcome between those seen by doctor or by nurse assessor.

The study compared all patient admission episodes and outcomes with respect to patients assessed and those not assessed. The study is able to demonstrate that a nurse performed at least as well as the doctor.

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CHAPTER ONE

ASSSESSMENT CLINIC FOR ELECTIVE SURGICAL PATIENTS

This is a study of an innovative nurse-led pre-operative assessment clinic for patients and is the result of one hospital's attempt to improve patient care within the boundaries of elective surgery. The main aim of the study is to provide the best possible care, for the patient due for elective surgery in a district general hospital.

So why should a nurse want to assess patients, what is innovative about it? Nurse or doctor assessment of patients' is limited to the boundaries that are imposed by the specific questions asked. Provision of nursing care being planned separate to but with awareness of the surgical intervention planned. Quality patient care should respect all aspects of a patient, their past medical history; current medical history; medication requirements; nursing requirements; social requirements. To provide provision for these requirements, respecting the individuality of the individual patient requires planning, in advance of admission to hospital, in a pre-operative assessment clinic.

The innovation, is that a nurse has developed her 'nursing' role, to encompass the patient care more fully - in essence, to include a medical assessment of a patient, together with identified nursing and social needs. This provides the basis for the implementation of an individual care package for the patient, initiated prior to admission. The nurse has applied her professional knowledge, linked it with multi-disciplinary team members to work in collaboration, in essence, recognised that to work individually as professionals is not necessarily for the patients' best interests, but that a collaborative approach, perhaps removing the barriers of compartmentalising tasks, can enhance patient care. Worthy of note is that since completion of this study, the DoH 1998 issued an initiative on clinical governance designed to improve standards of care for patients and clients, by encouraging multi-disciplinary team members to work with evidence-based practice, continuing professional development and reflective practice. (This will be discussed more fully within Chapter Two.)

This study will specifically consider assessment clinics - is there a need for pre-operative assessment of all patients whether for major or minor surgery? The assessment of selected patients prior to admission for elective surgery has been undertaken by medical staff for several years and, as will be shown in the literature search, the reasons for undertaking such

a clinic are many and far ranging. In the main, however, they are offered to those patients due to undergo major surgery.

Secondly, this study will discuss who should perform the assessment - doctor or nurse. Both a doctor and a nurse will assess patients, and their outcomes in terms of patient cancellation rates and length of stay will be compared with those patients not assessed prior to admission. It should also be noted that, until recently, nurse-led assessment of patient has been organised only for those patients due to undergo day case surgery. The present study is of an NHS Trust, in which a nurse has taken a lead role in the assessment of adult patients due to undergo elective surgery except cardiac and gynaecology. The nurse has considerable experience, and has undertaken specific training to extend her knowledge and skills. Nurse-led assessment could not be considered successful unless it can be shown that a nurse is capable of undertaking the duties, and that there is no significant difference between patients assessed by a nurse and patients assessed by doctor. If this can be shown, there would be an incentive for other NHS hospitals to consider similar provision within their surgical units.

In this opening chapter, the role of assessment clinics will be discussed, and the reasons why such clinics have been introduced in one format or another, in NHS Trusts' or district general hospitals throughout the county. To put the significance of this innovation into context, the "traditional" admission process will be discussed together with the most commonly encountered problems.

Chapter Two will consider the literature search on the changes implemented within the NHS from government initiatives in the recent years and the resulting influence that they have had on health care provision, followed by the role of medical and nursing staff - the historical and collaborative approach.

In Chapter Three, the district general hospital concerned will be discussed, its resources and limitations. The creation of an elective surgical unit, with the provision made by the Chief Executive that "No patient due for elective surgery will be cancelled due to lack of a bed", which prompted the implementation of the changes in the admission process, and introduction of the assessment clinic with a trial period.

Chapter Four will discuss the planning of the assessment clinics - having undertaken audit from the trial period; formation of protocol; and procedure documents.

Chapter Five will discuss the data collection, and assessment outcomes from doctor and nurse.

Chapter Six will analyse the data of patients' hospital admission episode, comparing the length of stay of patients' admitted without assessment and those seen by doctor or nurse.

Finally, Chapter Seven will discuss the outcomes from the study, in terms of enhanced patient outcome, doctor-nurse collaboration, and hospital efficiency.

First then, the traditional admission process.

1.2 Traditional admission process

The "traditional" admission process is that which applies in the majority of NHS hospitals. There are many factors to be considered in the admission process (see Table 1), which begins with the placing of patient details on the waiting list and ends (for the purposes of this study) in the patient's admission for surgical treatment.

1.2.1 Outpatient visit

The surgeon from whom an 'expert opinion' was sought will provide just that: an opinion on the patient's presenting symptoms, the possible cause, the likely consequences, and/or treatment. Unless the GP has described other underlying medical or surgical concerns in the referral letter, the surgeon does not investigate other general health issues. This immediately raises a question, would the identification of general health issues at this stage of the admission process assist in improving the patient care on admission for surgery?

When the expertise is sought from the consultant in outpatients, the patient's symptoms are discussed, and the patient examined to elicit all information associated with the disorder. The patient may be required to undergo certain investigations which will assist in diagnosing, and he may be prescribed medication or treatment, such as physiotherapy, to relieve the symptoms and/or cause of the condition; the patient would then be reviewed in the outpatient clinic.

Once the condition is diagnosed, and a decision taken that an operation is required, the patient has his/her details of planned operative procedure put on the waiting list. The patient will have no further contact with the hospital or the surgeon until the notice of proposed admission date is sent. Each patient is selected for admission according to the degree of priority for operation.

1.2.2 Waiting list for surgery

The length of this wait can vary, from immediate admission, for a matter of extreme urgency, to eighteen months or more. Prior to the changes introduced by the Patients' Charter, no maximum waiting time. However, the Patients' Charter, stated that no patient should wait for surgery for more than two years (later reduced to eighteen months). It should be noted that, during this period, the symptoms may have modified, and the initial condition may have developed; but, unless the GP has written to inform the consultant of any changes, no amendment will be made to the diagnosis or course of treatment as recorded on the patients' notes and waiting list. When the operation list is being planned by the consultant, and the admission officers, the patient is sent a letter asking him/her to attend the hospital on a certain date and time. The letter will also request that the patient telephones on the day of admission to confirm that a bed is available.

Table 1 The Traditional Admission Process

1. General Practitioner Referral
2. Outpatient Appointment +/- investigations
3. Decision taken by Consultant to operate
4. Patients' details put on Waiting List
5. Patient waits to be given details of admission - between 1 - 18 months
6. Admission officer sends letter to patient with admission date.
7. Patient placed onto operation list.
8. Patient telephones on day of admission for a bed, or fails to make contact (did not arrive).
9. If no bed available patient informed of a new date

10. If bed available patient enters hospital ward

11. Patient has bed confirmed.

12. Patient is checked for fitness for surgery, diabetes, hypertension etc.

13. Patient is checked for the need of surgery

14. Patient fails fitness check and/or need for surgery - further investigations and/or sent home to general practitioner together with new date for surgery or,

15. Available theatre time and equipment checked. If no time or no equipment/appropriate surgeon operation cancelled or,

16. If all correct, operation proceeds.

17. No decision is taken prior to admission with regards discharge planning.

1.2.3 Preparation of the operating list

In order for the admissions officer or consultant secretary to prepare an operating list, liaison with the consultant is essential: the majority of consultants making the decision as to which patients he/she will operate on for any given list. The consultant will keep an "operating list diary" with him/her in order to compile the operation list, and will add or make changes to the list as each outpatient clinic is progressed. If the admission officer or consultant secretary are required to find additional patients to fill the list, the waiting list cards will be taken in priority order (that is the degree of urgency) and date order (that is, the date on which the patient was placed upon the waiting list).

Certain other factors become relevant before an operating list can be put into effect. For example, the surgeon may require special equipment, or request that a certain person should perform the operation; the patient may not wish to proceed with surgery at the time called, or be unwell; the patient may have other health issues which may preclude surgery, or which require treatment and/or stabilisation prior to surgery; the patient may have decided not to proceed with surgery at all, or the patient may have changed address without informing the admission office. During the wait for surgery, any concerns of the patient may be amplified by the length of wait, and hearsay comments or ill informed media analysis. He/she may have fears about proceeding, or queries left unanswered. It is documented that "stress and

anxiety caused by illness, admission to hospital and surgical intervention produce an imbalance in homeostasis which presents as psychological and physiological distress which impedes recovery post operatively" [1, 2]. This is one reason why preoperative assessment is necessary. The aim of the assessment is to gather both verbal and physical information about the patient, but also to provide time for the patient to share their concerns and fears, so that the patient leaves the assessment with an understanding of the coming hospitalisation, together with a knowledge of how the surgery will affect them physically. He/she will also be informed of any restrictions that will have to be placed on social, and work commitments, and that he/she can be reassured. Early explanation and discussion of patient fears, together with reassurance has been shown to promote recovery of hospitalised patients. [1, 3, 4] Attendance at the interview of a relative or carer is also encouraged. This helps in the patient to be more relaxed and also to provide the opportunity for the patient to discuss with their relative (after the interview) any matters that had been agreed in the interview. Often the relative recalls queries which the patient could not remember within the interview situation. Discussion of these concerns is likely to make the patient feel less apprehensive on admission.

In the 'traditional' admission process, there is no planned opportunity for the patient to discuss with hospital staff their fears or concerns about admission. The ten minute consultation in outpatients only provides the patient with the name of the operation planned, and offers the hope that it is the treatment which will ultimately help him/her. Possible complications will be mentioned, leaving the patient with much to think about on leaving the outpatients' department. But there is little or no time to formulate questions, or to voice concerns at the time of interview; and so there is little scope for discussion with the family afterwards. The patient may view the interview with apprehension[5,6,7,8]and may feel rather uncomfortable - with the result that he/she may forget to raise questions.

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[1] Caunt H , Preoperative nursing intervention to relieve stress. British Journal of Nursing, 1992, Vol. 1, No 4 p 171-174

[2] Boore JRP "Prescription for Recovery" Royal College of Nursing research series, RCN Nursing Times 85 (31):52.1978.

[3] Murphey et al, 1977 Sleep deprivation in patients undergoing operations - a factor in the stress of surgery. Br Med. Journal ii: 1521-2

[4] Bailey - Nurses' perception of stress in preoperative surgical patients 1989 Journal of Advanced Nursing, 1989, 14 575-581

[5] Benbassat J, Pilpel D, Tidhar M, Patients' preferences for participation in clinical decision making: a review of published surveys. Behavioural Meicine. 1998 Summer; 24(2): 81-88.

[6] Hahn SR, Thompson KS, Wills TA, Stern V, Budner NS The difficult doctor-patient relationship: somatization, personality and psychopathology. Journal of Clinical Epidemiology 1994 June; 47(6): 647-657.

All these factors make it difficult to plan an operating list with any confidence that all patients will arrive - or, if they do, that they will be fit for surgery. It is not even certain that they will require the surgery which was initially thought appropriate (their condition may have altered, for the better or worse).

One further feature of the 'traditional' admission process is worth describing: that of discharge. Discharge arrangements[9,10,11] are not usually discussed in advance of the patient's admission, and rarely in detail prior to the operation. Yet the question of discharge will be of paramount importance following surgery, and the patient's recovery from operation. The patient for the next operating list will be telephoning to check availability for their admission, and if no bed is available (perhaps because a previous occupant has not been discharged) they will be told that the admission has been cancelled. The result is that the operating lists, although planned, will be subject to late change - depending upon the individual decisions taken in consequence of the expected or actual arrival of the patient. If emergency patients are also admitted to the ward, as is the norm in many district general hospitals, then their needs will take priority over an elective surgical case, resulting in less time being available on the operating list for the elective patients (especially during winter when there are more emergency admissions).

It should also be noted that the risk to the patient of acquiring infection is known to increase with length of stay[12,13,14,15], and that previously independent elderly persons begin to rely

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[7] Inui TS, Establishing the doctor-patient relationship: science, art, or competence? Dept of Ambulatory care and prevention, Harvard Medical School, Boston, Mass. USA. Schweiz-Med-Wochenschr. 1998 Feb 14; 128(7): 225-230.

[8] Greatrex-TS, Effects of gender on the doctor-patient relationship. MD-Comput. 1997 July-Aug; 14(4): 266-273.

[9] Rosswurm MA, Lanham DM, Discharge planning for elderly patients. Journal Gerontological Nursing. 1998 May; 24(5): 14-21.

[10] Clare J, Hofmeyer A Discharge planning and continuity of care for aged people: indicators of satisfaction and implications for practice. Australian Journal Adv. Nursing. 1998 Sep-Nov. 16(1) : 7-13.

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[15] Hussain M, Oppenheim BA, O'Neill P, Trembath C, Morris J, Horan MA, Prospective survey of the incidence, risk factors and outcome of hospital acquired infections in the elderly. Journal of Hospital Infection. 1996 Feb; 32(2): 117-126.

upon others to shop, prepare meals, or take care of housework tasks, (they lose their confidence in their ability to be self-caring on their return home). It becomes of paramount importance to maintain as much independence for the patient in hospital as possible, and to plan on admission for a discharge as soon as medical intervention is complete, rather than wait until after surgery to begin discussing the individual's ability to care for themselves in the community - with or without support services such as home help (see case study box).

Case Study 1

A patient who is widowed, aged mid eighties, and has arthritis in the hands, spine, hips and knees. She lives alone with no family able to provide assistance, is due to undergo minor foot surgery. Prior to the admission she was finding shopping and housework difficult due to the progressive mobility problems, and yet wanted to maintain independence and had not sought social services assistance. On admission this lady would from the diagnosis, be expected to be an in-patient for two days maximum. Following surgery, this lady realised that she was not able to walk due to a) the pain in the foot, and b) the difficulty in using crutches or walking stick due to arthritic hands. Social services were asked to see the lady to discuss what assistance could be provided. The extra three days wait for the lady to be seen and arrangements put into place, and then transportation home to be organised, resulted in an expected admission of two days turning into an admission of seven days. During this time, the lady would have been at risk from acquiring hospital borne infection, and possible deep vein thrombosis[16] from the reduced mobility within the ward as opposed to the necessity of walking around her home from kitchen to lounge, bathroom and bedroom. Independence is quickly destroyed in the elderly when in a cocooned environment, resulting in lack of confidence on return home with what would have otherwise been every day matters relating to going out of the house, cooking and taking care of household finances.

Case Study 2

A widower due for Total Hip Replacement, living in a semi-detached property, with upstairs bathroom and bedroom, and a downstairs toilet.. Patiently waited for his admission, but had progressively found life difficult due to reduced mobility, and an ulcer on his leg, he was unable to undertake housework or manage the stairs. He had slept in the armchair for several months, and used the downstairs toilet and washbasin to take care of hygiene. He had not wanted to call on social services, wishing to remain in his home and not be placed in residential accommodation. A neighbour had undertaken shopping for him, and he had tried to cater for himself, although a neighbour occasionally took meals in for him. This gentleman was expected to have a maximum stay in hospital of two weeks, in reality, the leg ulcer protracted the stay. He disclosed his home circumstances only when the occupational therapist and physiotherapist went home with him on a visit to check that he could manage the stairs at home. It was noted that the home was in need of considerable attention, and concerns were raised as to whether this gentleman would manage independently, in the environment from which he had come. With persuasion, he agreed to home services, refusing adamantly the suggestion that he went into a home, and he was discharged finally ten weeks after admission, with home help, district nursing and meals on wheels.

Multiply these scenarios for the patients in just four of the beds on any given ward, and the difficulties produced for the admission of subsequent patients becomes self-evident. The resulting delays in treatment and subsequent time spent in hospital for the patient can be

[16] Deep vein thrombosis - a blood clot in a vein, commonly in the calf, occurring as a result of reduced mobility or stasis of blood. Life threatening, as a piece of the thrombosis can break away - embolus - and lodge in the kidney, or heart or lung, causing myocardial infarction, (heart attack), or pulmonary embolus (blood clot in the lung).

avoided if early identification of the patients' holistic[17] needs is made in advance of admission.

This is the traditional admission process, with its uncertainties - and principally the possibility that any given patient can bring into hospital, (assuming they arrive at all[18]) numerous unknown medical, nursing and social concerns, each potentially capable of delaying the surgical intervention and prolonging the length of stay in hospital.

1.2.4 Admission of patients

There is a continual pressure on the resources of NHS Trusts, as well as targets that need to be met with regards waiting lists and treatment times. The National Audit Office 1988 survey[18] which surveyed three major surgical specialities across five district health authorities and four regional health authorities, concluded that 23% of scheduled theatre time was not used; that the duration of the session was significantly different from that planned; that 9.2% of planned admissions either cancelled or 'failed to attend', and that when patients were asked by letter if they wished to remain on the list, 18% were removed.

"Effective admission planning requires a reliable and up to date record of the patients awaiting treatment" and "a clear basis for matching the requirements of patients and the resources likely to be available"[18]. In order, then, to maximise theatre usage, and maintain the waiting list for patients' who require and desire admission, a system to confirm patients' requirements and suitability for surgery is needed. Pre-operative assessment of patients is intended to fill this gap.

1.2.5 Appropriate bed occupancy

In "traditional admission" for elective surgery, management of beds has been a key in the decision making process (that is, the decision as to which and how many patients should be admitted). Any empty bed, available for the admission of a patient - whether elective or acute admission - would be filled in order of priority. Patients for acute admission are first priority. If no patient is waiting in Accident & Emergency for a bed then patients for elective urgent treatment are the second priority. Patients for elective 'soon' or 'routine' admission are the third. Issues associated with this bed prioritisation are manifold - and this is in addition to the many variables associated with the elective admissions process itself.

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[17] Holistic needs - Total patient requirements, surgical, medical, nursing, social, and psychological needs.

[18] HMSO National Audit Office survey, The Use of Operating Theatres in the National Health Service (1988)

1.3 The argument for preoperative assessment

Every person deserves the highest of quality care for their individual condition, be they in need of health care in the hospital or community environment. To provide the optimum healthcare, it is essential that the health providers have an awareness of the individual, thereby allowing specific care to be identified and planned at an early opportunity and implemented for the benefit of the patient and the hospital.

One method of predicting, more accurately, the admission and discharge needs of patients is to assess same prior to admission. This would provide the opportunity to allocate a bed for those patients who need admission - that is, for those who require surgery, and are medically fit for it. As a result, remaining beds could be used for emergency admission and for those patients convalescing from surgery prior to discharge. Ideally, a separate ward (or beds which are allocated for elective admission only), should be available, in order to make possible a guaranteed admission date for those patients due to undergo elective surgery, thereby separating those admitted as emergency from elective admissions. Such an arrangement would also provide an environment of income generating workload (elective surgical cases), as a constant factor rather than ad hoc when placing elective patients on an emergency admitting ward.

The planning of care for any individual should identify not only the main concern (that is, the area requiring treatment), but also the other needs of the patient, such as other medical conditions, nursing difficulties, and social needs. Once identification of all patients' concerns has been made then a plan for treatment can be completed with due consideration of each need. This is referred to in the nursing literature as 'holistic' provision of care. Formulating an holistic view of the patients' needs, and identifying the most appropriate solution to any impediments to a smooth admission episode, can best be undertaken in advance of admission.

"By comprehensively assessing all patients for surgery ..... It is possible to minimise patient risk, ... and greatly reduce the stress factors involved with being admitted."[19] It has long been recognised that assessment of the individual patient in advance of admission may be of benefit not only in identifying the precise medical needs of the patient but also in alleviating the stress associated with admission [1,2,20,21,22,23]. "Stress and anxiety produce

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[19] Bond D, Barton K, Patient assessment before surgery Nursing Standard Vol. 8 : 28 1994 p23-28

[20] Fulford KWM, Ersser S & Hope S, Essential Practice in Patient-Centred Care

physiological and psychological distress which impedes recovery postoperatively"[18]. Advance preparation and explanation of the experiences which can be expected during the admission and stay in hospital will help the patient to understand the surgery which is to be undertaken, as well as the resulting effects during convalescence. Hence, it can be expected to reduce patient anxiety. This will prepare the patient for other aspects of their hospital care, such as the need for early mobilisation, pathology investigations, analgesia provision, and physiotherapy. Discussion of the expected length of stay will assist the patient in planning their discharge with their family and friends, prior to admission. This alleviates the uncertainty and anxiety of being informed post surgery that they are now to be returned home - with a consequent need to make numerous arrangements at very short notice.

Assessment of patients in advance of admission provides the opportunity to plan theatre lists and ward workload, and to interview the patient and undertake appropriate investigations in advance of admission[24] [25] [26] [27] [28,29,30]. Traditionally, patients expected to undergo major surgery were examined exclusively by either the surgeon or the anaesthetic registrar or consultant[31], with medical preparation being their sole concern[32,33]. However, medical

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[31] Klazinga NS, Helsloot R, Quality assurance of pre-operative assessment - a review of quality assurance activities related to pre-operative assessment in nine hospitals in the Netherlands. Quality Assurance in Health Care 1989, 1(1), p 45-53.

[32] Curran J, Chmielewski AT, White JB, Jennings AM. Practice of preoperative assessment by anaesthetists British Medical Journal of Clinical research editorial, 1985 Aug 10, 291(6492) p 391-3.

[33] MacDonald JB, Dutton MJ, Stott DJ, Hamblen DL, Evaluation of pre-admission screening of elderly patients accepted for major joint replacement. Health Bulletin of Edinburgh, 1992 Jan. 50(1) p 56-60.

assessment in isolation may not be sufficient to ensure holistic patient care, and the patients' holistic needs require attention if a well planned, quality admission is to be undertaken. Equally, there may be social and/or nursing concerns which may delay the discharge. It is also worth noting that the non-nursing literature on assessment is somewhat inconsistent on three other questions; (i.) the type of patients who would benefit from such assessment, (ii.) who is best qualified to undertake the assessment and (iii.) which investigations should be undertaken during the assessment. These issues will all be addressed in the present study.

Having identified the failings of the traditional admission process, and ascertained the function of an assessment clinic, it is prudent to now consider the literature available on the pre-operative assessment clinic as well as a number of issues to which it gives rise. These are the historical roles of doctor nurse; the question of doctor nurse collaboration; the concept of nursing autonomy; and the quality of patient care.

CHAPTER TWO

THE LITERATURE SEARCH

For the purposes of this study, it is vital to establish the purpose for a pre-operative assessment clinic, and to relate this purpose to the question of the division of labour between doctor and nurse. This question will therefore be given particular attention, together with the literature specific to assessment clinics.

2.1 NHS quality

Total Quality Management (TQM) one of the key issues facing the NHS in 1991[34]. The complex structure of the health services complicates the usual approaches to creating a total quality environment, making the patient feel valued, utilising resources appropriately, meeting agreed targets[35]. Inappropriate bed usage, difficulty in recruiting medical and nursing staff, and an increase in elderly patients are problems faced by hospital management. Quality standards, delivering consistent, quality healthcare[36,37] , through performance and audit of outcomes is essential for each patient being treated within the health service. Through the audit of practices, poor practice can be identified, and altered to improve the standard of care provided, re-audited, and hence further improved.

In 1992, the White Paper, Promoting Better Health[38], linked working and caring for people, through quality of care, with customer satisfaction. This would involve changing the culture of health through education [39,40,41]; training; GPFH; and health audits to ensure customer

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[39] Chase R The road to recovery Managing Service Quality January 1991

[40] Roy S, The cost of quality Nursing Standard April3 1991, Vol. 5 Number 28 p 44

[41] Delamothe T, The New NHS: the Second Year British Medical Journal Vol. 306 1993 p 1255-1258

needs were met. Formation of NHS Trusts provided an opportunity for consultants to take a lead in planning the new NHS alongside administrative management, allowing consultants to discuss GPFH contracts in an attempt to balance workload of care with income, rather than block purchase of care, resulting in a set income being paid to the care provider irrespective of the number of patients treated.

In 1992, the Health of the Nation[38] sought to secure a continuing improvement in the health of the population by collaboration of the health services with education, recreation and environmental improvements, the purpose being to increase life expectancy, and reduce premature death whenever possible. The Health of the Nation was based on the WHO (World Health Organisation) (1985) Health for All, strategy, targeting five priority areas: coronary heart disease, stroke; cancer; mental illness; HIV & AIDS; accidents. The Health of the Nation programme was to set national standards in the UK, its aim to produce significant improvements in the health of the population. Individuals were to be encouraged to take control over their own health[42]. Food labels were altered to indicate low fat, low sugar, no added salt, and healthy eating leaflets were made available in supermarkets, schools, libraries and centres of health care. Exercise and weight loss were to be encouraged through advertising.

Through Government led proposals and requirements already mentioned, NHS Trusts have been asked to reduce their waiting lists, and reduce the number of patients' whose admission for elective surgery is cancelled. It is stated that as many as 300,000 operations per year in England are subject to cancellations.[43] Monitoring of the operation lists allows for the collation of the cancellations, and the reasons behind each individual case. Could assessment of patients offer a reduction in the number of theatre cancellations?

Use of Operating Theatres in the NHS[44] an audit produced by the Controller Auditor General for the National Audit Office (NAO), set out to examine the use of operating theatres in the NHS. Topics addressed were:-

- The extent to which operating theatre capacity is used

- The effectiveness of admission procedures and theatre planning

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[42] Goode J, Beardsworth A, Haslam C, Keil T, Sherratt E. The nutritional health of the nation: diet, exercise and health, British Journal of Nursing, 1996, Vol.5 no7 p 404-410

[43] Beecham L 1991 Misery of cancelled operations. News and political review. British Medical Journal, 302, 309.

[44] National Audit Office HMSO no 143 16 November 1987

- Is the balance between theatres, beds and staffing appropriate

- The adequacy of management information and control at local level

Elective theatre usage was examined, and the NAO found that almost all planned use of operating theatres involved weekday working only, and that 28% of theatre availability was not staffed and not regularly scheduled for use. Cancelled sessions accounted for 23% of unused time. Taken altogether, the report states that only 50 - 60 % of available theatre time is used.

In looking at the planning of operating list, the NAO found that "to maximise the use of available resources consultants must take account of theatre time and bed requirements of individual patients when selecting them for admission." Consultants do not always have access to up to date waiting lists or detailed estimates of the likely operating time or length of stay for individual patients. The report also noted that there were no mechanisms for predicting bed availability more than a day in advance. There was no effective measure to monitor or limit the incidence and effect of patients cancelling or failing to attend. In 1993 the situation at the NHS Trust was no different to the findings as above.

According to the NAO Audit, "Effective admission planning .....requires: a reliable and up to date record of the patients awaiting treatment." - "a clear basis for matching the requirements of patients and the resources likely to be available." The number of patients cancelled without proceeding to surgery was found to be high in 1985-6, being an mean of 32%, which, without the use of assessment clinics presents a potential wastage on the theatre list of the same amount.

		Min	Mean	Max
General Surgery	%	9.0	32.1	69.1
Orthopaedics	%	10.8	33.2	75.9

Table 2 In-Patients discharged without undergoing surgery

SOURCE: DHSS Performance Indicators 1985-86

The NAO audit of 1987 found that, although no consistent use of pre-admission clinics existed, where such clinics did exist, they were small and run by medical staff. The report states that they appeared to be successful in reducing the number of unnecessary admissions, saving 102 hours in 1985-6 from the orthopaedic admissions at Bath. However, the same audit noted a cost effectiveness study in Yorkshire RHA during 1986 found that the assessment clinics did not demonstrate that significant benefits would be gained from pre-admission screening in the particular circumstances of that Region, but have since commenced screening.

2.2 A review of the literature on pre-operative assessment

Pre-operative assessments are not new, and are known to have been undertaken in the 1940's [45]. The purpose of the assessment should be considered both from patient and hospital perspective.

Hospitals have introduced pre-operative assessments in an effort to maximise efficiency [46,47,48,49,50,51,52,53,54] reduce the number of patients who fail to arrive[55,50,52,53,56,57]; increase theatre utilisation[55,47,51]; and reduce patient cancellation from the operation list[58,55,47,49,59].

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[49] Livingstone J, Harvey M, Kitchin N, Shah N, Wastell C, Role of pre-admission clinics in a general surgical unit: a 6-month audit. Annals of the Royal College of Surgeons of England 1993 75:211-212

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[51] Salzbach R Pre surgical testing improves patient care AORN Journal 1995 Vol.61 210-219

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[54] Gagner M Value of Preoperative physiologic Assessment in outcome of patients undergoing major surgical procedures Surgical Clinics of North America Vol. 71 No. 6 1991 1141-1150

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[56] Thompson P, Reducing failure rates for in-patient oral surgery. The use of a pre-admission clinic British Dental Journal 1991 170:59-60

[57] Dixon L Pre-admission clinic in an ENT unit Nursing Standard Vol. 8 26 1994 p23-26

[58] Lacqua M, Evans J, Cancelled Elective Surgery: An evaluation The American Surgeon 1994 Vol. 60 806-808

[59] Neasham J, Nurse Led Pre-Assessment Clinics British Journal of Theatre Nursing Vol. 6 No 8 1996 p5-6

Identification of patient problems or concerns in advance of admission[60,47,59,49,54,61,62] will allow treatment of identified problems prior to admission[55], thereby increasing patient safety[51,63]; reducing patient post operative complications [55,47,64,65], and reducing morbidity [46,63]. Also noted is that the length of hospital stay can be reduced [55,65] with pre-operative assessment, and day surgery utilised for appropriate patients [46,57].

Many patients need to take time off from work in order to attend for an assessment[55], and for those who are young, fit and for minor surgery[55] it is reported that they consider the assessment to be of little value. The advantages of the assessment as noted in the literature, are that patient information can be acquired pre admission, thereby providing the opportunity for the patient to receive education regarding the forthcoming operative procedure [60,51,66] and its outcomes, and health education for their individual benefit [60,55,48,57,67,68,69,70,65] both verbal and visual information, combined with health leaflets [67,65,71,72] to reinforce information given. Through the discussion of the planned procedure and any other concerns, patient anxiety can be reduced [60,55,67,57,73,74,75]and informed consent [60,55] can be obtained with patient having been informed of the diagnosis, the choice of treatments[55,64,76], and expected outcomes. The interview with the patient as in an assessment, allows for the

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[60] Norman J, Preoperative patient assessment British Medical Bulletin (1988) Vol.42 No 2 p247-268

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[63] Thomas D, Ritchie C, Preoperative assessment of older adults Journal of the American Geriatrics Society 43:811-821,1995

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[66] Webb C What is nursing? British Journal of Nursing 1992, Vol. 1 p567-568

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[68]Robertson L, Quality assurance: the shape of things to come BJN 1992 Vol. 1 3 154-155

[69] Barrass D, The nurse as patient educator BJN 1992 Vol. 1 No 5 241-245

[70] Maidwell A The role of the surgical nurse as a health promoter BJN 1996 Vol. 5 no. 15 p898-904

[71] Reilly H, Nutritional assessment British Journal of Nursing 1996 Vol. 5 no 1 18-24

[72] Abbott D Glenn E, Patient education in a pre-admission clinic Surgical nurse Vol. 7:2 1994 5-8

[73] Graineer L, Evaluating pre-operative care Nursing Times 1995 Vol. 91, 15 p31

[74] Beddows J, Alleviating pre-operative anxiety in patients: a study Nursing Standard 11:37: 35-38

[75] Swindale J The nurse's role in giving pre-operative information to reduce anxiety in patients admitted to hospital for elective minor surgery Journal of Advance Nursing 1989, 14 p899-905

[76] MacAlister L Stuck in a time warp: communication between hospitals and patients. BJN 1994 Vol. 3: 1 p4-5

patient to feel their individual condition(s) are given consideration, that support is provided as required, and thereby that the individual can feel valued [66,77,78,79,80]. Once the patient fitness has been assessed [55,49], a suitable admission date can be provided[55]. Patients' Charter 1991[81] found that a significant number of patients were uninformed or ill-informed about their condition, proposed care and possible alternative forms of care. MacAlister [76] also noted that only 50% urologists and surgeons discussed potential risks and complications of Trans Urethral Resection of Prostate (TURP), a factor which is likely to be linked with increased patient anxiety.

Within the literature on pre-operative assessments, the selection of patients asked to attend such a clinic is often not included; but where it is, it tends to centre on three groups of patients: stated as i.) those over the age of 75yrs., [64,82,83] or the elderly [46,84] (40% of surgical patients are considered to be elderly and of high risk [46,63] of complications/morbidity according to Thomas[63]); ii.) those for day surgery [61,59,52,57,85] including ENT/Oral surgery [50,56,57]; iii.) those for major joint replacement [55,47,73]. With 40% of surgical patients being elderly, it is important to undertake discharge planning [86,87,88,89] as early in the admission process as possible, and by identification of patients social needs prior to admission.[55,36]

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[77] McCormack B How to promote quality of care and preserve patient autonomy BJN 1993 Vol. 2 No 6 p338-341

[78] Travelbee J (1964) What's wrong with sympathy ? American journal of nursing 64: 68-71

[79] Webb C What is nursing? BJN 1992 Vol.1 11 p567-568

[80] Milburn M, Nursing care that patients' value BJN 1995 Vol.4 18 p1094-1098 emphasis on time given to talking and listening.

[81] DoH Patients' Charter 1991

[82] Richards D, Screening the over-75's : 1 British Journal of Nursing 1993, Vol. 2 no 17.

[83] Grainger L A change in practice VFM Update Issue 16 August 1995 p28

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[85] Golub R, Cantu R, Sorrento J, Stein H, Efficacy of Pre admission Testing in Ambulatory Surgical Patients The American Journal of Surgery Vol. 163 1992 565-571

[86] Malby R Discharge planning Surgical Nurse1992 p4-8

[87] Jewell S Elderly patients' participation in discharge decision making: 1 British Journal of Nursing 1996, Vol.5 No.15 914-916

[88] O'Leary A Patient satisfaction as a measure of quality in the care of the elderly British Journal of Nursing 1992, Vol. 1 No.9 p470-472.

[89] Fromm C, Metzler D, Preparing your older patient for surgery Registered Nurse January 1993 p38-42

The majority of assessments are performed by medical personnel [55,47,48,49,72,64], surgeon[60,46,49,52,90]; anaesthetist[46,49,90]; General Practitioner [47], or combination of medical and nurse[55,49,72,57,83,91] with physiotherapy and/or occupational therapy input [55]. In just three articles nurse run clinics were mentioned [55,59,52], and these were without exception for patients due to undergo day surgery, with the recommendation that a nurse running such a clinic be trained and supported as a specialist nurse[72]. On this showing, then, the doctor undertakes assessment of the complex patient due to undergo major surgery, and the nurse assesses the minor, day case surgical patients.

The timing of the assessment was close to the proposed admission, all within 2 weeks [60,46,83,51,85], although one was within 24 hours of admission[91], and two stated that the patients were then admitted the one to three days prior to surgery [55,70] to allow any additional investigations to be completed.

The main reason stated for the assessment, other than those mentioned under patient and hospital factors at the start of this article, were to undertake "investigations" [60,62,55,90,48,54,92]. X-ray and ECG were specifically mentioned in three [55,48,90], the examination of the patient [60,93] including cardio respiratory function [46,61,94]. One study mentioned identification of the patients body mass index[71] in order to assess their nutritional status. The assessing of patients' overall health status should surely be of paramount importance as a main aim of the interview, yet surprisingly, only six articles specified that the aim was to determine patient health [60,63,93,54,36,95] with a third wishing to identify the patient "at risk"[90] presumably from the effects of surgery/anaesthesia. Not included in any of the literature is the opportunity to plan discharge and involve specialist teams such as dietetics, stoma nurse and diabetic nurse, even though the patient' would benefit from early intervention from such advisors.

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[90] Klazinga N, Helsloot R, Quality Assurance of pre-operative assessment - a review of quality assurance activities related to pre-operative assessment in nine hospitals in the Netherlands. Quality Assurance in Health Care Vol. 1 No 1 45-53 1989

[91] Worley B Pre-Admission Testing and Teaching: More satisfaction at less cost Nursing Management Vol.17: 12 1986

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[93] Moore P, Decision making in professional practice British Journal of Nursing 1996 Vol. 5 No 10 p635-640

[94] Koruda M, Sheldon G Surgery in the aged. Advanced Surgery 1991 Vol. 24 293-331

[95] Milburn, M, Baker MJ, Gardner P, Hornsby R, Rogers L Nursing care that patients value British Journal of Nursing 1995 Vol. 4 No.18 p1094-1098

Having established that assessments have been undertaken for many years, and that they have been regarded as fulfilling two main functions, i.) as a means of investigating the patient prior to surgery, largely through X-ray, ECG, cardio respiratory function, nutritional status; ii.) to maximise hospital efficiency - decreasing patient cancellations, increasing theatre usage, and reducing length of stay. The division of labour is clearly shown to be that the medical staff undertake the assessment of selected patients due to undergo major surgery, and that nurses attend to the needs of day case patients only.

2.3 Highest quality patient care

Clinical governance is a government initiative (DoH 1998) - a framework to improve standards of care for patients. That standards of care provision are continuously improved, by "creating an environment in which excellence in clinical care will flourish.[96]" Professional self-regulation; codes of professional conduct; continuous monitoring of professional development; management of unfitness to practice; and standards of specialist practice are to be applied throughout the health service and across all professionals.

The NHS organisations and individuals working within the NHS have a statutory duty to achieve quality improvements, through evidence based practice, clinical audit, risk management, continuing professional development and reflective practice. Accountability in the workplace for achieving these improvements will be with the individual practitioner. The code of professional conduct ensures that responsibilities of each practitioner - doctor or nurse rest with that individual, that each is accountable for his or her own actions. That professional knowledge and competence is maintained, and acknowledgement made of any limitations. The scope of the professional conduct enables the enhancement of practice with additional knowledge and competency, providing such development is in the patients' interests. There is a clear multi-professional agenda, to disseminate the best clinical practice throughout NHS care provider units.

At the outset of this study clinical governance had not been mentioned, the doctor and nurse were working independently. It is prudent to note the traditional doctor-nurse roles, and how change of these roles has been slow to develop. This study will aim to demonstrate that a nurse can enhance patient care by recognising the value of medical and nursing skills and application of same in advance of patient admission. Far from undertaking a medical role, the nurse is developing the nursing care of the individual by patient preparation

[96] UKCC Register 27 Spring 1999

(including provision of multi-disciplinary support team), in advance of the patients' admission.

To demonstrate the difficulties overcome with this study of the previously doctor-nurse divide, let us consider the historic roles, and the development of the nursing role in recent years. The changes introduced through this study are the essence of clinical governance - improved standards of patient care through evidence based practice, audit, risk management, professional development and reflective practice.

2.4 Doctor Nurse - the historic roles

Traditionally doctors have, in the majority, been male graduates with advanced clinical and academic qualifications, their role being considered as that of diagnosis and the prescription of preferred treatment. As recent as 1991[97] only 15% of consultants were female, of whom 0.9% were consultants in general surgery. Nurses have tended to be female, employed in roles which assist the doctor, in monitoring treatment or provision of basic needs. In 1991, only 10% of UK nurses were male, the majority working in mental institutions.

Doctor and nurse work in close proximity,[97,98,99] each professional delivering and committing their expertise to benefit patient care. But worthy of note are the perceived and observed difficulties in doctor-nurse communication, of critical importance when making decisions and discussing changes in a patient's condition. Factors relevant to this communication include accountability, the consultant having primary responsibility for patient care/outcome. "Conflict also arose from the unequal balance of power between nurses and doctors, as nurses struggled to reconcile their subordinate image with the development of professional autonomy[100] " [101, 102]. The traditional image is of doctors taking the lead in decision making, and nurses complying without question, thereby creating medical dominance[97,98,99]. Associated with this image is the higher education of doctors, contrasted with the "vocational" style training of nurses - until recent years when nurse training became

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[97] MacKay,R Matsuno K, Mulligan J. Communication Problems between doctors and nurses Quality Assurance in Health Care, Vol. 3, No 1 p 11-19, 1991.

[98] Porter S. A participant observation study of power relations between nurses and doctors in a general hospital Journal of Advanced Nursing, 1991, 16, 728-735

[99] Sweet S, Norman IJ, The nurse-doctor relationship: a selective literature review Journal of Advanced Nursing, 1995, Vol. 22, 165-170

[100] Heenan A Nurse-physician interaction: status and social structure within two hospital wards. Journal of Advanced Nursing 2, p 278-295.

[101] Heenan A Uneasy partnership Nursing Times 87 (10) 25-27

[102] Wicker P, The doctor-nurse relationship. Nursing Times 86 (4) 53.

college and university based. We can also include: lack of understanding by both groups as to each others role and responsibilities; lack of nurse self-esteem, fostered by dominant medical role; and high nurse turnover [97,98,99]. These factors will now be discussed in detail.

Traditional training methods reflected the unequal balance of power, along with the legal responsibility that the consultant had for the care of his/her patients, therefore influencing power relations. In the USA, 1992[103], doctor-nurse collaboration was considered to be essential for patient management. It was noted that traditionally the physician had not sought collaboration with nurses - unlike nurses who had sought collaboration with doctors [103,105]. The increasing complexity of healthcare would require education and re-evaluation of the doctor-nurse relationship. In order to provide high quality care in the most economical way, the doctor and nurse would need to collaborate in positive ways to accomplish reduced length of stay, with fewer nurses (despite the patients' worsening severity of illness).[104]

Interaction surrounding decision making between doctor and nurse has been classified by Stein as follows[98,105] :-

- Unproblematic subordination - considered to be historic behaviour of nurses
- Informal covert decisions - 1960's - senior nurses in particular
- Informal overt decision - current day
- Formal overt decision - possible with joint acceptance a respect between doctor and nurse for each others role/responsibilities.

Stein[105] in 1967 suggested that nurses learn to show initiative and offer significant advice, particularly to junior doctors, while appearing to defer passively to the doctors authority; that nurses use subtle non-verbal and cryptic clues to communicate recommendations which later appear to be have been initiated by the doctor. In this manner the doctor is able to increase his/her knowledge and the nurse her/his self esteem and satisfaction. But, this communication is neither formal nor overt, a more covert manner of communication having been instilled in nurses throughout their training [105,106,107]. Stein 1967 also noted that some senior nurses used informal overt strategies thereby reducing the power differential [98].

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[103] Fagin C, Collaboration between Nurses and Physicians: No Longer a Choice. Academic Medicine Vol. 67 (5), May 1992

[104] Makadon, H and Gibbons T Nurses and Physicians, Prospects for collaboration. Ann. Intern. Med. 103 (1985): 134-135

[105] Stein L The doctor-nurse game. Arch Gen. Psychiatry 1967: 16:699-703

[106] Savage J Nurses and gender (1987) Open University Press, Milton Keynes

[107] Savage J Nurses, gender and sexuality

Within the same study, it was also noted that formal, overt discussion was infrequently used despite encouragement. However, this was to change.

Stein revisited his doctor nurse theories in 1990[108], and found that there were changes in the medical/nursing roles.

- Nurses were trying to stop the "doctor nurse game[108]", thought to be due to changes in autonomy and nurse status.

- It was also noted that there was a reduction in public esteem for doctors - their fallibility was noted.

- An increase in female doctors and increase in male nurses altered the gender differences, negating the male/female dominance/passivity.

However, Mackay in 1993[97,109] noted that differences in doctor, nurse relationships were maintained, particularly in large teaching hospitals where the working atmosphere was more competitive and formal (often to the detriment of working relationships). Mackay[109] noted that the District General Hospital (DGH) had a more relaxed, informal working atmosphere which encouraged communication.

Stein[108] and [103]Fagin revisited Stein's previous study of the doctor nurse 'game' and defined collaboration as a partnership of inter-dependence requiring the recognition of complementary roles. They emphasised that collaboration would improve patient care, providing satisfaction in the increasingly complex world of healthcare, and that complementary roles must also be recognised.

2.5 Doctor nurse collaboration

In order for this collaborative approach to prevail, each professional is required to consciously change their behaviour[103]; to be forward thinking, and respect each others discipline, knowledge and uniqueness. A common goal (optimum patient care) should be recognised and sought by all health professionals. Accountability should be shared, each professional taking responsibility for their own actions.[99,110] In USA, 1994 [111], Medical

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[108] Stein L, Watts D, Howell T. Sounding Board The Doctor-Nurse game revisited The New England Journal of Medicine Vol. 322 No 8 546-549

[109] Mackay L Conflicts in Care Medicine and Nursing 1993 Chapman & Hall, London

[110] Makaram S Inter professional co-operation Medical Education 1995, 29 Supplement 1, 65-69

Director "The complexity of health care today warrants these two key participants (medicine and nursing) to join together in planning and delivery and to combine their expertise. No one discipline can go it alone today."[112] When inter-professional partnership has been achieved, it becomes the basis for providing patient-centred care, ensuring that each professional gives complementary care, supporting an overall objective.

Perhaps one of the most pertinent of these factors relevant to this study is the new deal for junior doctors. In the UK, [113], the NHS Reforms and the internal market (Secretary of State, Working for Patients London HMSO 1989) have had an effect the profile and pattern of NHS employment. Hospital activity has increased; numbers of nurses have been reduced; junior doctors' hours have been reduced; managerial and administration staff have been increased. In addition there has been a drive to obtain greater value for money, make better use of resources by reducing the length of stay, and to reduce the waiting list for surgery.

In "The New Deal", DoH 1989 excessive working hours by junior doctors were noted as being unacceptable. "Junior doctors have long maintained that long hours not only influence their own health and morale but also that they are damaging to patients." [115]Reports and verdicts at coroners' inquests supported the view that stress, together with sleep deprivation is a factor in unnecessary morbidity and mortality. [3,114] A ministerial working party (which included junior doctors, consultants, representatives from colleges, NHS management and the then Minister of Health, Virginia Bottomley), met in 1989 and decided that junior doctors would reduce to 83 hours max. per week as of 1.4.1993, and further reduce to 72 hours max. as of 31.12.96[115,116].

Reduction in junior doctors hours would impact on the medical staff. Consultants "faced a huge burden on themselves[115, 116] " and realised there "should be greater flexibility in consultant working practices.[116]" The potential for training of junior doctors would be reduced due to their working fewer hours. Additional support would be required if junior

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[111] Swan B, A Collaborative Ambulatory Preoperative Evaluation Model. AORN Journal February 1994, Vol. 59 No 2 430-437.

[112] Steel, Issues in Collaborative Practice AORN Journal February 1944, Vol. 59164-172

[113] Buchan J, Hancock C, Rafferty AM, Health Sector Reform and Trends in the United Kingdom Hospital Workforce Medical Care Vol. 35, Number 10 p OS143-OS150. 1997

[114] Hunter S Junior Doctors: Commitment vital for new deal British Medical Journal Vol. 303 840-1 1991

[115] Poulton E Hunt G Edwards R The performance of junior hospital doctors following reduced sleep and long hours of work. Ergonomics 1978:21:279-95

[41] Department Of Health Heads of agreement. Managerial group on junior doctors hours Department Of Health London: 1990, Welsh Office, Department of Health & Social Services (Northern Ireland), Scottish Home and Health Department

doctors hours were to be reduced without impacting detrimentally on patient care. There was no prospect of resources being provided centrally. Therefore individual hospitals needed to assess the priority of the reduction of junior doctors hours along side other needs[115,116].

Nationally, NHS Trusts were being formed, these were required to be financially independent and viable. Within the North West Thames region in 1992 50% of NHS hospitals were self governing NHS Trusts, each hospital being required to comply with government led initiatives, the Patients Charter, waiting list initiatives, league tables, GPFH and the internal market.[117]

Additionally, in 1993, a study on the night time work of junior doctors was undertaken[118], which suggested that one third of general surgery and orthopaedic operations could be postponed to daytime; up to one third of junior doctors tasks could be undertaken by nursing or other staff (for example ward clerks filing investigation results); many laboratory requests could be postponed until the following morning. Further, in 1996, a study[119] of house officers; obtaining consent for operation and anaesthesia showed that some senior house officers were obtaining consent without the awareness of legal implications for the patient or themselves, the complications of the procedure, or even an awareness of the procedure.

Between 1992 and 1993, a variety of methods were introduced to support the reduction of junior doctors' hours: overtime payments introduced under Government directive[120] ; study leave allowance reduced from 30 days to 10 days per annum[3]; shift systems of duty for junior doctors[2]; phlebotomy services introduced and/or extended[3]; more ward clerks employed[3] ; staff grade doctors introduced in 1993[9]; the post graduate deans required increase in the supervision of junior doctors to improve training[9]. All of this was likely to have significant impact on the division of labour in health care, with nurses being required to an increasing range of 'medical' roles. However, this has not happened in a consistent manner. During the early 1990's, nurses who had undertaken tasks previously thought of as medical - such as the giving of intra venous antibiotics - found that local policies caused

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[117] Godlee F Juniors' hours: is the end in sight? BMJ, Vol. 305 17 October 1992 p 937-940

[118] McKee M, Black N Junior doctors' work at night: what is done and how much is appropriate. Journal of Public Health Medicine Vol. 15, No1, p 16-24.

[119] Richardson N, Jones P, Thomas M, Should house officers obtain consent for operation and anaesthesia? Health Trends Vol. 28, No2, p 56-59 1996.

[45] Dowie R, The New Deal - can we do it? British Journal of Hospital Medicine 1993, Vol. 49, No.9, p 608-609.

frustration. For example a nurse might be able to administer drugs at one hospital would not be able to do so at another hospital without local training[7].

But as inter professional roles change, the question of responsibility becomes an issue[121]. Chiarella states that unless a private contractual agreement has been reached between a patient and an individual practitioner, and providing no wrong has been committed in terms of professional employment, the hospital will be vicariously liable for the civil wrongs. The nurse has individual responsibility for her own actions within the UKCC code for conduct and is subject to work within the criminal law.

An environment of change was created within NHS Trusts with the need for financial viability; government led changes in the NHS; patients charter; creation of the GPFH and internal market; waiting list initiatives; league tables. In addition, changes were being enforced regarding junior doctors working hours "The new deal" DoH 1989[122], and nurses were seen as being competent in developing their roles, by their governing body United Kingdom Central Council for nurses and midwives (UKCC) as well as by medical staff.

In 1994, the possibility of nurses' undertaking hitherto medical tasks was again considered, and [123,124]found that 35% of doctors tasks could be undertaken by nurses. However, it was noted that tasks being completed by a nurse might take longer to perform, or achieve similar output, but with less accuracy. A case was made for reliable, valid data to support the expense of training nurses to undertake these roles, and substituting nursing tasks on the ward. Moreover, nurses "should not be looking to de-skill doctors, but to work with them in developing a more shared and effective partnership for the good for the patient.[125]" [126] With these changes of emphasis, and a significant shift in the respective roles of doctor and nurse being imminent, there was at least an opportunity for the introduction of an innovative nursing role. This role should complement the work of doctors, not replace it. The nurse should advance individual patient care providing the highest possible standards of nursing care, based in multi-disciplinary research. "Nursing care firmly based in nursing research

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[121] Chiarella E M, Nurses' liability in doctor-nurse relationships Contemporary Nurse (1993) 2, 6-10 1993

[122] DOH Junior Doctors. The New Deal 1989

[123] Wilkinson C, Wilkinson J What are the implications of doctor-nurse substitution?, British Journal of Nursing, 1995, Vol. 4, No 15, p 855

[124] Whiteley MS, Wilmott K, Galland RC, A specialist nurse can replace pre-registration house officers in the surgical pre-admission clinic. Annals of Royal College of Surgeons England (Supple) 1997, 79:257-260

[125] Castledine G, Nurses must not become the mechanical hands of doctors British Journal of Nursing, 1996, Vol. 5, No 6, p 386.

[126] MacAlister L I Can doctors' work really be expert nursing? British Journal of Nursing 1999, Vol 8. No.12

has been shown to produce considerably better outcomes for patients,[127] and must be the foundation of what is purported to be expert practice.[126]"

In 1992, the (UKCC), directed that each nurse could decide whether he or she was competent to undertake a new task to "improve services to patient.[128]" These tasks or extended role, would still be under the control of the Director of Nursing within each hospital, but would in essence provide the opportunity for a patient centred approach to shared care, rather than one of "confrontation" between doctor and nurse, thereby opening the way for medical and nursing staff to work on a more equal basis. In 1995, the Trent region task force funded £500,000 for innovative nursing posts.[129] This was primarily to help reduce the workload of doctors. Extension of a nurses' role being defined in 1996 by Hopkins[130] as medical tasks undertaken by nurses, and that expansion of nurses' role as encompassing education, nursing skill and clinical decision making.

In summary, then, Stein et. al.[108] noted in the early 1990's, the nursing and medical division of labour between the nursing and medical professions was beginning to create a blending of health care roles: the "new deal has given nurses legitimate opportunity to develop their practice and to improve patient care while reducing the juniors doctor hours"[131]. But there was still a question about whether nurses who wanted to develop their roles were they suitably trained or qualified.

2.6 Nursing with autonomy

Nursing is the process of determining the clients' problems, making plans to solve them, initiating the plan (or assigning others to implement it), and evaluating the extent to which the plan was effective in resolving the problems identified [93,132]. "Nurses must keep the self-identity of the "whole" person in mind and must strive to understand simultaneously the relationship of the "part" of the individual under concern to the totality of that individual's interactions and the relationship of the whole to its parts[133]." As nurses

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[127] Heater BS, Becker AM, Olson RK 1988 Nursing interventions and patient outcomes. A meta-analysis of studies. Nursing Researcher 37:303-307

[128] UKCC The Scope of Professional Practice, London, UKCC, 1992

[129] Read S, Graves K. Reduction of Junior Doctors' Hours in Trent Region: The Nursing Contribution. Sheffield Centre for Health and Related Research, NHS Executive, Trent. 1994

[130] Hopkins S, Junior doctors' hours and the expanding role of the nurse. Nursing Times April 3, 1996, Vol. 92, No 14, p 35-36.

[131] Pickersgill F A 'New Deal' for nurses too?, Nursing Standard, May 19 1993, Vol. 7 No. 35 p 21-22.

[132] Henderson V 1982 The nursing process: is the title right? Journal Advanced Nursing 16:103-9

[133] Kreiger D (1981) Foundations for holistic health nursing practices: the renaissance nurse.

extend their duties to include tasks which would hitherto have been considered medical, so changes to the statutory framework became necessary. But, as nursing tasks/duties changed, there came with it the desire to change the nurses' title. Many titles have been suggested, and as yet none fully recognised, as will be discussed.

The public are increasingly aware of possible treatments and their expectation of outcome. People are no longer prepared to accept it when the outcome does not meet the expectation[134]. With autonomous practice, the legal implication of such work must be considered. Written communication is required to be unambiguous and accessible for all health workers to review. The role of the nurse should be developed for the good of the patient and not put the patient at risk. In order to achieve this the nurse must develop her/his knowledge and skills, acknowledge limitations, and take steps to further her knowledge, thereby protecting the patient from harm and recognising personal accountability[135,136,137,138,126].

The (UKCC) provide codes and standards, to ensure that nurses, midwives or health visitors understands his/her responsibilities. The code[139,140] establishes the extent of accountability of registered nurses', and assists them in the exercise of professional accountability so as to achieve high standards of professional practice. The nurse working above the level of basic registration (due to experience and/or additional training), should be easily identified, however there is considerable debate as to how a nurse undertaking this sort of work should be described. Several possible titles have been suggested and are in use throughout the country.

2.6.1 Extended role of the nurse

In GP practices since April 1977[141,142,143] many nurses have been employed to run treatment room tasks/clinics such as ear syringing, injections, dressings, cervical screening and

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134 Tingle J, Legal implications of standard setting in nursing British Journal of Nursing, 1992, Vol. 1 No.14 p728-731

135 Castledine G, Nurses should welcome a wider scope of practice British Journal of Nursing, 1993 Vol. 2 No 13, p 686-687.

136 UKCC (1992a) The Scope of Professional Practice. UKCC, London

137 UKCC (1992b) Code of Professional Conduct for the Nurse, Midwife and Health Visitor, UKCC, London

138 UKCC (1993) The Council's Proposed Standards for Post-Registration Education. UKCC, London

139 UKCC, 1992 Code of Professional Conduct

140 UKCC, 1992 The Scope of Professional practice

141 Bowling A Delegation in General Practice (1977), Tavistock publications, London

suturing. Tettersell [145] notes that these nurses enjoy "greater egalitarian relationship with medical colleagues", which they considered is closely linked to power and autonomy of practice.

In 1989 the Department of Health and Social Security[144] issued guidelines for health authorities with regard the extended role of the nurse. The guide recognised that nurses were performing tasks previously considered medical and sought to clarify the legal implications of such changes; that a nurse can perform a doctor's duties with appropriate training and competence (see also Tettersell[145]).

However, the nurse in this study is undertaking more than an extension of role, working under medical instruction. Rather, she is initiating action, working autonomously, in a role where an emphasis must be placed on the nurse extending her knowledge-base and undergoing specific training to develop skills which will allow her to exercise clinical judgement[146] through education and research, working across professional and organisational boundaries. Professional competence then, reflects informed decision making. The professional nurse, reaching clinical decisions is required to challenge their reasoning behind the chosen action(s) rather than act solely under instructions [145,147] developing her own professional standing and providing enhanced patient care, in essence, working as an experienced nurse, respecting medical and other multi-disciplinary team members and ensuring that the patient is given appropriate support prior to and during admission.

2.6.2 Nurse practitioner

No clear definition of the Nurse Practitioner has been made by the UKCC. Indeed [138,148] in 1993 the UKCC stated that the nurse who works with greater knowledge and responsibility than that of the first degree nurse should be called another title other than that of Nurse Practitioner, because all nurses are practitioners.

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[142] HMSO General Practice in the National Health Service The New Contract. HMSO, London Department of Health 1990

[143] Walton J & McLachlan G Communication between Doctors and Nurses in eds. (1986) Partnership and Prejudice. Nuffield Provincial hospitals Trust, London

[144] DHSS (1989) The Extending Role of the Nurse, PL/CNO (89) 10, Health Publications unit Heywood Lancs.

[145] Tettersell M, Autonomous practice Nursing, December 5, 1991 vol. 4 no 47 p 11-13

[146] Sheperd J, Analysis of training needs of qualified nurse practitioners British Journal of nursing 1992, Vol. 1 no 6

[147] O'Reilly D Towards autonomy of the nursing profession (1982) Nursing 5 (3) Sept 18-22

[148] UKCC (1993) Final Draft Report on the Future of Professional Education and Practice. UKCC, London

In March 1996, the RCN (Royal College of Nursing) Council took the view that a Nurse Practitioner was a nurse who had "undertaken a specific course of at least first degree level" and, who "makes professionally autonomous decisions for which they have sole responsibility[149]"; who "receives patients with undifferentiated, undiagnosed problems[149]", which are then assessed; who "develops a plan of patient care[149]" including health promotion; and "has the authority to admit or discharge patients from her/his own case load and refer to other health care professionals as appropriate[149]." The majority of Nurse Practitioners were working in primary care settings such as GP surgeries until 1997, [150] but Nurse Practitioners in the secondary care settings - hospitals - have proved most effective in running Minor Injury Units.

2.6.3 Specialist Nurse

The Specialist Nurse title became popular in the UK in the early 1980's most commonly attributed to diabetic and stoma care nurses [151,152]. In October 1998, the UKCC [153,154,155] issued a statement that the council aims to clarify the level of practice associated with Specialist Nurse; and to devise a mechanism to assess and regulate such practice. Until this statement the UKCC does not define or control the use of any of the titles - Nurse Practitioner, Clinical Nurse Specialist, and Advanced Practitioner [156]. Moreover, the UKCC[156] stated that necessary skills and knowledge may be obtained through a university degree, but only those degrees recordable by the National Board (therefore most university degrees could not count towards the use of specialist practitioner title).

2.6.4 Advanced nursing practice

The concept of advanced nursing practice is under considerable debate by professional nursing bodies and academics, with advanced practice being described as "...adjusting boundaries for the development of future practice, pioneering and developing new roles

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[149] RCN Nurse practitioners Your questions answered Royal College of Nursing May 1997

[150] Kendall S, Latter S, Rycroft-Malone J . Nursing's hand in the new deal Nurse Practitioners and secondary health care in North Thames Buckinghamshire College1997

[151] Elliott PA, The development of advanced nursing practice : 1 British Journal of Nursing 1995, Vol. 4 No.11

[152] Elliott PA, The development of advanced nursing practice : 2 British Journal of Nursing 1995, Vol.4 No.12

[153] Murray C, The need to clarify levels of specialist practice British Journal of Nursing 1998, Vol. 7, No 11 p 630

[154] UKCC (1998a) Report of the Higher Level of Practice (Specialist Practice Project - Phase II.UKCC) London

[155] UKCC (1998b) Registrar's letter 11/1998 Standards for specialist practice. UKCC, London

[156] UKCC Registrar's letter 15/1996 Specialist practitioner title/specialist qualification

responsive to changing needs and, with advancing clinical practice, research and education to enrich professional practice as a whole[157]". The Post Registration Education and Practice Project (PREPP) in 1995 and (UKCC) in 1990 and 1996 stated the desire to recognise endeavours to improve the professional standards and of personal education and expertise of nurses. PREPP suggested that there should be recognised levels of specialist practice, which "embrace nurse practitioners and clinical nurse specialists."[158] [159]

Although the role is relatively new in Britain (20 years), the concept is well known in America in the role of Clinical Nurse Specialist[160]. The use of the Clinical Nurse Specialist developed in the USA in the 1930s and 1940s. Within the UK, according to Kim Manley "The clinical nurse specialist" Surgical Nurse 1993, the title first became popular in the early 1980s. The nature of specialist practice is similar to that of an advanced nurse, and is defined as a type of specialised clinical role which calls on the nurse to "....exercise higher levels of judgement and discretion in clinical care... demonstrate higher levels of clinical decision making and...to monitor and improve standards of care through supervision of practice, clinical nursing audit, developing and leading practice, contributing to research, teaching and supporting professional colleagues[161]." The role of the Advanced Nurse Practitioner and that of Clinical Nurse Specialist, whilst each may have differing experiences and roles, should each practice in autonomy; be experienced and knowledgeable; be a researcher and evaluator of care; an expert in health and nursing assessment; expert in case management; consultant, educator and leader; and be respected and recognised by others in the profession[162]. However, there is lack of clarity around the titles and roles of Nurse Practitioners and Clinical Nurse Specialists, their training and the need for recognition to clinical practice and expertise.[163]

The UKCC have produced guidelines as to the qualifications and practice of a specialist practitioner title, as a nurse who has a post-registration clinical, recordable qualification

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[157] UKCC, 1994 The Future of Professional Practice - the Council's Standards for Education and Practice Following Registration.

[158] UKCC Register 19 Spring 1997

[159] UKCC 1996 Transitional arrangements - Specialist Practitioner Title/Specialist Qualification

[160] Elliott P A The development of advanced nursing practice:1 British Journal nursing 1995, Vol. 4, No.11 p.633-636

[161] UKCC 1994 The Future of Professional Practice - Standards for Education and Practice Following Registration UKCC, London

[162] Castledine 1996 The role and criteria of an advanced nurse practitioner British Journal of Nursing Vol. 2 No. 1 p288

[163] UKCC Register 22 Winter 1997

relevant to the area of practice (where the nurse and employer are confident that the nurse has the skills and knowledge to practice safely and effectively as defined within the UKCC Code of Professional Conduct and Scope of Professional Practice)[128]. The requirements are that the specialist practitioner should be able to: identify and initiate steps for effective care for individuals or groups; set, implement standards and criteria for nursing intervention; assess and manage critical and clinical events; support patient and families; provide counselling and psychological support for individuals and their carers; act independently within multi-disciplinary team; assure safe and holistic research-based care; recognise ethical and legal issues and take action; lead and clinically direct the professional team.

2.6.5 Higher Level of practice - or expert nurse

The nurse who, through additional training and experience is able to work in autonomy, with acceptance from the medical profession can be given any of the above titles by the NHS Trust within which she/he works. It is anticipated that the RCN and UKCC will create a single title and remove all ambiguity when it creates the Higher Level of Nurse in 2001.

As of October 1998, the UKCC [154,155], have sought to recognise the nurse working at a higher level of practice, and have issued a consultation document[164] which aims to identify a framework to recognise and regulate the clinical nurses within the United Kingdom. Once the consultation is completed it is intended that arrangements for recognising the higher level of practice will be introduced by the year 2001. That the nurse working at a higher level can provide effective health care - improving patient quality outcomes (as in reduced length of stay, fewer cancellations from operation), participating in "various decisions about diagnosis, inter-professional care, therapy and treatment.[165]" Castledine continues with an additional five areas in which the expert nurse should be competent, evaluation and research; leading and developing practice - that the nurse should be recognised and respected by her colleagues and other multi-disciplinary professionals; innovative practice - a change agent and developer of patient care; develop self and others - seek and give clinical supervision, disseminate information; and work across professional boundaries - developing and improving their own profession, be flexible and skilled enough to develop new links with other health care professionals.[166,167]

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[164] UKCC A higher level of practice Consultation document UKCC, London October 1998

[165] Castledine G, The qualities needed to become an expert nurse. British Journal of Nursing 1999, Vol. 8, No 9, 626.

[166] UKCC (1999a) Draft Descriptor and Standard for Higher Level Practice. UKCC, London.

2.7 Summary

Assessment of patients in advance of admission provides the opportunity to identify the needs of individual patients' and to provide appropriate treatment/care in advance of surgical intervention. The literature to date suggests that medical personnel see those patients due for major surgery, yet the medical personnel will confine their examination and interview to surgical/medical needs only. The nurse assessor will interview the patient (often alongside the medical personnel) to discern nursing and social needs, or else interviews patients alone, if they are due for day case surgery. Literature also suggests that the time for doctor collaboration with nurse has arrived, particularly for the senior nurse, and that the days have past of the nurse purely responding to direct instructions from the doctor with no input as a professional.

Nursing staff are taking on clinics in hospitals and general practices, with patients' attending the nurse for less serious matters or maintenance of chronic conditions[168], and to provide appropriate knowledge and health education[168], such as hypertension, asthma management and cardiac rehabilitation, providing the general practitioner with more time to spend on complex queries. The number of posts in which nurses undertake work which would previously have been that of a doctor is growing[169], but with it comes the potential confusion of accountability and responsibility in both the scope of the roles and standards of care delivered[170]. The nurse is encouraged to be a health educator and promoter[171], and to promote health rather than see the patient only to treat disease and illness[172], the aim being to promote the well-being of the patient and a health lifestyle in order to reduce the incidence of illness. The nurse also has the role of advocacy, so allowing the patient to reach their own decision with regards their to treatment, based upon the choice of treatments available and the possible consequences.

In all of the above papers it was generally agreed that assessment had a part to play in the admission of patients for surgery, either in reducing the cancellation of patients on the day

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[167] UKCC (1999b) A Higher Level of Practice Report of the Consultation on the UKCC's proposals for a Revised Regulating Framework for Post-registration Clinical Practice, UKCC, London

[168] Barrass D., The nurse as patient educator. British journal of Nursing 1992, Vol. 1., No. 5 p241-245.

[169] Dowling S, Martin R, Skidmore P, Doyal L, Cameron A, Lloyd S. Nurses taking on junior doctors' work: a confusion of accountability. British Medical Journal Vol. 312, 11 May 1996, p 1211 - 1214.

[170] Dowling S, Barrett S, West R With nurse practitioners, who needs house officers?, British Medical Journal, 1995 Vol. 311 p 309-313.

[171] Maidwell A, The role of the surgical nurse as a health promoter British Journal of Nursing 1996, Vol. 5, No 15, p898 - 904.

[172] The Health of the Nation (DoH) 1992

of surgery, or in identification of those patients unfit for surgery in advance of admission and in reduction of anxiety.

Comment is made in the journal articles on: (i.) who should assess patients - a medical person, either surgeon or anaesthetist or general practitioner who undertakes the assessment[173]; (ii.) which if any investigations are or should be undertaken[174] in order to determine the patients' fitness for surgery/anaesthesia. It is suggested (iii.) that the assessment should determine the extent of relevant surgical pathology and any disease which may affect the operation, and investigations should be undertaken only to confirm and "assess the extent of concomitant disease and only exceptionally, where their costs can justify their benefits."[175] It is also noted that "pre-admission screening should result in more efficient use of scarce hospital resources and improved patient care."[176] In all respects, the use of assessing patients prior to major and minor surgery is shown to be of value to hospital and patient alike. But the question remains - Is a nurse able to undertake the sole assessment of patients due for elective major surgery? As already mentioned, nurses "should not be looking to de-skill doctors, but to work with them in developing a more shared and effective partnership for the good for the patient.[126]" The nurse should, through early pre-operative assessment, ensure enhanced individual patient care through the early identification of and planned intervention for individual patient needs.

This study aims to explore the possibility of a nurse (with advanced nursing practice), undertaking the assessment of patients due for elective surgery, alongside that of a doctor undertaking the same task - the outcome measures of this are many, but this study will focus on the patient cancellations following assessment by doctor or nurse, compared to admission with assessment, and the length of stay per procedure for patients similarly assessed. The study will also attempt to provide answers to the many questions raised in this chapter, including the impact on doctors, and in particular their workload; the impact on patient care; the potential disadvantage of a nurse who, while undertaking a previously medical role, may or may not require additional training[177] - the implications of this for nurse education and

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[173] Klazinga NS, Helsloot R, Quality assurance of pre-operative assessment - a review of quality assurance activities related to pre-operative assessment in nine hospitals in the Netherlands. Quality Assurance in Health Care, Vol. 1 No 1 p 45 - 53. 1989.

[174] Golub R Cantu R, Sorrento JJ, Stein HD. Efficacy of Pre admission Testing in Ambulatory Surgical Patients The American Journal of Surgery Vol. 163, June 1992, p 565 - 571.

[175] Norman J Preoperative patient assessment British Medical Bulletin (1988) Vol. 42., No.2, pp 247-268.

[176] MacDonald JB, Dutton MJ, Stott DJ, Hamblen DL, Evaluation of Pre-Admission Screening of Elderly Patients Accepted for Major Joint Replacement. Health Bulletin 50/1 January 1992. P 54 - 60.

[177] Kendall S, Latter S, Rycroft-Malone J . Nursing's hand in the new deal Nurse Practitioners and secondary health care in North Thames Buckinghamshire College1997..

professionalism; the audit of such collaboration; and the hospital management structure with particular reference to the health purchasers and the provision of healthcare. These factors will be considered throughout this study.

CHAPTER THREE

THE AMALGAMATION OF TWO DISTRICT GENERAL HOSPITALS

This chapter describes the background to the study, and the trust in which the clinic being investigated is situated. It will describe the demographic area in which the NHS Trust is located; the amalgamation of two constituent hospitals; its various income sources; and the re-engineering process involved in creating an Elective Surgical Unit.

3.1 District served

In 1990 North West Hertfordshire District was one of thirteen health districts, within the then North West Thames Regional Health Authority (Figure 1). The authority served a mainly rural area covering approximately 140 square miles, including one city and one large town eight miles apart, plus the three smaller towns. In 1993 there was a mental illness hospital, three large units for persons of all ages with learning difficulties, and two smaller GP run units/ rehabilitation centre providing continuing care[178] and outpatient services. The district's general acute hospitals had a shared Unit General Manager in charge, who was later appointed Chief Executive.

[178] Continuing care - long term nursing care and for those needing rehabilitation.

Figure 1 To show the District General Hospitals in the North West Thames Region 1993

3.2 Population

In 1985, the population of the District was 261,577, with an increase in ten years, to 264,093. Table 3 shows the population by age band in 1985, 1995, showing a major growth in the proportion under 15 or over 65. This age changes especially the growth in the numbers of elderly persons have implications for the mix and scale of services needed regarding health care in the locally since age, there is an increase in the need for healthcare.

Table 3 Resident populations by age group and sex 1985 and 1995

SEX	*AGE GROUP*	*YEAR 1985*	*YEAR 1995*	*OVERALL CHANGE %*
MALE	0 - 4	8,340	8,916	
	5 - 9	8,208	8,681	
	10 - 19	19,517	16,562	
	20 - 34	29,378	29,345	
	35 - 49	26,844	29,682	
	50 - 69	27,304	26,580	
	70+	8,690	10,545	
				MALE AND FEMALE
FEMALE	0 - 4	7,988	8,616	**+7.4%**
	5 - 9	8,165	8,138	**+2.7%**
	10 -19	19,292	15,728	**-16.8%**
	20 - 34	28,112	28,154	**0.0%**
	35 - 49	26,755	29,531	**+10.5%**
	50 - 69	28,009	27,104	**- 2.9%**
	70 +	14,975	16,511	**+14.3%**
TOTAL		261,577	264,093	**+1.0%**

[179]

[179] Source: OPCS Population Estimates for St. Albans & Hemel "Catchment" (1985 and 1995)

3.4 Amalgamation of two hospitals

In 1990 the health authority projected that the two district general hospitals would have growing problems in providing quality care, accreditation for training, recruitment and finance. "... it will become increasingly difficult to maintain high quality services in both hospitals.[180]"

Since the 1970's, several attempts had been made to amalgamate the two hospitals onto a "green field", at a mutual site. Each project was opposed by the local authorities, and did not proceed. In 1990, when consideration was again being given to amalgamation of care, the option of building a new hospital on a green field site was re-considered. However it was agreed that the cost of building a new hospital would be prohibitive, and that making the best use of the premises available would be the most cost effective and productive option, since both sites had room for expansion. In addition the one hospital had a private patients wing, and a more recent building; which was no longer required for use as an acute psychiatric unit. One site was chosen as the preferred option for the acute[181] services, and the other site for development for use by elective patients. The result was that Intensive Care, Medical, Acute Surgical, and Elderly care wards, together with Coronary Care and Accident & Emergency would be based at the acute site, while the other was adapted to provide a nurse run Minor Injuries Unit, Elderly Care wards and an Elective[182] Surgical Unit. Both sites would continue to have outpatient facilities. In addition, minor day surgery cases could be undertaken at a GP run unit.

A strategy for the amalgamation of the two hospitals was proposed, and sent for public consultation from May to July 1990, and then a working paper was sent to the Secretary of State for deliberation. After two years discussion with the Secretary of State and the Health Authority, the changes were approved.

The Chief Executive of the General Hospital merged two District General Hospitals to form an NHS Trust in April 1993. As part of the process, acute services were being moved to be on one hospital site (the local population were very concerned to see the Intensive Care unit, Coronary Care unit and Accident & Emergency departments be available only at the acute site). The second site would become one for elective surgery and have a Minor Injuries unit. Due to the profound disquiet of the local population near the elective unit, the chief

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[180] Short Term Programme 1990/91. North West Hertfordshire Health Authority

[181] Acute services - provision of care of an acute or emergency nature available 24 hours a day. The care of those requiring intensive medical/surgical/anaesthetic intervention.

[182] Elective - planned waiting list admission.

executive wished to capitalise on the opportunity of the elective surgical unit, to offer the local population something which was not previously possible, namely a guaranteed bed on the planned day of admission for elective surgery. That is, no patient would be cancelled on the day of surgery due to lack of a bed.

Besides the health purchasing restrictions placed upon the hospital, it was noted by hospital management in April 1993 that "quality and numbers of staff are the major determinants of providing high quality patient care." The recruitment and retention of staff would therefore be of critical importance.[183] As has already been mentioned, the number of persons entering medical and nurse training has reduced nationally; the Royal Colleges stipulate certain conditions be provided to allow for training recognition.

Staff from both sites would be asked to work under new conditions, and to be available to work anywhere within the Trust. This was one of many difficulties faced by the hospital staff during 1992, 1993, 1994. Wards closed, the working structure of the St. Albans City Hospital site changed dramatically and reduced in size - as much as that of Hemel Hempstead General Hospital grew. An environment of unease amongst staff was generated by all the changes and further change was viewed with scepticism.

3.3 Health purchasers

Within the district area of North West Hertfordshire, there were seven General Practitioner Fund Holding practices (GPFH's) in 1992, representing 9% of the hospitals' income, with a further two practices due to become fund holders in 1993. The remaining income for the hospital was from the District Health Authority, and represented 83% of the total income. In 1992 the management of the hospitals projected that the GPFH income would increase by 5% for 1993/4, with the proportion of money's from the district authorities remaining constant.

In 1993, the GPFH's accounted for 10.6% of the Trust's income, which represented 36.6% of the elective surgery undertaken at both hospitals (see Figure 2 To Show the Sources of Income Received for 1993/4)[184]. By 1994/95, the number of fund holders would purchase 74.8% of the elective surgery. The increase in GPFH purchasers had an impact upon the decisions which could be undertaken by the hospitals as to which patients could be treated

[183] Consultation Document "The Future of Acute Hospital Services April 1990."

[184] *Progress Report 1993 North West Hertfordshire General Hospitals Unit..*

and when. The GPFH's were required to manage their own finances and would purchase care for patients with the hospital within agreed contracts.

FIGURE 2 TO SHOW THE SOURCES OF INCOME RECEIVED FOR 1993/4

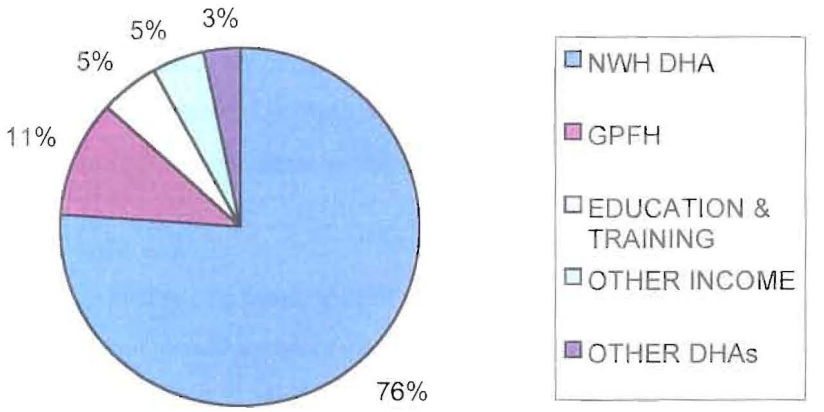

Figure 2 To Show the Sources of Income Received for 1993/4

In 1993, 1994 and early 1995 the hospital was able to control the waiting list and call patients in for in-patient treatment with minimum restriction from the GPFH. During the financial years 1996 and 1997, some GPFH's found that their commitment to purchase hospital care would require careful management, and as a result in 1996 and 1997 requests from many GPFH practices were received by the hospitals to reduce the number of patients being treated, despite the patient having been referred to the hospital by the GPFH for treatment. That is, instructions were given from certain GPFH to not treat certain patients until the GPFH finances were available, to pay for their care. As a result the shortened waiting lists for admission achieved during 1994, 1995 and early 1996 would lengthen, risking penalties from government if the waiting list extended beyond that stipulated by the Patients' Charter - eighteen months (due to be fifteen months by April 2000). Careful management of these conditions imposed upon the hospital would be required if quality and appropriate care was to be given to each individual patient at the appropriate time.

3.4 Elective surgical unit

It was important to capture the creation of the elective surgical unit and make a viable working environment, one which could provide patient care independently from specialist hospital support such as intensive care, and one which the local population would accept as providing a provision of care which had hitherto been unavailable - namely an elective surgical admission unit, with planned admission facility. With consideration of the national and local changes, in particular that no patient admission be cancelled due to the lack of a bed, it was possible to promote a positive approach to the development of the elective surgical unit.

If the implementation of change was to succeed within the NHS Trust concerned, doctor nurse collaboration would to be of paramount importance. Financial pressures and NHS reforms (see Appendix 1,2) would provide the catalyst for change, and the opportunity to introduce innovation. These and certain related changes may have been a factor in the Medical Directors' decision in agreeing to a nurse setting up an assessment clinic, and working in autonomy alongside a registrar or registered medical officer.

In developing a new post - such as in this study - doctors and nurses are required to be equal partners in planning and managing the post; patients need to be informed that they are being assessed by a doctor or a nurse; the training and responsibility of the new post holder should be acknowledged by the employer or Trust; legal issues be acknowledged, and national regulatory bodies (UKCC, GMC General Medical Council), provide support and advice.[185] In respect of this study, that the nurse concerned is accepted by the medical staff, in particular the Medical Director, and NHS Trust concerned, to introduce a fundamental change in the admission process namely the assessment clinic for surgical patients. The nurse in question and the Medical Director of the NHS Trust were able to discuss this innovation, and progress it towards realisation with full support from the NHS Trust and senior medical staff.

The elective surgical unit began to function in April 1993, with four operating theatres and two 30 bedded wards. In September 1995, an eighteen bedded day surgery unit was opened. In June 1996, the surgical and orthopaedic wards combined into one ward of 30 beds, and in September 1996 relocated to a 28 bedded ward, with patients being treated in three of the four operating theatres to allow for cleaning in the fourth.

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[185] Dowling , Mar R, Skidmore P, Doyal L, Cameron A, Lloyd S. Nurses taking on junior doctors' work: a confusion of accountability BMJ Vol. 312 11 May 1996 p 1211-1214

Results of monitoring patient length of stay showed that each patient has individual needs, and will stay an independent length of time in hospital (that is, a length of stay is governed not only by the patient's condition and treatment but, in addition, by the individuals medical, nursing and social circumstances). It was imperative that the length of stay for each patient be predicted so that admissions could be guaranteed.

Jan 1993	Mar 1993	Dec 1993	Jan 1994	Mar 1994	June 1995	Sept 1995	Nov 1995	Jan 1996	June 1996	Dec 1996
multi-disciplinary talks and weekly discussions with consultants	→	→	→	→	→	→	→	→	→	→
	Assemble all Consultant diaries in Admissions									
		→	→	→	→	→	→	→	→	→
	Plan operating lists with/for consultants, according to patient priority and bed availability									
		→	→	→	→	→	→	→	→	→
planning stage	trial of Pre-Operative Assessment (POA)	analyse trial POA								
	monthly reports begin	→	→	→	→	→	→	yearly report		
		formulate selection of patients to attend POA & who should have ECG	→	update selection of patients for POA	→	update selection of patients for POA	→	→	→	→
			commence full POA study	Nurse training - Begins assessing patients July 1994	→	→	→		data for study complete	
		Yearly audit of POA outcomes & theatre cancellations thereafter								
	60 surgical beds			40 beds	30 beds	additional 18 beds on Day Surgery Unit but ward reduced to 28 beds				
	8 beds vacant	4 beds vacant		0 beds vacant						
	4 theatres					3 theatres				
	minor operations only	intermediate/minor operations		major intermediate minor operations						
analyse individual length of stay per procedure to determine average	→	→	→			begin amalgamation of POA data with hospital derived data	begin individual search of patient notes and records to June 1997			majority of data retrieval - begin SPSS - to Sept 1997
	nurse attends out-patient dept. (OPD) for urgent cases	→	→	stop visiting OPD for urgent cases						

Table 4 To show the chronological order of development

3.5 To guarantee each patient a bed on admission

Besides the literature search, locally kept statistics were researched. No figures had been kept on cancellation of patients, the reasons why surgery did not proceed. Theatre figures were not recorded or audited; bed usage had not been monitored.

In order to guarantee that every patient admitted would have a bed on arrival, it is essential that the expected length of stay for the preceding patient is known, and that the ward is able to "book" a bed for the next patient. Initially, all patients admitted to the elective surgical unit were monitored as to the procedure undertaken and their length of stay. In addition to this, a retrospective study was undertaken on the length of stay for all patients admitted during the year 1992. The length of stay was then averaged for each procedure. Each of the consultants, and the nursing staff, were also asked for their opinions of the expected length of stay for each given procedure; and these figures were also averaged.

For instance, consider length of stay for total knee replacement. All the nursing staff expected the patient to remain two weeks. The consultants' expectation varied between 7 days and 10 days. In reality, analysis of the 69 patients undergoing total knee replacement in 1992 showed that the expectation of the patients length of stay by the nursing and medical staff was shorter than the actual length of stay.

Consultant	Age range YEARS	No. of patients	Average stay DAYS
A	46-60	0	0
B	46-60	2	12
C	46-60	1	15
A	61-75	15	12.5
B	61-75	11	15.5
C	61-75	9	15
A	76-100	7	12
B	76-100	18	18.8
C	76-100	6	18.1

Table 5 Data for patients undergoing total knee replacement in 1992

An initial target was set for length of stay as indicated below. This target was used as a rough guide to allocating beds for patients in the 'ward bed booking diary' until a more accurate guide was available. (See Appendix 11)

	Major	Intermediate	Minor Surgery
Orthopaedic Surgery	12 days	3 days	1-3 days
General Surgery	7 days	2 days	2 days

(No urology consultants were employed at this time)

Table 6 The mutually agreed length of stay

Staff on the two thirty-bedded surgical wards were asked to monitor their bed usage, and a bed booking diary was commenced. This provided the opportunity to further regulate and monitor the usage of beds and the length of stay for patients.

In 1993 the wards patients would be allocated a bed for an estimated length of stay, four beds remained unallocated to give flexibility in patient discharge, due to this length of stay not being entirely predictable. These four unallocated beds were to reduce to two per ward within 1 year, and by the end of spring 1995 as anticipated length of patient stay became more accurate, to no unallocated beds being held in reserve.

A bed booking diary was to become an essential item in the ward, providing the opportunity to predict staff requirements; identify patients with special needs; hire special equipment; and permit the of offering a bed, for a specified number of days, to a patient rehabilitating from acute surgery undertaken in the acute site, pending discharge.

It was agreed that the elective site would accept patients due for elective surgery, irrespective of their residency or age. The unit would have anaesthetic, and surgical staff during the operating theatre hours, and a reduced number of medical staff thereafter, necessitating that all patients be in a medically stable condition once the anaesthetic and senior medical staff had left the site. The elective surgical unit would be utilised for all surgical procedures other than those requiring (or possibly requiring) the use of facilities only available at the acute site. This would also necessitate that patients should be medically fit to undergo their surgical procedure, and not in themselves be in need of additional medical/anaesthetic supervision outside the theatre operating hours, irrespective of the proposed surgical procedure.

Initially only minor surgical operations were undertaken at the elective site due to the uncertainty of medical requirements overnight. However, with the experience acquired during the first six months, the types of cases treated broadened, to include major cases,

providing intensive care was not required. These changes required careful selection of the patients, to ensure their medical stability and fitness for surgery.

In order to achieve improved quality patient care and a guaranteed bed on arrival, it would be essential to physically see the patient to identify each patients holistic needs, thereby allowing an opportunity to predict the requirements of each patient and to plan for their needs in advance of admission (and also providing the opportunity to anticipate their length of stay in hospital). An assessment clinic was therefore established which would provide nurse-led and nurse-run assessment for all patients including those due to undergo major elective surgery.

The elective surgical unit with its assessment clinics was to :-

- enable patients to be admitted without the risk of acute admissions taking priority thus providing the opportunity to reduce length of waiting lists in line with patient charter initiatives.

- establish a service which would directly focus on the patient, an assessment clinic

- provide high quality clinical and non-clinical care,

- achieve quality outcomes for patient such as patient satisfaction and involvement in their care,

- minimise the hospital stay,

- create an environment which would help to understand how management affects the provision of patient centred care.

Before discussing the assessment of patients, it is necessary to briefly discuss the re-engineering of the admission process.

3.6 Co-ordination of the changes

In order to achieve the above, the nurse became a link person (to co-ordinate any patient orientated concerns), should be available as a contact for general practitioner, social services, patients and their relatives/carers, as well as for the hospital departments. Due to the changes relating to the hospitals on both sites, the local population were sensitive to all changes relating to "their local hospital", any change which occurred would be given close scrutiny by the community health council and the local population.

It was essential that the nurse should co-ordinate the changes in the admission process, liaise with all members of staff, and monitor the effects of change - such that any new ideas or concepts could be considered within the total goal and developed if appropriate and practical (See Table 7 Role of the Admission Liaison Sister.) Interviews were undertaken with the multi-disciplinary team, the consultants' medical team, the admission officers and secretaries, dieticians, and physiotherapists. A knowledge of multi-disciplinary needs and requirements would be essential if the changes were planned were to be successful, and the requirements of each consultant surgeons be met.

Having introduced the change in admission process, and introduced an assessment clinic, the nurse raised a question for discussion with the multi-disciplinary team - whether the improvement of patient quality care should be made through assessment clinics alone, or possibly to introduce anticipated recovery pathways. This along with the main targets of achievement will be discussed individually.

3.7 Assessment clinic and/or anticipated recovery pathways

Consideration was given to the introduction of Anticipated Recovery Pathways (ARP), a documented programme of multi-disciplinary teamwork which would plan the goals that each patient undergoing any given procedure would be expected to attain each day of their admission through to discharge. This was investigated, in the form of a literature search as well as visits to hospitals where ARP had been implemented. ARP seek to review the process of care-delivery, which focuses on the processes, tasks and interventions that must occur in a timely fashion to ensure achievement of prescribed outcomes.

ARP provide a framework for an examination of the organisation of services to patients, together with a review of the skill mix of care providers, and contribute to the development of quality assurance programmes. The ARP are specific to a particular procedure, and are

unique to a particular medical or multi-disciplinary team. In other words, an ARP developed in one hospital cannot be used in another. The ARP is developed around the individual objectives of the consultant, physiotherapist, occupational therapist, pharmacist, nurse, dietician and social worker, to provide quality care for a patient undergoing a specific procedure. Individual patient variances are identified, and added to the main ARP, to produce a care planned for the specific needs of the individual.

The benefits from working with ARP are many for patient and family, nursing, medical staff, paramedical staff and community.

- For patients, improving the level of information about their condition, allowing a forum for discussion about treatment and progress, including discharge planning.

- For nursing staff, in communication with the multi-disciplinary team, planning treatments with an awareness of the constraints of other staff, including manpower requirements. Providing an accurate data for audit and research.

- For medical staff, increasing efficiency in ward routine, decreasing administration duties of house officers, whilst increasing the available time for medical tasks.

- For paramedical staff providing more accurate information for contracts and coding data. Providing the opportunity to education other staff and patients, with recognition and appreciation of different professional roles within the hospital and community environments.

Interviews with the consultants and the Chief Executive, as well as with the multi-disciplinary team, showed a mixed reception to the two structures of care which were being advocated: assessment clinics and anticipated recovery pathways. With the amalgamation of the two hospitals; with the change in nurse staffing, teams being split across different wards and across sites; and with the reduction in the use of agency staff, it was decided by the multi-disciplinary team (including several Consultants), that to instigate the ARP would be too large an undertaking to be co-ordinated by one person, and that assessment clinics alone were for the time being, to be the way forward.

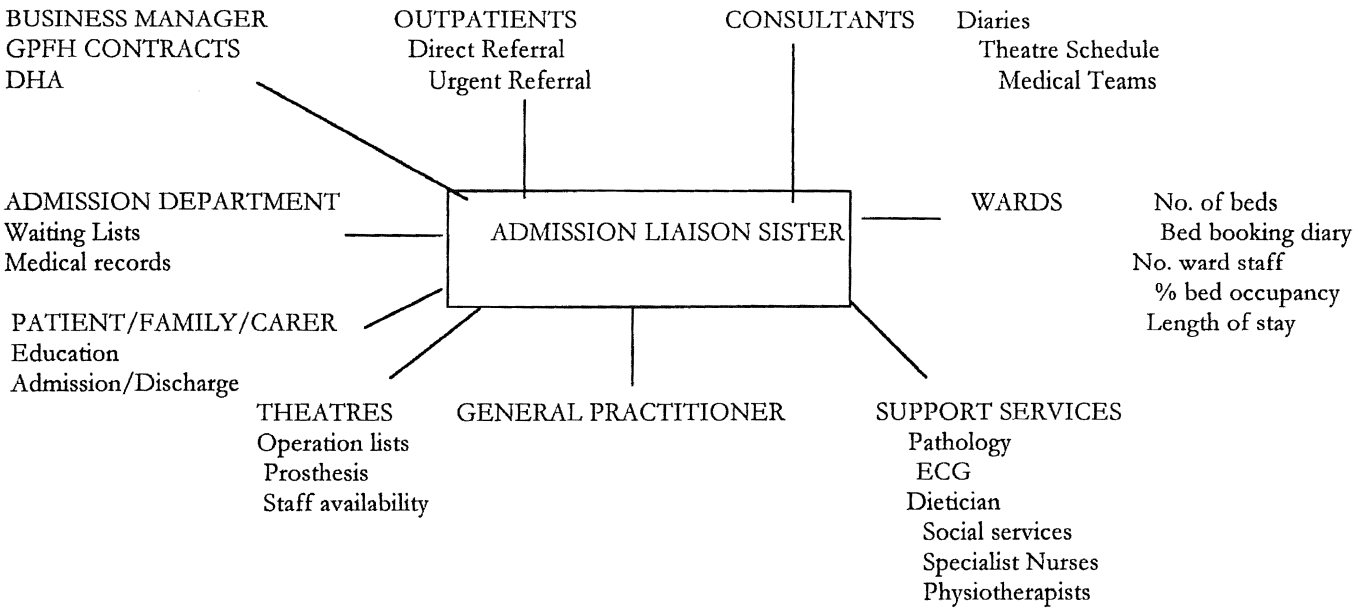
Multi-disciplinary team meetings were arranged, and although medical staff were unable to participate on a regular basis, owing to other commitments, it was agreed that the current patient documentation required attention, to assist all members of the multi-disciplinary team to identify which other team members were involved in a patient's care. These

meetings resulted in a new nursing care plan, designed to provide early identification of individual patient requirements, and allow the members of the multi-disciplinary team to identify easily which members were involved and what plans were made or being made, for any given patient's care. These care plans came into use in 1994, and the multi-disciplinary teams continue to meet for specific tasks such as writing of patient information leaflets.

Case Study 3

The patient with a history of weight loss, and hypertension, living alone, fell in the semi-detached house where she lived alone. The cause of the fall was unknown. The femur (thigh bone), was broken and the patient was admitted for surgery. Involved in the care of this patient would be the nursing and medical team, the physiotherapist, occupational therapist, pharmacist, social services, and patients' family. Early identification of the problems associated with the individual will allow the team members to work towards a common discharge date, ensuring that any change in medication is adjusted well before the discharge, that the social services have organised the family to bring a bed downstairs for the patient, and that home help together with meals on wheels are organised to commence the morning after discharge. That the general practitioner and district nurse can be informed in advance of the discharge that Mrs. A will be returning to their care on 'x' date with 'y' facilities organised, and that the family can assist by providing 'z' care.

Table 7 To show the role of the admission liaison sister



3.8 Main objectives of the re-engineering process

The re-engineering of the admission process was to involve all staff in the surgical team. Certain changes within the admission process would need to be altered and then maintained whilst the assessment of patients was both introduced and developed (see Table 4 To show the chronological order of development).

In addition to the main objectives of the elective surgical unit as noted above, the re-engineering process had additional objectives.

- To guarantee each patient a bed on admission, without the patient needing to telephone in advance.

- To identify prior to planned admission the patients' medical fitness/illness, including any nursing, social, and psychological concerns any one of which might alter the length of stay during hospitalisation.

- To achieve quality outcomes for patient such as improved patient satisfaction and involvement in their care.

- To ensure waiting lists are reduced to within government and hospital dictated time limits.

- To achieve greater flexibility in the compilation of the operating list - ensuring priority of admission.

- To ensure the co-ordination of admission with prosthetics, and of theatre time, with bed availability and surgeon.

- To plan discharge with a multi-disciplinary approach prior to and on admission.

- To promote a more positive image of the hospital.

- To optimise the bed usage.

- To keep pace with the increasing management information and associated statistical information requirements.

3.9 Re-engineering the admission process[186]

Several factors required change in the hospital admission process if the Chief Executive's policy of no cancellations due to lack of a bed was to be implemented (Table 8 The new admission process). It emerged early in the analysis of how to achieve this that it would not be possible to change just one aspect of patient care - that is, provide a guaranteed bed - unless an endless supply of empty beds and staff could be produced at will. It would be essential then to make fundamental changes across the hospital. The traditional attitudes and behaviours of staff would need to change with the proposed new approach to patient admission, so that the patient became the centre of a holistic[187] approach in planning of their care.

This study would be a fundamental part of the audit process to ascertain the affect of the assessment clinic within the hospital, monitoring the throughput of patients, the patient outcomes, patient cancellations pre- and post-admission, and the average length of stay per procedure. In the circumstances, a formal investigation, such as a randomised controlled trial, was not possible, since the initiative was rooted in the attempt to improve hospital efficiency rather than an effort to demonstrate findings of a generalisable nature. And, in any case, there were no additional funds to support such an investigation. The study therefore had to take the form of an on-site evaluation, making use of whatever data could be traced or generated.

[186] Business Process Re-engineering: myth & reality edited by Colin Coulson-Thomas 1994

[187] Analysis of the concept of holism within the context of nursing Silvia Ham-Ying, British Journal of Nursing 1993, Vol. 2., no 15. p 771 - 775.

Table 8 The new admission process

1. The patient is placed onto the waiting list.
2. The patient is asked to attend the assessment clinic.
3. The patient is assessed - medical, nursing and social needs identified.
4. Patient is cleared as fit to admit and an appropriate admission date is provided with or without special support from multi-disciplinary team.
5. Any special equipment or staff are informed of the admission date, procedure and patient details.
6. Patient is not cleared for admission. Alternative course of care is arranged.
7. Operation list is formulated with the knowledge of which patients are expected to attend.

3.10 Patients' for urgent admission

In 1993 and 1994, it was essential to support all staff, particularly in outpatients' and to ensure that patients were appropriately selected for treatment. This required close liaison between the nurse and each of the consultants, in order to discuss patient needs, the appropriate site for care, and treatment dates. Those patients due for urgent or soon admission (between one and ten per clinic) would be referred directly to the admission liaison sister, and she would ensure that appropriate arrangements were put into effect. When an assessment clinic was in progress, the patient would be seen in the clinic, as a continuation from their outpatient visit; and while in the outpatients department, all patients due for 'urgent' or 'soon' admission would be provided with an admission date.

After two years in 1995, this facility was reduced, owing to the lack of available nurse time, and because medical staff were more aware of the requirements which would enable treatment to be undertaken at one site or the other. Urgent patients only would continue to be referred to the assessment clinic for immediate assessment, the admission dates being undertaken by the admission officers.

3.11 Compilation of the operating list

In order to ensure priority of admission to hospital, the waiting list needs co-ordination. Traditionally the consultant surgeon held his own diary for booking patients into operating lists, yet he/she may not have ease of access to the full waiting list, resulting in urgent and soon patients being given priority within the diary system. The operating list was also planned with the awareness of who would be operating, the consultant being required to undertake certain procedures, and the registrar a different selection of cases. These considerations would be essential in maintaining a flow of patients from the waiting list to the operating list for treatment, together with the checking of an available bed in the ward.

The diaries were co-ordinated centrally from April 1993 by the admission officers who together with the nurse, attended the clinic if an urgent patient required a date for admission. The diaries for each of the consultants from both hospital sites were carefully and sensitively amalgamated. The amalgamation of the diaries was to ensure that no patient would be missed by their being placed in the wrong diary (surgeons up to April 1993 were used to having operating availability on both sites, for elective and emergency cases). The diaries would then be used to plan the theatre list, (by case mix or procedure), and provide an appropriate medical priority per patient. This move was unprecedented, and was met with considerable apprehension by the consultants. Time was required, in working with nurse and consultant, to develop the mutual understanding and respect, and to persuade the consultants that the admission sister was not trying to usurp their position.

The diary, with its provisional list, is then used to book a bed on the ward for the patient, call the patient in for assessment, and to confirm the elective surgical unit operation date to both patient and surgeon. Any space on the operating list, after consideration for the outpatients clinics and potential urgent cases these might involve, could then be filled with an additional patient or two from the 'soon' or 'routine' waiting list. Fine tuning of the operating list could be attended to following this meeting with the theatre manager.

The completed operating lists would be sent to the operating theatres and wards. Following the operation, the list was marked to indicate if the patient had undergone surgery, or not, and if not the reason (if known) would be recorded. These "completed" operating lists were then sent to the assessment clinic and a compilation of the outcomes was recorded. On checking each patient on the hospital computing system, or with the ward diaries, it was possible to identify the reasons why any patient failed to proceed with their surgery. It was also possible to identify those patients who had attended the assessment clinic and begin to

audit the outcomes of the assessment in terms of reducing the cancellation from operating sessions.

Initially, the allocation of theatre time presented a difficulty on the wards, as the general surgical lists tended to be in the later half of the week, filling the surgical ward to beyond capacity; while the orthopaedic patients for the one consultant, with four lists in one day, filled the orthopaedic ward, causing difficulty in bed allocation for the other consultants patients. The theatre lists were ultimately altered to provide a more planned operating timetable.

3.12 The co-ordination of patients' admission

The benefits of the nurse attending outpatients, and having control - jointly with the admission officer - over the diaries, were twofold: the sister was able to arrange for immediate assessment at the same time as their outpatients appointment, and the admission officer was able to provide a date convenient to the surgeon. With patience and perseverance, the requirements of each surgeon became known, and appropriate space was available on each operation list for the urgent cases, such as suspected carcinoma or malignancy; and the remaining patients on the operation list were provided with adequate warning of their pending admission, so that any could telephone and cancel their admission if they wished. The patient would be asked to attend for their assessment in the same letter informing them of their admission date.

There was resistance to the change from the consultant surgeons who had previously planned their own operation lists. Gentle persuasion and perseverance were required to demonstrate the benefits from the change. Prior to the change, all consultants would have cancelled a patient from the operation list as late as the day prior to surgery, in order to give access to the patient for urgent admission. With patience and regular contact in the outpatient department, the consultants realised the benefits of the changed process, in terms of planning patient treatment and assessment, and actively encouraged its progression.

3.13 Multi-disciplinary teamwork

Close liaison with each of the consultants provided an opportunity for the nurse to discuss all of the patients' needs and the arrangements which would be required for admission. Patients with special needs, such as diabetes, would be referred to the appropriate specialist team (who would offer advice and guidance to the patient) and the ward team, for pre-, peri- and post-admission. This would prove particularly important for the patient with several medical concerns, such as a diabetic patient due for admission for surgery. In order to

ensure a satisfactory healing process, it is essential that the blood sugar levels are kept within normal boundaries. However, when a patient is not eating (as in preparation for surgery), the insulin and/or tablet control for the diabetes requires adjustment; early return to normality with regards to diet and medication is essential to minimise the disruption this causes to the patient's well being. The diet would be ordered in advance of the admission, thereby ensuring that from the first meal the patient would be able to maintain his/her appropriate intake of carbohydrate. In the meanwhile, additional support may be provided with relation to the proposed surgery, such as mastectomy, the breast counsellor would be in contact with the patient at home, prior to admission, and would help them and their family come to terms with the planned surgery, offering counselling and support throughout the process of admission and following up with discharge and visits to the outpatients.

All members of the multi-disciplinary team were interviewed and all requested early notification of patients possibly requiring their assistance. The team included physiotherapists, occupational therapists, dieticians, stoma nurse, breast counsellor, infection control sister, respiratory nurse and anti-coagulation nurse and the community nursing team. From external to the hospital, the co-ordinator from the Colindale Blood Transfusion centre wished to be informed of any patients due to undergo total hip replacement, and arrangements were made to discuss patient consenting to donate the head of the femur following surgery. The bone would then be used as packing around unstable joints when other surgical procedures were not possible. (The consent for this procedure is now undertaken by the nurse assessors.)

Special equipment could be made available, or ordered in advance of the admission; for example, a special bed mattress for the patient with multiple sclerosis and who was chair bound, or a hoist for the patient who was paraplegic. Due to financial constraints the range of equipment kept in the operating theatre department was reduced to that which was essential, and any special equipment would require ordering. For those patients requiring a prosthesis, such as a hip or knee replacement, the appropriate manufacturer could be asked to provide a certain item for a named patient on a given date, thereby minimising the amount of equipment stored in the theatre department.

3.14 Creation of the assessment clinics

Trial period - March to December 1993

In March 1993 the assessment of patients due for admission to the Elective Surgical unit was proposed and accepted by the Trust board. The new admission process was introduced

and a trial undertaken. To that end, a surgical house officer was available for five sessions a week to see patients due to undergo surgery. By September 1993, the number of sessions was increased to seven, and patient information leaflets were written, to be given to patients in the assessment clinic and/or on the ward. During the nine months of March 1993 - December 1993 patients were invited by the admissions officer to attend the newly formed assessment clinic, to be interviewed prior to their admission. The admissions officers were asked to invite all patients expected for major surgery, and then to fill the lists with patients expected for surgery within the month. Which patients were brought in for assessment was a matter for the admissions officer's discretion.

During this initial trial period of March to December 1993, the patients were selected by the admission officers, and were allocated an appointment time and date for when the doctor (who would undertake a basic medical assessment), and nurse (who would check the nursing and social concerns), were available to see the patients. The objective was to identify which group of patients would most benefit from an assessment prior to admission. This was achieved, and after six months, criteria for selection of patients for assessment were compiled. The actual length of stay for each procedure undertaken was also monitored. A more accurate picture emerged which would be used for booking a patient a bed in the 'ward bed booking diary', dependent upon the clinical procedure.

Results

In the first month of assessment clinics alone, (March 1993) 29 out of 57 (50%) of patients asked to attend the clinics required referrals. The nature of the referral varied, and included referral for investigations, treatment by general practitioners for hypertension; and referral to dietary team, specialist breast counsellor or specialist diabetic nurse.

During the six months (March 1993 - August 1993) 842 patients were asked to attend the assessment clinic. Of these patients, 83 (10.1%) were deferred due to either i. need to proceed to an acute wards for surgery; ii. need for further investigation or treatment either with GP or in outpatients; iii. surgery no longer appropriate or required, hence removed from the waiting list. Of those patients accepted for admission, three patients (0.4%) had surgery deferred due to being unfit for the elective site, and required surgery at the acute site. Four patients (0.5%) were cancelled due to the list over-running A further fourteen patients (1.8%) developed chest infections and/or had tonsillitis and had surgery cancelled for this reason.

As a direct result of the first six months trial assessments, it was possible to write a criteria to select patients for assessment.

1. Patients for Major surgery.
2. Patients for intermediate surgery + over the age of 35yrs.
3. Those with learning difficulties
4. Those with physical difficulties.
5. Those with individual concerns necessitating extra medical or nurse attention prior to admission.
6. Those with cardiac or medical history which may present an anaesthetic, medical or nursing problem.
7. Patients with a dependant spouse requiring 24 hour care.
8. Those for Saturday surgery, being unable to be "clerked" on the ward.

This criteria was to alter with the passage of experience and time.

A protocol was also written for those patients requiring ECG (electrocardiogram). An arbitrary age had been used such that all patients of or more than 60 years old should have an ECG. The cardiology department was concerned that an additional workload was being placed upon the ECG technicians, which had not been anticipated with the reduction of the facilities available in outpatients and inpatient care at the elective site. An audit was undertaken to determine the criteria which would determine if an ECG should be undertaken. The age of each patient who had been asked to attend the for an assessment was noted, alongside their medical history, to determine if there was a correlation between age and medical need for ECG, and also if certain medical history would pre determine the need for an ECG. Although the audit was small n=842, and the details of medical history dependent upon the history taken during interview, it was determined by the assessing team that those patients who benefit in particular from an ECG at the particularly NHS Trust concerned were:-

1. Those patients who are of aged equal to or more than 70 yr.

2. Those patients with hypertension or cardiac disease.

3. Those patients with an irregular heart rate.

This resulting criteria remains current.

Patients comment was very positive on the assessment clinic, from May 1993, it is written that "without exception all have appreciated the certainty of knowing an admission date and many have found the pre-admission clerking an opportunity to get to know their way around the hospital, ...to ask questions with regards their surgery prior to being admitted." - Admission Liaison Sister - Assessment Clinic Report May 1993.

During the trial period in 1993, the medical director and the nurse in attendance at the assessment clinic discussed the possibility of the nurse undertaking the assessment herself. The medical director was most supportive of the idea, having worked with the nurse within the Trust and therefore having an awareness of her capabilities. Also pertinent, was the junior doctor hours being reduced, causing a restriction on their availability within the wards/theatres and outpatients; in addition, changes in the requirements on medical training would require the junior doctors to work under direct supervision of the consultants.

With support from the Director of Nursing, training was undertaken during 1994, including training in medical clerking, physical examination, auscultation of chest, venepuncture, POPUMET (radiological protection), legal issues and trust agreement for liabilities. This enabled the nurse to commence her own assessment clinics beginning August 1994, as the clinical nurse specialist in patient assessment, that is performing the assessment and making decisions relating thereto, in accordance with UKCC Guidelines, Code of Professional Practice (1992), Scope of Professional Practice (1992) and later, Guidelines for Professional Practice (1996).

3.15 Summary

In summary, two district general hospitals amalgamated, and an NHS Trust was created. An elective surgical site, and an acute site with intensive care and coronary care units was created. Both sites would offer patients outpatient facilities. Funding was to be provided from a significant number of GPFH's and DHA. The objectives of the elective surgical unit included the ability to offer patients a guaranteed admission date; the assessment clinic which would directly focus on the patients' individual needs, offering patient involvement in their own care and plan to minimise the length of hospital stay.

The re-engineering process would include multi-disciplinary teamwork, to establish a level of care which would provide high quality clinical and non-clinical care for individual patients. Greater flexibility with consultant theatre sessions and use of the waiting lists, together with improved planning of the operating lists and liaison with care workers would improve and optimise the bed usage in the hospital, promoting a more positive image and co-ordinated team work. Any specific patient requirement could be co-ordinated by the nurse, linking all aspects of the admission episode to the patient concerned.

In February 1993 a senior nurse with 15 years experience was asked by the Business manager for Surgery & Orthopaedics to leave the ward environment, and work in the to-be-formed elective surgical unit. The remit being that all patients due to be admitted for elective surgery should be guaranteed a bed on the day of admission; that no patient should have the admission cancelled due to lack of a bed. In pursuit of this remit, the nurse was to develop an assessment for patients due to undergo elective surgery, so that an individual patient due for admission could have their holistic[17] needs identified in advance of admission, thereby enabling planned care and discharge to be arranged for specified dates. Following the initial implementation of the trial assessment clinics March - December 1993 a permanent assessment clinic was commenced. This together with the outcomes of the assessment clinic is discussed in the next chapter.

CHAPTER FOUR

PLANNING THE ASSESSMENT CLINIC JANUARY 1994-JUNE 1996

4.1 Background Information to the assessment clinic

Clinician reaction

Following the initial remit, to ensure that each patient had a guaranteed bed on admission, complete freedom of choice was provided by the business manager as to how the task was achieved. The proposals to create a possible clinic to ascertain patients fitness for surgery, together with any underlying nursing/social concerns was given support; and the matter was discussed at audit sessions, and with each of the consultant surgeons.

A report was sent monthly to each consultant; the business manager and Chief Executive; progress and plans, together with changes were noted. Certain proposals were declined by the consultants (such as the introduction of the anticipated recovery pathways) due to their not wanting to introduce a far greater change than was necessary within the new NHS Trust structure. The suggestion that consultants may wish to use the opportunity of attending the assessment clinic, to update themselves with their patient within the month prior to surgery was met with relative enthusiasm. One general surgeon and one orthopaedic surgeon began to see their patients, and within eighteen months, three orthopaedic surgeons and two general surgeons were attending each week.

A fourth consultant wished the patients to be seen in the outpatients department following his outpatients clinic, rather than in the assessment clinic. This resulted in considerable disruption for all patients, the outpatients clinics were often running overtime, and the assessment clinic patients were moved from one area to another to be seen for a few moments only. The patients expressed their dislike of this approach, as did the nursing staff in outpatients who found it a disruption to the clinic. Attempts to make the change effective were implemented, adjusting the times patients were asked to attend the clinic, and reducing the outpatient clinic numbers, but additional urgent cases would frequently be added to the outpatient clinics, and the change was original procedure was reinstated after six months.

One consultant surgeon provided exceptional support and guidance for the changing role of the nurse, suggesting role development and initial training, and continued to provide a supportive and advisory role as the months progressed. As was to become the case with all

the surgeons, if a decision was taken by the nurse that the patient was not fit for surgery, the decision would be respected. A mutual respect evolved for each others role; an open approach was held by both parties in learning and development. Where a decision could not be taken easily, such as in a patient with medical concerns and the need for urgent surgery, the consultant and nurse would discuss the case, noting the risks and a decision would be reached as to an outcome.

Annual leave presented considerable concerns, as no other nurse was trained to provide cover for the admission liaison nurse; later, for the clinical nurse specialist, although registered medical officer or registrar would cover the role within the clinic area only. In January 1995 a senior staff nurse was appointed to assist the doctor during his assessment clinics, whilst the nurse undertook her own clinics concurrently. After January 1996, this staff nurse was to spend six months training to assess patients, and in July 1996 she began her initial clinics. This has resulted in a doctor covering just one clinic a week, the remaining twelve clinics being covered by the two nurses. Where a patient is identified by the consultant as having a specific medical concern, the nurse specialist is contacted and the patient requirements are appropriately organised.

One consultant orthopaedic surgeon was adamant that his patients would not attend assessment clinic; his approach was to change in due course. The surgeon repeatedly had theatre lists with patients who were cancelled due to being unfit, or who had no blood cross-matched in advance of theatre, or who did not arrive. His waiting lists grew, and he came to accept that perhaps those patients due for major surgery only should be seen in the assessment clinic. This arrangement was put in place, although the patients were then "re-clerked" on admission. Although the number of major cancellations reduced, the number of patients not arriving did not; and after several very small lists, due to patients not arriving, he conceded, resulting later, in his insistence that all his patients attend the clinic. Another consultant orthopaedic surgeon was most resistant to his patients attending the assessment clinic, although made no effort to prevent the occurrence, there was no active support. He was to leave the hospitals in June 1994 to further his career elsewhere. One general surgeon tolerated the changes but was not enthusiastic or in total agreement of a nurse managing in areas that had previously been under medical control, he had practised within the health service for many years and was near retirement which began in August 1994.

4.2 General Practitioner reaction

Initially, in 1993 and early 1994, a number of the local general practitioners were reluctant to respond to letters from the nurse, preferring to reply to the patients' consultant. This

resulted in a firm letter of support from the consultant on behalf of the nurse specialist to the general practitioners concerned. Over the following year 1995/6, a noticeable reduction in the number of patients found to be hypertensive at assessment occurred: in discussion with the patients', it transpired that their general practitioner had checked and treated them for hypertension in the weeks prior to assessment. Several cardiac problems were found on routine electrocardiograph, necessitating medical treatment. One patient was admitted directly to the medical team being in third degree heart block, and given a temporary pacemaker.

4.3 The aim of the Assessment Clinic

To provide patient centred care, focusing on individual patient requirements, with the ultimate aim to ensure a safe prepared admission for elective surgery.

OBJECTIVES

To identify individual patient needs and implement action to ensure medical, nursing, social and psychological care is at optimum prior to admission.

- To effect a partnership between patient and the clinical team; informing the patient of the planned care and surgical procedure, together with the expectations and aftercare; discussing complications and why they occur together with any preventative measures which will be taken.

- To minimise the hospital stay and hence reduce the chance of potential complications such as deep vein thrombosis.

- To develop reliable instruments to measure and monitor patient care.

- The individual nurse will work with autonomy, accepting responsibility and accountability for her actions.

- To admit appropriate case mix of patients from the waiting list, and maximise in-patient hospital efficiency in terms of staffing, bed usage, patient throughput and reducing waiting list.

- Patient may plan social/family/work commitments due to provision of fixed admission date.

4.4 Selection of patients for assessment clinic

The choice of patients attending the clinic formulated following the trial period March - December 1993 (outlined Table 9 To show the selection of patients for assessment). As noted in the admission process, each of the patients had been seen in outpatients and placed onto the waiting list (The new admission process Table 8). Approximately one month before the planned admission date, the admission officer requests the patient attends the assessment clinic. Each patient is then interviewed by either a specialist nurse or registrar. The registrar hereafter is referred to as doctor, and the specialist nurse as nurse. The nurse worked within the assessment clinic full time, and the doctor undertook clinics at designated times of the week.

4.5 Protocol

By July 1993 protocols were being formulated within the assessment clinic, for use in the elective surgical unit (see Appendix 3,4,5). The Anaesthetic staff would attend the assessment clinic for expert advice, protocol was written to provide consistency as to which patients required investigative procedures, blood cross match, pathology, radiology and ECG investigations. Criteria were also set for the deferral of patients' admission to the elective surgical unit. These criteria were essential to the maintenance of consistency in the decision of which patients should be admitted and which deferred.

Table 9 To show the selection of patients for assessment

1. Those patients due for major surgery.
2. Those patients due for intermediate surgery and over the age of 50yr (this had been 40 years in 1993/4 and was altered to 50 in late 1995.
3. Those patients with learning or physical difficulties
4. Those patients with known medical/anaesthetic concerns
5. Those patients with social or concerns about surgical procedure.
6. Those patients due for Orthopaedic, Ear Nose & Throat or Ophthalmic surgery. Until 1995 no patients for one Orthopaedic Consultant were seen at his request .

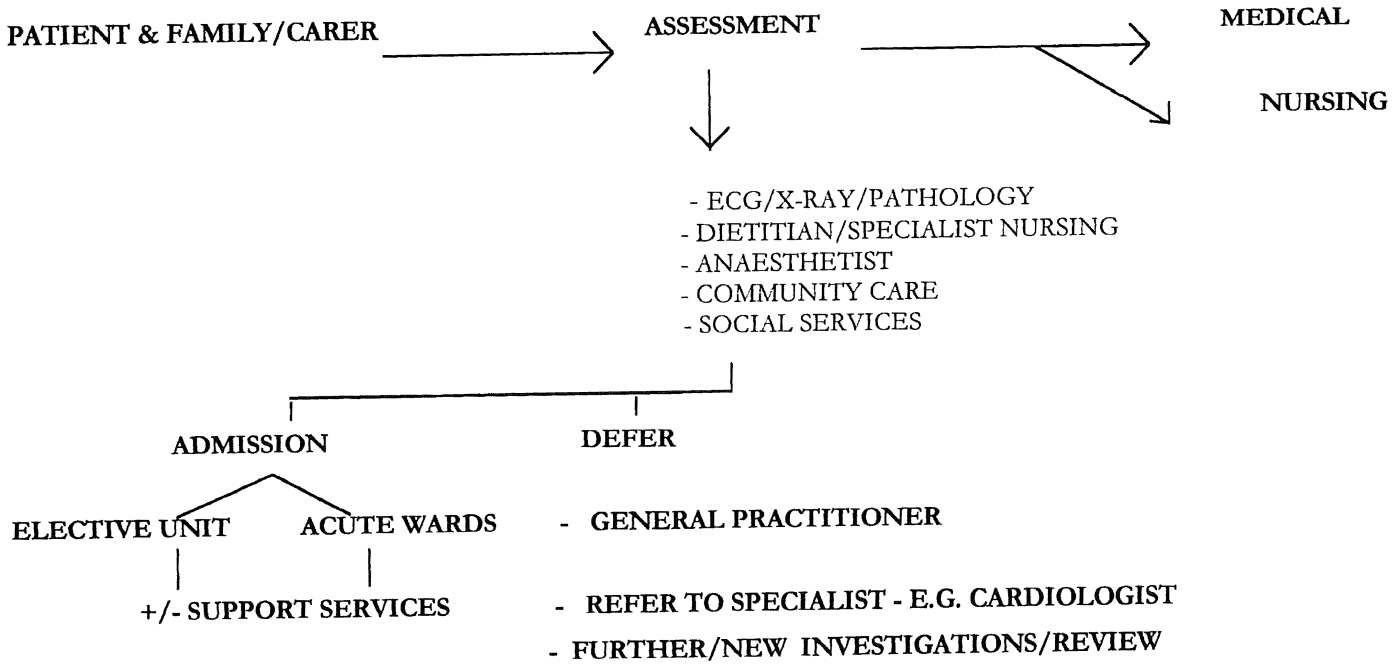
4.6 Assessment procedure

As has already been mentioned, the planning of care for any individual should identify not only the main concern - the area requiring treatment on this occasion - but also the other needs of the patient, such as other medical conditions, nursing problems, and social needs. The purpose of the assessment interview is to ascertain the precise complaint(s) of the patient and to identify any previous medical and surgical history, and their current medical history, and any relevant nursing history and social history. This is a structured interview designed to provide the assessor with a full background to the patients medical record, together with any treatment(s) currently provided. See (Figure 3 To show the assessment process to admission, Figure 4 To show the flowchart of patients from assessment to admission).

Patients are provided with general health education, together with relevant literature pertinent to their own health situation; weight, hypertension, smoking, alcohol or drug abuse, nutritious eating and keeping fit. The consultants who visit view the clinic as a welcome opportunity for the patient to discuss any lasting worries and for the consultant to update himself with the patients' condition.

Based on the information obtained at interview and the protocol criteria, certain investigations will be requested. The assessor then makes a review of the investigation(s) and findings during interview and reaches a decision as to the patient's need and suitability for surgery at the elective unit (Figure 4 To show the flowchart of patients from assessment to admission). If the patient is not deemed suitably fit for surgery in the elective unit, he/she may be referred to the acute site for surgery; or, if an underlying medical condition is identified which may present a hazard for the patient, he/she may be referred to another consultant for treatment prior to re-considering the admission for surgery. Referral to specialist multi-disciplinary team members is instigated at the patient interview and co-ordinated by the nurse so as to ensure that all necessary persons involved with a given patients' care were aware of any changes related to the patients' admission.

Figure 3 To show the assessment process to admission



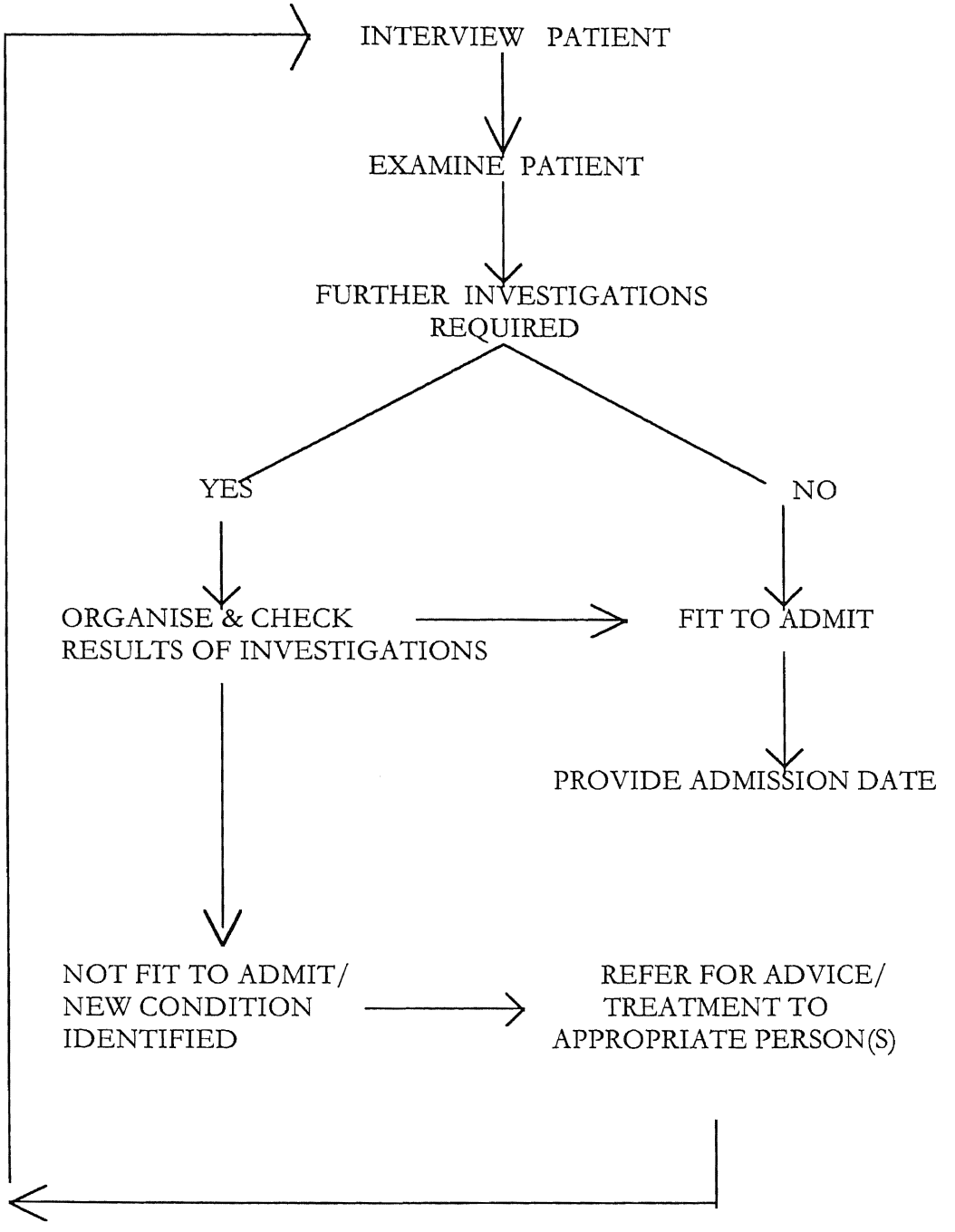


Figure 4 To show the flowchart of patients from assessment to admission

4.7 Patients' with specific needs

If it is required, the patient may be referred to a nurse specialist or dietician to provide specific support for the patient prior to, during and following admission. This is particularly pertinent for those patient undergoing surgery affecting body image, such as mastectomy.

Case study 4

A gentleman due for an elective below knee amputation, who had no family, and lived on the third floor of a block of council flats with no lift. This admission was deferred until emergency accommodation in a ground floor flat was arranged and social services to assist both within the flat and with shopping. Once arrangements were in place, the admission date was set and discharge plans organised so that as soon as the gentleman was medically fit and able to manage on his own within the flat, his discharge could take place without needing social services to provide assistance at short notice.

The patient who has special needs, such as learning or physical difficulties may require additional support from their community or hospital care team whilst they are in the district general hospital. The patient who has physical difficulties may also have additional/associated medical concerns which need identifying prior to admission, associated concerns may include restrictive movement (particularly of the neck and limbs) due to contraction of muscle, which could interfere with the anaesthetic and surgery. This group of patients are offered an extended appointment, and provides the time for an in depth discussion with the care providers and for patient examination. Particularly important for this group of patients is detail regarding the activities of daily living with specific reference to the ability to wash, dress, mobilise, eat, drink, communicate, and the anticipated reaction to a changed environment. Specific investigations may be required prior to discussion with the anaesthetic team. Once the concerns have been identified, and detailed documentation made in the hospital notes, the admission is planned to encompass the specific needs of the patient. In addition to the usual planning, the patient may require constant attendance by their carer, appropriate accommodation will be required.

The deferral of patients

Although a significant number of the patients seen in the assessment clinic are fit to proceed with minimal intervention/investigations 5231 patients (73.1%), there are many who require the admission to be deferred until certain other factors are dealt with 816 (11.4%). The patient, and indeed the assessor, is unaware of these additional requirements prior to the assessment; therefore, careful discussion and explanation is required in order to identify

correctly the concerning matters, to plan the care for treatment, and to inform the patient of the outcome of treatment.

Objectives specific to patient deferral

- Identify any medical concerns, during assessment of patient
- Reduce unnecessary delays in hospitalisation.
- Refer patient as appropriate for investigation and/or treatment by General Practitioner and/or hospital resources.
- Record and review any treatments and re assess patients suitability for admission.
- The decision to defer a patient may be undertaken by a suitably trained nurse or doctor or anaesthetist in the Assessment clinic.
- All patients to be given concise details and reasons for their deferral procedure and discussing the expected outcomes of surgery and any complications which may arise.
- Patients deferred will be seen again in Assessment clinic to assess suitability for admission to either elective or acute sites.
- Patients deferred to acute site will be notified by acute site admission office of their new admission date.
- Clinical notes will be kept up to date and the appropriate consultant informed.

4.8 Resources

INCOME/EXPENDITURE

The increase in costs to provide a person(s) to assess the patients is required to be offset by the savings made as a result of the assessment and planning process. The savings are made in the following ways.

- The theatre lists are planned with the knowledge of each patients' needs. Stock on shelving can be ordered with more predictability thereby minimising wastage and costly prosthetics waiting for use.

- Those patients with special requirements have preparations in place prior to admission. Particularly important for those with learning difficulties. Dietary needs are catered for with the first meal.

- Patients being fully informed of their surgery and its implications thereby minimising cancellations on admission. Patient care is improved in having the knowledge of and being able to discuss the surgery planned. There are fewer cancellations from patients either not arriving or being unfit to proceed with surgery.

- As a general rule patients are admitted on the day of surgery, thereby reducing the length of stay.

- The length of stay can be further reduced by forward planning of the discharge, such that known assistance, such as family support, is provided for the anticipated discharge date. Support services are in place in advance of the patient admission providing support pre, peri and post admission.

- The skill mix and numbers of staff on wards and in theatre can be planned in advance appropriate to the group of patients being admitted or requiring care, thereby reducing or increasing staff accordingly.

- Waiting list is reduced by the removal of patients who no longer wish to or who no longer require to proceed with surgery.

The junior doctors hours initiatives provided funding through the NHS Executive for one year, to pay the salary whilst training a nurse to be an assessor.

The financial consequences of the assessment/management consequences are difficult to assess, primarily for three reasons :-

1. Reluctance to provide detailed financial information which might be of benefit to a competitor trust

2. Changes in accounting practices and standards over recent years. Comparison difficult/impossible.

3. The significant number of different initiatives and changes occasioned by the advent of the Trust all of which have some financial impact, but none of which is attributed separately.

The source of hospital income has changed during the recent years. For example a growth in income GPFH practices from 9% to 22% in the three years from 1992 to 1995, with a corresponding reduction in DHA payments for the same period. Other Trust income include moneys from extra contractual referrals, that is purchases of health care by a GPFH for a specific patient who resides outside of the area or whose GP does not hold a contract for care with the Trust.

	1992/3	1993/4	1994/5	1995/6
GPFH	9.0%	10.6%	19%	22%
DHA	87%	79.5%	65%	52%
OTHER	4%	9%	16%	26%

Table 10 To show the percentage of GPFH/DHA income

Expenditure can be balanced so as not to exceed income according by planning the throughput of patients during the year. A provision can be made to allow for the additional need of surgical and medical beds during the winter months, by keeping the number of planned elective patients at a minimum, and during the remaining nine months of the year planned admissions can be increased to make up the deficit.

WORKLOAD

The number of patients treated needs to be balanced with the number of referrals and patients being placed onto the waiting list.

As can be seen below, the number of patients being treated as day cases and the number of in-patient care episodes have increased during the four year period. During the same time

period there has been a reduction in the number of available beds in the elective surgical unit.

	1992/3	1993/4	1994/5	1995/6	1996/7
INPATIENTS	28,119	28,946	30,165	31,737	33,442
DAY CASE	4,093	4,181	5,163	5,485	

Table 11 To show the number of patients treated as in-patients or day case surgery

It is important for the waiting list to be with in attainable targets, and within desirable time limits - 'urgent' cases being admitted within one month, 'soon' three months and routine care within one year. The case-mix of surgery requires careful management if the numbers of patients treated is to balance with the number of patients waiting for treatment, income with expenditure and most importantly patient/purchaser satisfaction with care received. Without this balance the income to the Trust cannot be guaranteed.

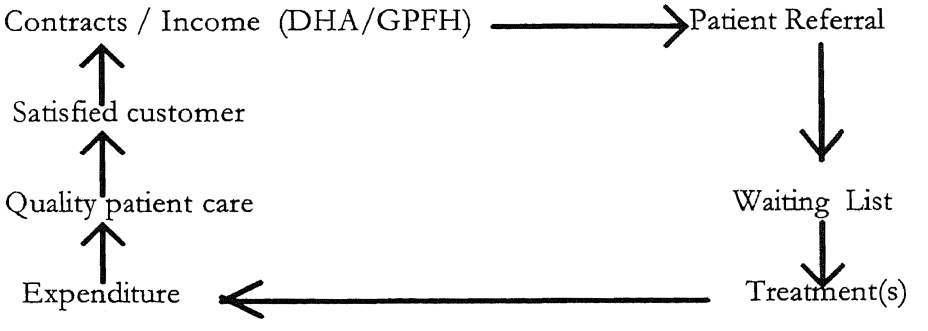
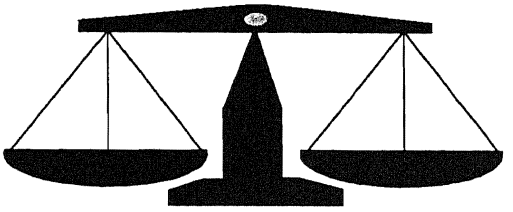


Table 12 To show the circle of income/expenditure

"Contract activity is being managed effectively and target workloads have been agreed with all clinical teams to reflect the workload for which purchasers have agreed to pay. At the end of August 1993, the Unit was 3.7% ahead of scheduled activity. The guaranteed admission dates and pre-admission screening offered by the elective surgery

unit at St. Albans City Hospital are beginning to demonstrate the predicted benefits in terms of caseload and case-mix[188]." The report continued, "GPFH activity, upon which the Unit is dependent for its viability, is being effectively handled and activity to date supports the view that this model of service is proving to be very cost-effective."



Contract activity Contract demand

Figure 5 To show the balance required within hospital providers

4.9 Waiting time for surgery

The time between the waiting list date (the date that the patient was seen in outpatients and a decision taken that surgical intervention was required), and the admission date, can be described as the waiting time for surgery. The following is a breakdown of the actual waiting time by the patients who proceeded to undergo surgery at both hospital sites.

Divided into sites, elective and acute, it can be seen that the majority of patients (96.482% overall), underwent their operation within one year of being placed on the waiting list, although a number of patients waited into the eighteen month and beyond.

Table 13 To show the waiting time in days for patients at elective unit

	ELECTIVE UNIT	
WAITING TIME (DAYS)	NUMBER PATIENTS	%
0 - 365	12406	95.836%
365 - 547	510	3.9397%
more than 547	29	0.224%
TOTAL	**12945 PATIENTS**	**100%**

[188] Progress Report 1993 North West Hertfordshire General Hospitals Unit

NB. Of the 539 patients waiting more than twelve months, only 42 (0.324%), were placed on the waiting list after January 1994, the remaining patients having been placed onto the waiting list prior to the introduction of the assessment clinic.

Table 14 To show the waiting time in days for patients at the acute site

WAITING TIME (DAYS)	**ACUTE SITE** NUMBER OF PATIENTS	%
0 - 365	3484	97.128%
365 - 547	94	2.6205%
more than 547	9	0.2509%
TOTAL	**3587**	**100%**

These records identified a group of patients with no known waiting list date, it transpired that these patients were admitted as Private Patients or directly to the wards from outpatient departments for urgent surgery.

Table 15 To show the total number of patients with waiting time known or unknown

HOSPITAL	WAITING TIME KNOWN	WAITINGTIME UNKNOWN
ELCTIVE UNIT	12945	
ACUTE SITE	3587	
PRIVATE PATIENTS		349
ADMIT TO WARD FROM OUTPATIENTS		228
TOTAL	**16532**	**577**

The Conservative government introduced Patients' Charter League Tables in 1993, which were to measure the performance of the hospital and ambulance services with respect to certain defined criteria. They were designed to be a comparative performance guide between hospitals nationally. The data relating to the number of patients seen in out patients within thirty minutes of the appointment time has consistently improved from 65% to 83% during the four years of figure keeping. The 'operations cancelled' data assumes that patients can

and will be cancelled, the data being based upon the number of patients not having their admission within one month of having been cancelled for the second time.

Table 16 To show the performance table relating to outpatient appointments and cancellations from 1993 - 1997

	93/94	*94/95*	*95/96*	*96/97*
Outpatients appointments[189]	65%	75%	81%	83%
Operations cancelled[190]	56%	0%	0%	discontinued data

The waiting time for surgery was reduced to within three months during the period of the study, from an average of 59.7% in 1993/4 to 87% in 1995/6, this reduced slightly in 1996/7 to 79%. The number of patients admitted within twelve months of being placed on the waiting list increased in the same time span from an average of 90% in 1993/4 to 100% in 1995/6.

[189] Outpatient Appointments % of patients seen within 30 minutes of appointment

[190] Number of patients not admitted within one month of having admission cancelled for second time

Table 17 To show the performance table relating to admission for surgery within 3 and 12 months from being placed on the waiting list

	Waiting times[191]				Waiting times [192]			
Year	93/4	94/5	95/6	96/7	93/4	94/5	95/6	96/7
OVERALL			87%[193]	79%[194]			100%	100%
General Surgery	64%	66%	79%		90%	90%	100%	
Orthopaedic	50%	60%	85%		85%	93%	100%	
Urology	73%	65%	75%		94%	95%	100%	
ENT	52%	63%	86%		92%	92%	100%	
Ophthalmic	-	28%	73%		-	75%	100%	

4.10 Admission with no prior assessment

Those patients expected for admission with no prior assessment, total 12671 patients, less 53 patients treated at the GP unit, that is 12618. Their age range was from 14 - 97, with a mode of 74yrs, mean of 54yrs. The sex mix was 57.2% male to 42.8% female.

Patients admitted to acute hospital 3859 (30.5%), included those due to undergo complex major surgical procedures, while in general, those being admitted to the elective unit 8759 (69.1%), were for lesser procedures. No patient attending the endoscopy suite for day case examination were included in the assessment clinic, as the procedures are performed under local anaesthetic, and therefore present only a slight anaesthetic risk to the patient, but their numbers are included in this category of no prior assessment, at both hospital sites. Attendance for endoscopic procedure is high.

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[191] % of patients admitted within 3 months of being placed on the waiting list

[192] % of patients admitted within 12 months of being placed on the waiting list

[193] % figure overall

[194] % figure overall

Table 18 Number of patients treated within each speciality on both sites with no prior assessment

SPECIALITY	*ELECTIVE SURGICAL UNIT* *PATIENT NUMBERS*	*%*	*ACUTE SITE* *PATIENT NUMBERS*	*%*
General Surgery	2652	30.3%	2489	64.5%
Orthopaedics	3185	36.4%	708	18.3%
Urology	2132	24.3%	371	9.6%
ENT	734	8.4%	115	2.9%
Ophthalmic	56	0.6%	176	4.6%
TOTAL PATIENTS	**8759**	**100%**	**3859**	**100%**

TOTAL NUMBER OF PATIENTS = 12618

4.11 The age range of patients treated

There is a similar age range for patients treated on each site, although there are a greater number of older patients are treated at acute site (Figure 6 To show age range for patients treated at the elective unit Figure 7 To show age range of patients treated at acute site Figure 8 To show the age range of patients seen in assessment clinic).

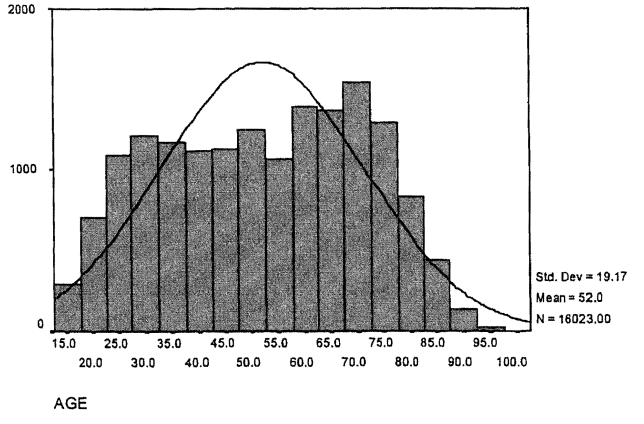


Figure 6 To show age range for patients treated at the elective unit

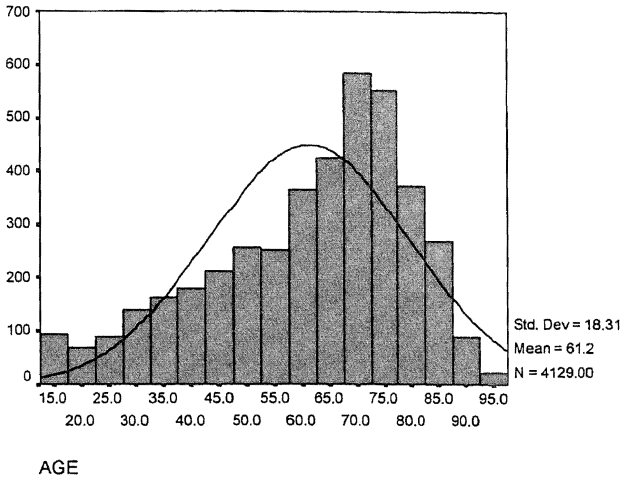


Figure 7 To show age range of patients treated at acute site

Although in general, patients due for surgery at the Elective Surgical Unit were asked to attend for assessment, more than twice the number of patients were treated at both sites without assessment. In essence this means that those treated at the elective unit without assessment, were those patients undergoing non major procedures including endoscopy (see Table 9 Criteria for Selection of patients for Assessment).

The group of patients most likely to require medical/anaesthetic support attend the assessment clinic; as a result the majority of patients being admitted without assessment are young or, those undergoing minor day case procedures often under local anaesthetic. For the patients having no prior assessment and treated at elective unit, 8114 (92.6%) proceeded with surgery as planned. The remaining patients either failed to arrive at the hospital on the day of admission 174 (4.5%), or surgery was not deemed suitable or appropriate at that time. Ninety eight patients were medically unfit to proceed with surgery, 1.1%. Two patients were transferred to acute site following surgery due to medical concerns.

CHAPTER FIVE

PATIENTS ATTENDING ASSESSMENT CLINIC

This chapter is concerned with the outlining the data collation, with specific detailed reference to those patients seen in the assessment clinic and patient outcomes as a result of that assessment.

5.0 Difficulties with data collection

Data was obtained from two sources, the assessment clinic and the hospital information department. The patient data collection began in January 1994, and ended in June 1996, a thirty month period. Subjects were patients due for admission to adult surgical wards for elective surgery. Gynaecological procedures were excluded as these patients were treated in a dedicated gynaecology and obstetric unit.

Surgical specialities included in this study are noted below together with the number of patients treated.

Table 19 To show the specialities, and number of patients included in the study

	NUMBER OF PATIENTS	
ORTHOPAEDIC	7229	35.8%
GENERAL SURGERY	7100	35.1%
UROLOGY	3585	17.7%
EAR NOSE & THROAT	1889	9.3%
OPHTHALMIC	402	2.0%
TOTAL	**20205**	**100%**

During the thirty months, some 20205 patient episodes were recorded by the hospital Information Department as having been placed on the surgical waiting list, 62.7% (12671

patients) had no assessment, and for 37.3% of the patients, 7540 appointments were sent, requesting attendance for assessment prior to their admission. The age range of patients was 14 years to 98 years with a distribution curve skew to the right (older age).

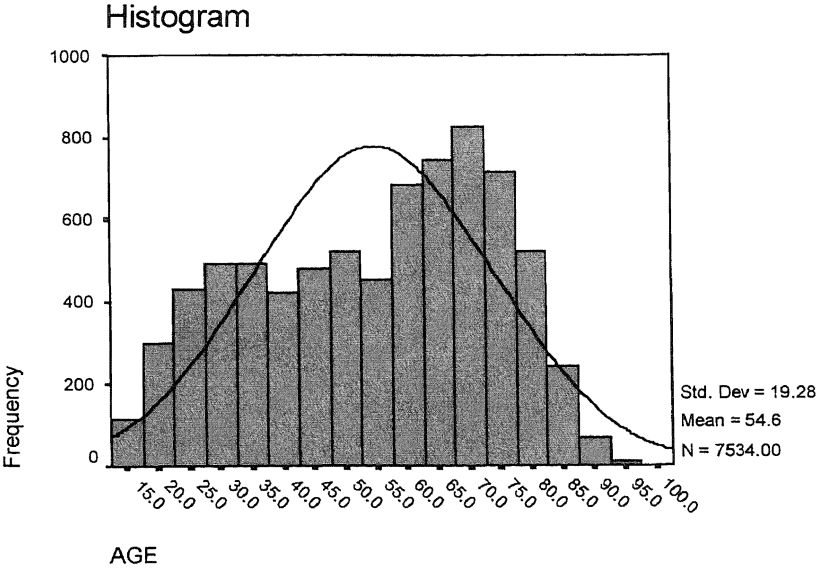


Figure 8 To show the age range of patients seen in assessment clinic

Patients expected to undergo procedures at the acute site total 4129, (20.43%); at the elective surgical unit 16023 (79.30%); and a local general practitioner run unit with a few day surgery beds, 53 (0.262%).

SEEN BY * SITE Crosstabulation

Count

		SITE			
		ACUTE site	ELECTIVE site	GP	Total
SEEN BY	NO ASSESSMENT	3859	8759	53	12671
	NURSE SPECIALIST	9	2635		2644
	DOCTOR	4	4507		4511
	SEEN & DEFERRED BY NURSE	100	37		137
	SEEN & DEFERRED BY DOCTOR	157	85		242
Total		4129	16023	53	20205

Table 20 To show the number of patients admitted to each site either assessed or not assessed

The same chart less those 53 patients admitted to GP unit

SEEN BY * SITE Crosstabulation

Count

		SITE		
		ACUTE SITE	ELECTIVE SITE	Total
SEEN BY	NO ASSESSMENT	3859	8759	12618
	NURSE SPECIALIST	9	2635	2644
	DOCTOR	4	4507	4511
	SEEN & DEFERRED BY NURSE	100	37	137
	SEEN & DEFERRED BY DOCTOR	157	85	242
Total		4129	16023	20152

There were data difficulties which were overcome in order to create the database.

- There are 20205 patient episodes.
- There were 7155 patients who attended the assessment clinic.
- 388 of these patients were deferred from assessment and hence admission
- The same 388 patients were admitted for the same planned procedure at a later date without further assessment, hence these 388 patients appear twice in the total of 20205.

Data was also obtained from the operating lists at both sites with regards the patient proceeding or not proceeding with surgery. Patients are sent their admission letter up to one month in advance of admission thus providing time for any patient to contact the hospital to cancel their surgery. At the elective site, the operating list is written two days in advance of the surgery. Any late patient cancellation - that is within 48 hours of surgery - and details of any other changes are then noted upon the operating list. At the acute site theatre lists are written on the day of surgery, after the majority of patients are in and confirmed as proceeding with their operation. The difference means that patients who cancel late are not recorded upon the operating list and no other record is kept. The reason for the difference at the acute site is due to the difficulty in providing a bed for the patient - since acute admissions from accident and emergency take priority over routine elective surgical cases, and the number of beds available is limited. This will mean that the patient due for elective surgery, unless the surgery is of an urgent nature, such as carcinoma, will have their surgery cancelled if an emergency admission arrives and requires admission from Accident & Emergency Department. Therefore, for the purposes of this study, patient numbers for late cancellations are only available for elective site.

Assessment clinic data included the patient hospital number, and consultant, their expected length of stay, sex, age, identification of the assessor, the outcome of the assessment, diabetes, planned operative date if known, site of surgery and details of cancellation of surgery.

For those patients seen in the assessment clinic, 7155, the hospital information department data included the patient hospital number, consultant, age, sex, waiting list date, admission and discharge date, together with diagnosis, the length of stay.

Initially all data was in paper format, but in 1995, was transferred into an Excel spreadsheet. The amalgamation of data (assessment clinic data, hospital computer data and hand written comments within hospital notes) was lengthy and fraught with many difficulties and obstacles. Excel on which the assessment data was prepared is a spreadsheet, but did not allow for one sheet to be amalgamated with another, only replaced by another spreadsheet. The amalgamation of these two databases would require SPSS.

With assistance from staff at the university the two groups of information, (which filled six floppy discs), were put onto one file. However, this exercise resulted in the scrambling of data from the assessment records. The exercise had to be repeated. Working full time, then travelling to the university and being restricted to working within university hours of Monday - Friday 8-6, became difficult and frustrating, a computer would be required for home use, and SPSS purchased (no licence would be given from the university to allow the use of SPSS at home). The hospital computer to which there was access had too small a memory to accommodate SPSS, and the software would have to be purchased for individual use only, that is personal purchase, not by the hospital information technology department. No financial resources were available for the study, a word processor with word processing software and SPSS software had to be purchased and was installed in November 1996.

Initial findings/problems with the data.

- Twenty seven per cent of the patients attending for the assessment did not proceed to admission, therefore for each of these patients an individual patient search of notes and/or hospital computer derived information had to be undertaken to identify if admission occurred at a later date, if another assessment was organised and so on.

- Data was not easily obtained as to the reason patients did not attend the clinic or attend for admission, and was dependent upon the admission officer recording the reason on the patient administration system (hospital computing system). Individual searches were required of patients' clinical notes.

- Individual searches of patients' notes was to take eight months to complete due to notes being out for clinic appointments, with secretaries or not available for other reasons, and time resources between clinic duties.

- Many patients cancelled their admission, or changed the dates of surgery, reasons for and dates of these occurrences are not noted, patient identification would not be possible without the detail from the assessment clinic data.

- No record was kept on the reasons for patients failing to proceed with surgery. This detail necessitated the searching of individual patient records to identify the cause and often it was not listed.

- If a patient cancels the operation prior to arrival on the ward, this detail is often not recorded. Again, individual searches were undertaken to identify these occurrences, which were noted only by those patients who had been cleared for admission by the assessment clinic, and yet no record of their attendance for surgery could be found on the Information Department records.

- The waiting list date on the hospital system was after the assessment clinic date in many instances. The change of the waiting list date was due to the patient cancelling or requesting suspension of admission. Linking of the records was required to ensure that the details of previous admission attempts had indeed occurred.

- Due to the two hospitals amalgamating in 1993, some patients had records on both sites, having attended both hospitals on different occasions. These notes were made into one set of notes, on occasion the attendance at the assessment clinic had been under the opposite hospital number. Careful searching of records identified the new number and appropriate changes were made to ensure correct patient identification.

5.1 Patients seen in the assessment clinic

For the purposes of this study a doctor or a nurse saw the patients in the assessment clinic. This enabled a comparison to be undertaken of the outcomes which ensued. A breakdown of the group of patients asked to attend the assessment clinic is detailed below. See Table 21.

During the thirty months of the study, 7540 appointments were sent out to 7155 individual patients to attend the assessment clinic. A doctor saw 4511 patients (from January 1994 to end of study in 1996), and the specially trained nurse 2644 patients (from August 1994 to end of study in 1996). Not all the patients attended the clinic, and not all were accepted for admission.

Table 21 To show the distribution of patients seen by nurse and doctor

	NURSE		DOCTOR		TOTAL
GENERAL SURGERY	1071	40.6%	805	17.9%	1876
ORTHOPAEDIC	127	4.9%	2980	66.1%	3107
UROLOGY	618	23.3%	369	8.1%	987
EAR NOSE & THROAT	674	25.5%	341	7.6%	1015
OPHTHALMIC	154	5.8%	16	0.4%	170
TOTAL	2644	100%	4511	100%	7155 100%
SEX MALE/FEMALE	61.2%	38.8%	50.4%	49.6%	

The age range of patients is similar for both nurse and doctor, 14 - 98yr.,mode 70yrs, St.Dev 19.72 for nurse, and 14 - 94 for doctor, mode being 68, St.Dev 18.97. The nurse saw 61.2% male patients, compared to 50.4% by the Doctor, this is attributable to the number of urology patients being seen by the nurse.

The number of patients asked to attend the assessment clinic during the thirty months are detailed on the following three line charts according to their speciality. (See Figure 9, Figure 10, Figure 11).As can be seen, urology patients were not indicated separately during 1994. This was due to their being no specific urology consultant until later in the year, and the urology was undertaken by the general surgeons. Ear Nose and Throat assessments were begun in September 1994, and Ophthalmic patients not until 1995. Figure 11 is the data for those patients attending assessment clinic in 1996. Although for the purposes of this study

the patient outcomes conclude with June 1996, it can be clearly seen how the number of patients attending the clinic is dramatically reduced from September of that year - the reason for this is that the work undertaken in the previous months exceeded the expectation of the GPFH and a direct instruction was issued from several practices that the number of patients' treated should be restricted to urgent cases only and those for whom specific funding would be allocated. This clearly demonstrates the difficulties encountered by General Practitioner Fund Holders (GPFH), with regards income, and the demands which the contractors or health purchasers are able to place upon the provider. The capability to provide care is evident in the number of patients receiving treatment during the preceding thirty months, yet with the income not following the treatment further patient episodes were curtailed. With the new financial year of April 1997, an increase in the amount of work being undertaken was again noted, and 1998 proved to be the largest throughput to date.

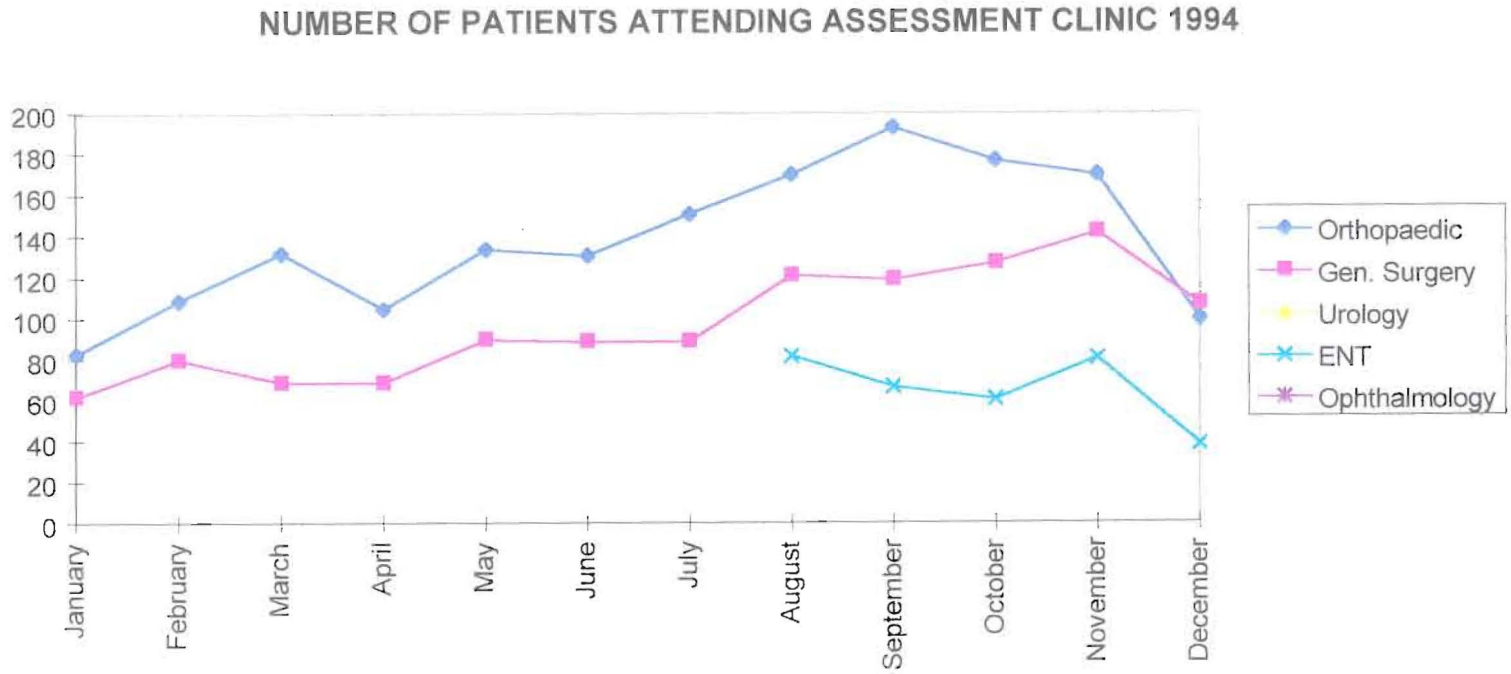


Figure 9 Number of patients attending assessment clinic 1994

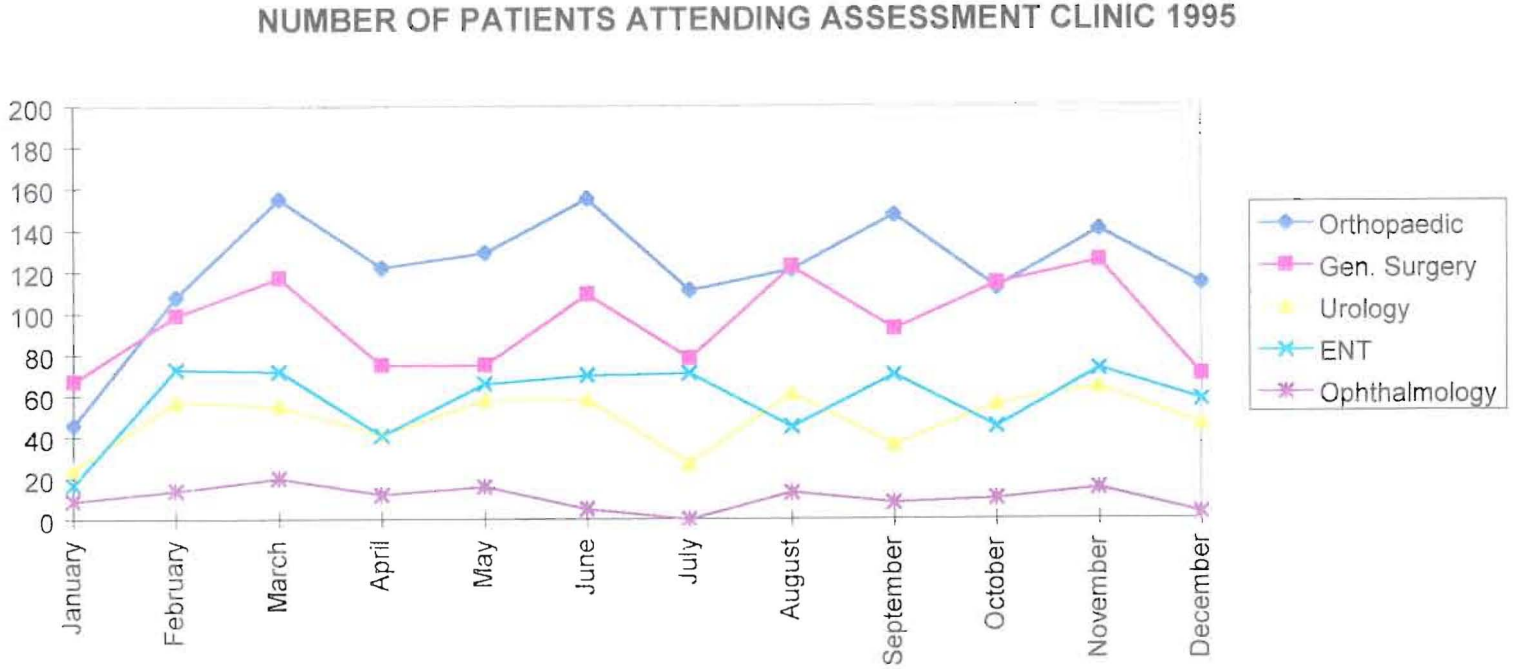


Figure 10 Number of patients attending assessment clinic 1995

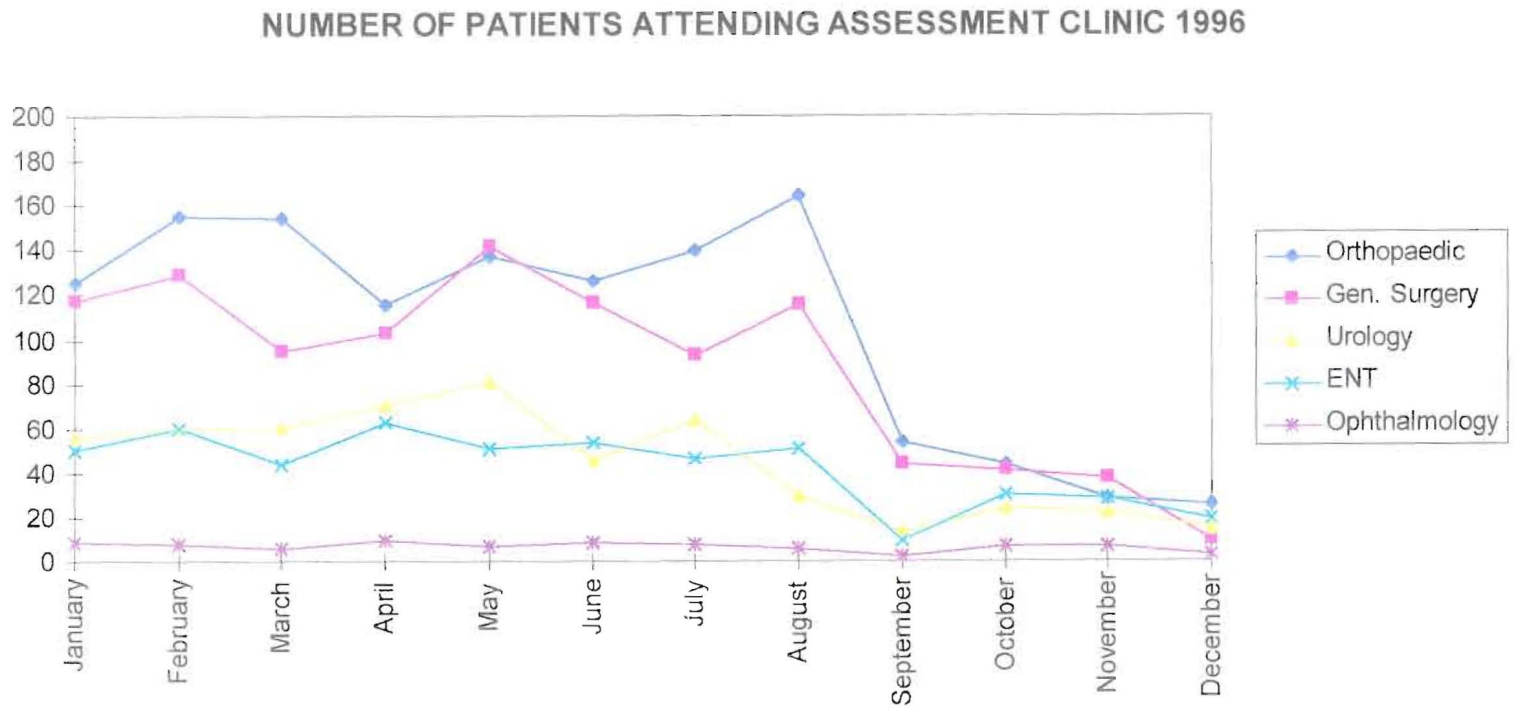


Figure 11 Number of patients attending assessment clinic 1996

5.2 Assessment outcomes

The outcomes of the patient attending assessment clinic fall into five main groups.

1. Admit to the Elective Surgical Unit.

2. Admit to the Acute wards.

3. Medically not fit for surgery OR social problems, may require immediate admission or referral to general practitioner on an urgent basis.

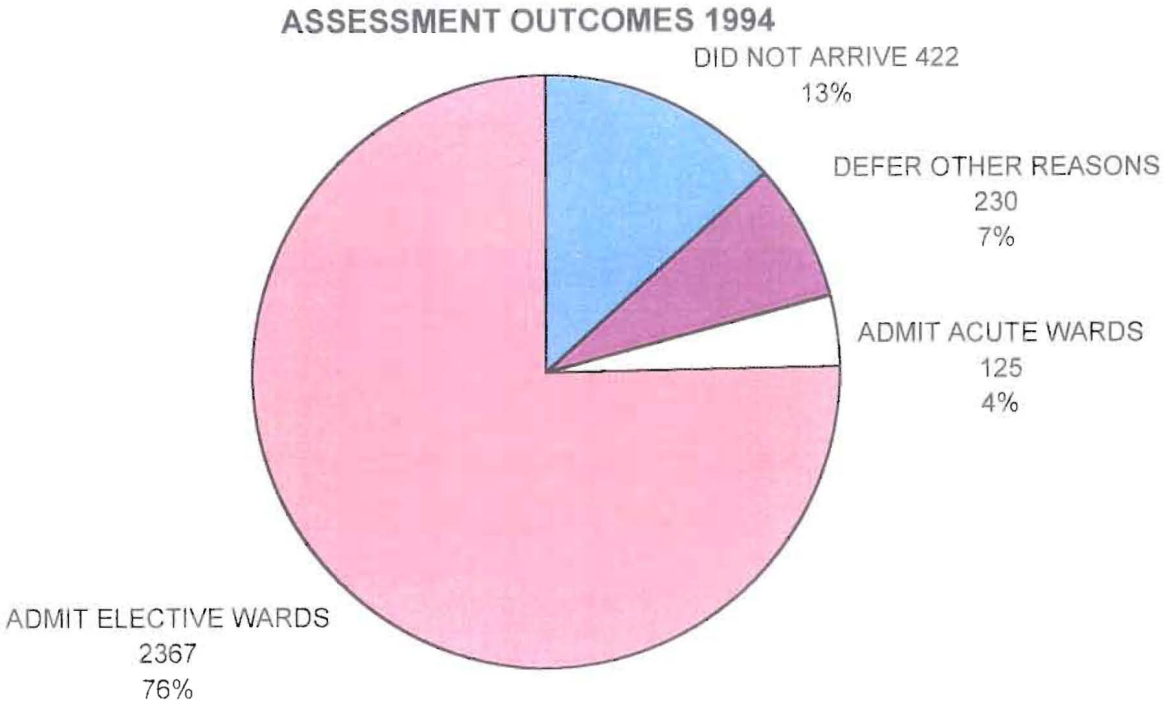
4. Patient did not or could not arrive, including those requesting a suspension to delay admission date.

5. Patients who do not require surgery at present time or whose condition has altered to necessitate further investigations and were deferred for outpatients follow up.

The outcomes from the assessment clinic are displayed in pie charts for the years 1994, 1995, and 1996 Figure 12

Figure 13 Figure 14. The pie charts display at a glance the number of patients who were accepted for admission from the assessment clinic, and the significant groups of patients who were not cleared for admission, for the reasons as outlined above. Each of these outcomes will be looked at individually. (See Table 22 Outcome from Assessment). For full breakdown of the outcomes see Appendix 9,10.

Figure 12 To show total patient outcomes from assessment



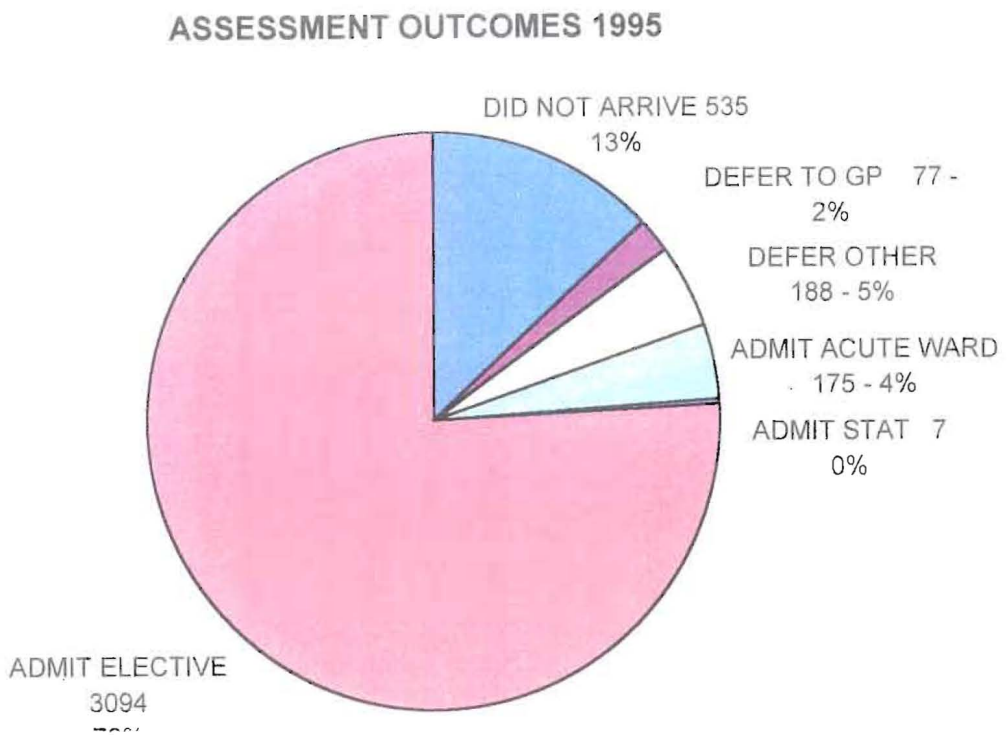


Figure 13 To show the assessment outcomes for 1995

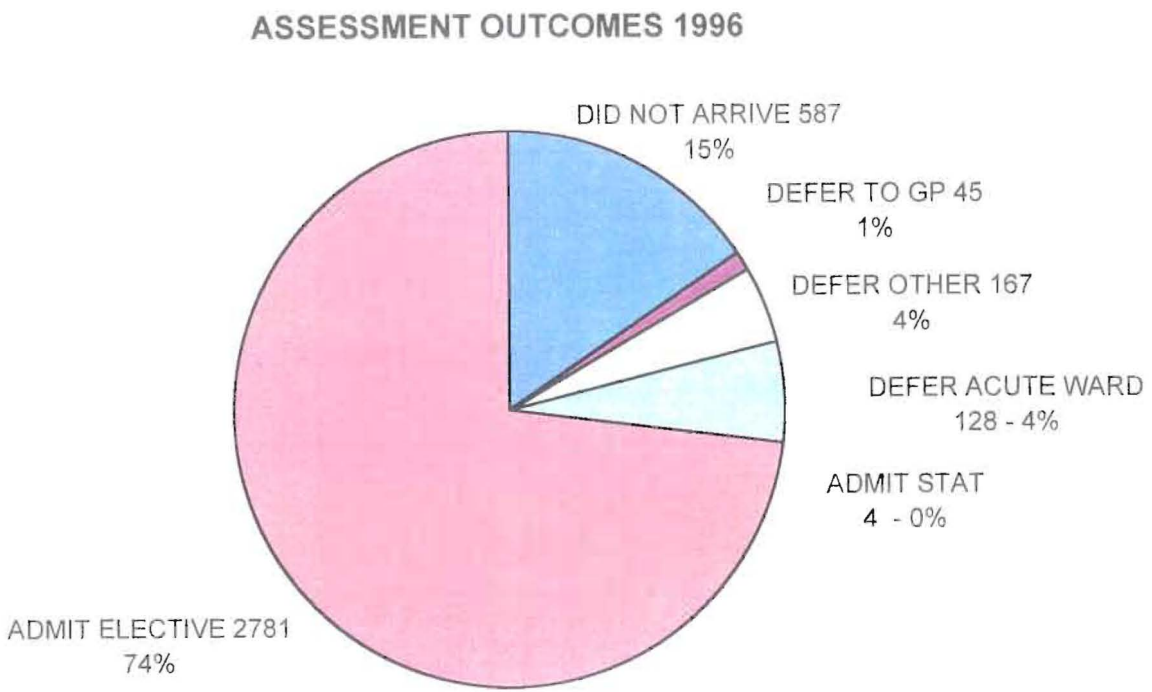


Figure 14 To show the assessment outcomes for 1996

Table 22 To show total patient outcomes from assessment

	NURSE		*DOCTOR*		**TOTAL**	
ADMIT ELECTIVE WARDS	2005	76%	3226	71.5%	**5231**	**73.1%**
ADMIT ACUTE WARDS	125	4.7%	201	4.45%	**326**	**4.57%**
DEFER TO GP	61	2.3%	126	2.8%	**187**	**2.61%**
PATIENT CANCELLED	399	15.1%	709	15.7%	**1108**	**15.5%**
DEFER TO OUTPATIENTS	54	2.0%	249	5.52%	**303**	**4.23%**
TOTAL	**2644**	**100%**	**4511**	**100%**	**7155**	**100%**

5.3 Cleared fit for admission to elective surgical wards

In all, 5231 (73.1%) patients were cleared for admission. The patients were categorised according to the American society of Anaesthesiologists categories (ASA)[195] 1 or 2. It was anticipated that following surgery no additional medical, surgical or anaesthetic intervention would be required other than routine post operative care; that the patient, having the admission discussed in advance, would be aware of their recovery expectations, including length of stay in hospital, and therefore have discharge arrangements planned. Where appropriate received attention from the multi-disciplinary team in order to ensure that the individual is admitted with special support for their individual requirements.

5.4 Deferred for admission to acute wards

Table 23 To show the patients deferred to acute wards

	NUMBER OF PATIENTS	
ORTHOPAEDIC	144	44.2%
UROLOGY	94	28.8%
GENERAL SURGERY	61	18.7%
EAR NOSE & THROAT	23	7.1%
OPHTHALMIC	4	1.2%
TOTAL	**326**	**100%**

This shows the 326 patients (4.55%) of the 7155 patients asked to attend the assessment clinic. Patients admitted to the acute wards were on the whole those who had medical concerns which were of moderate to severe nature, or of an unstable nature, and were an anaesthetic risk ASA 3 or 4. It was therefore felt that surgery should be carried out at the Hemel Hempstead site where the support from the acute medical Consultants, Intensive Care and Coronary Care units were available 24 hours a day.

[195] American Society of Anestheologists scoring to select patient suitability for safe anaesthetic. ASA1 - no systemic disease ASA2 mild to moderate systemic disease - controlled ASA3 uncontrolled systemic disease or multiple systemic diseases, ASA4 severe systemic disease, ASA5 moribund

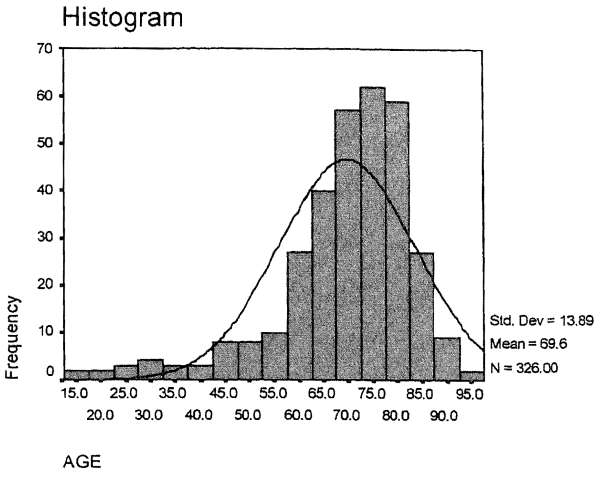


Figure 15 To show the age range of patients deferred to acute wards for surgery

The patients were aged 15 - 94 years of age, and not unexpected, the distribution curve showed a marked skew to the right. The majority (114 patients or 44.2%) were deferred to the acute wards were from the speciality of Orthopaedics, followed by 94 patients (28.8%) for Urology.

5.5 Deferred to general practitioner

Table 24 To show patients whose surgery was deferred for medical/social reasons

	PATIENT NUMBERS	
ORTHOPAEDIC	90	48.1%
GENERAL SURGERY	48	25.7%
UROLOGY	31	16.6%
EAR NOSE & THROAT	16	8.6%
OPHTHALMIC	2	1.1%
TOTAL	**187**	**100%**

145 (2.6% of 7155 patients seen in the clinic) patients were deferred to their General Practitioner. 92 (1.3%) due to previously undiagnosed or untreated hypertension (raised blood pressure), 36 (0.5%) who had cardiovascular problems which had been unknown prior to the assessment, but would require urgent medical attention. Eleven (0.1%), were

admitted immediately from the clinic into a bed on either site due to urgent medical concerns, deep vein thrombosis and severe anaemia. Another 11 patients (0.2%), were unable to be admitted due to infections, ulceration of legs, or social problems which would mean that discharge could not be planned. The remaining 42 patients (0.6%) were referred back to their GP for multiple small reasons, such as infections, or awaiting other medical opinions for unrelated condition(s).

5.6 Failed to arrive for assessment

Table 25 The number of patients who failed or could not arrive for assessment

	NUMBER OF PATIENTS	
ORTHOPAEDIC	499	45.0%
GENERAL SURGERY	287	25.9%
UROLOGY	101	9.1%
EAR NOSE & THROAT	210	19.0%
OPHTHALMIC	11	1.0%
TOTAL	**1108**	**100%**

This group includes those patients 1108 (15.48%) of 7155 asked to attend the assessment clinic, who did not arrive, that is were expected but did not attend for their appointments 791 patients (11.1%), together with those who informed the admission office that they could not arrive 281 patients (3.9%), or who wished their surgery to be postponed or cancelled 36 (0.5%). This significant group of patients would have been expected to arrive for surgery if the assessment clinic had not been in place, and would have therefore had a large impact upon the operating list.

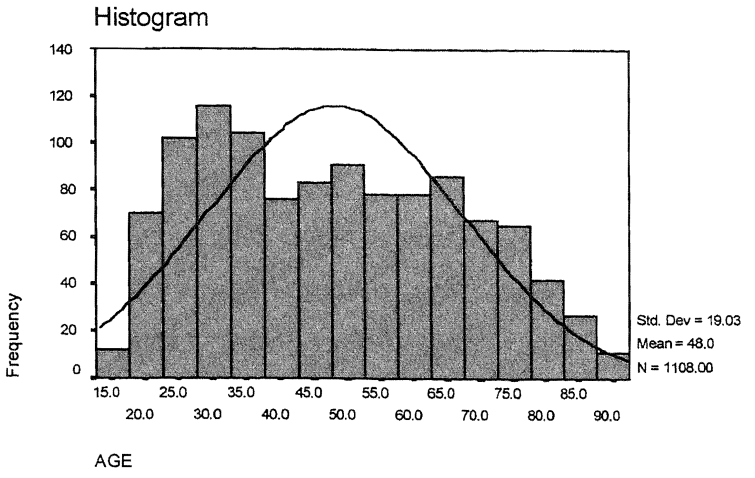


Figure 16 To show the age of patients who failed to arrive for their assessment

The patients tended to be of a younger age range than the other groups of patient outcomes, being 14 - 92 years of age with a skew to the left on the distribution curve. One can but speculate on the reasons why patients fail to attend appointments. Certainly, more patients were of the younger age, and possibly these patients move house more frequently, travel to university and will therefore be less likely to attend hospital appointments if change of address details have not be given to the hospital. Did length of time on the waiting list have any bearing on the failure to arrive rate? Often the patients were for minor surgery, perhaps the initial reasons for medical advice having changed during the wait for admission, such that symptoms have improved, or the patient has had surgery elsewhere.

PATIENTS' WHO DID NOT ARRIVE

Following assessment, the patient may or may not be admitted, 75.8% of those seen by the nurse were cleared as fit for admission at the elective surgical unit, and 71.5% by the doctor. A number of patients were cleared as suitable for treatment on the acute wards at acute site, 4.4% for those seen by nurse, 4.3% by doctor. A significant proportion of patients failed to arrive, or "did not attend", for their appointment, 11.4% for the nurse, 10.9% for the doctor.

Due to the number of patients being seen in the clinic who were not suitable for, or who did not wish to continue with, treatment the numbers of patients on the waiting list was reduced. As a result the waiting time for surgery was shorter. This in turn resulted in

the number of patients who did not arrive being lower at the end of the study compared to the number who failed to arrive at the beginning.

There were 589 (6.7%) patients due for admission in the elective unit who had previously been asked to attend the assessment clinic but had failed to arrive for their appointment. Patients due for admission in the elective unit, who failed to arrive for their assessment were called a second or third time. On attendance 145 patients 24.6% of this group were ultimately deferred to the acute site for admission.

Owing to the large number of patients who did not arrive changes were made to the instructions within the letter requesting that the patient attends for the assessment. A statement to the effect that no patient would be admitted for surgery until they had attended for their assessment, and, although a date was provided for the assessment, the patient was required to telephone for the time of the appointment.

5.7 Deferred to outpatients, not currently requiring surgery

These patients had been on the waiting list for up to eighteen months.

Table 26 To show the number of patients deferred to outpatients

	NUMBER OF PATIENTS	
ORTHOPAEDIC	235	77.6%
GENERAL SURGERY	36	11.9%
UROLOGY	20	6.6%
EAR NOSE & THROAT	11	3.6%
OPHTHALMIC	1	0.3%
TOTAL	**303**	**100%**

Each patient had been seen by a Consultant or Registrar in outpatients and placed on the waiting list. On arrival in the assessment clinic it was noted that the condition of 303 patients (4.2%), should not proceed to surgery due to changes with the presenting complaint.

136 (1.9%) deferred for review at a later date to own consultant

4 (0.1%) treated in the clinic

34 (0.5%) deferred by own consultant

96 (1.3%) removed from waiting list by own consultant

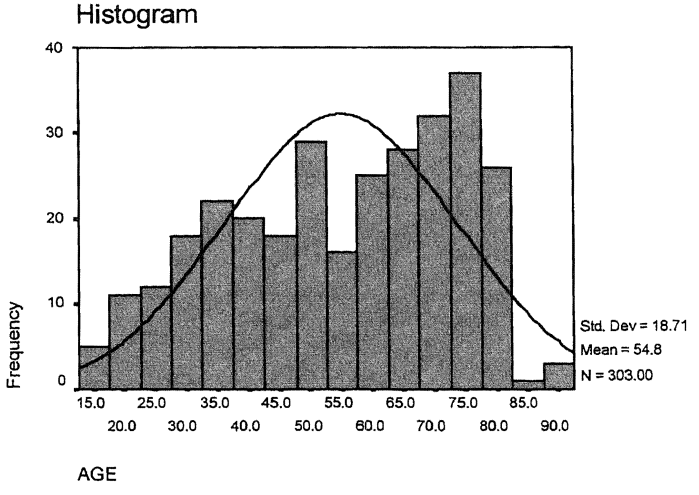
6 (0.1%) suspended on waiting list by own consultant

9 (0.1%) removed from waiting list not seen by own consultant

18 (0.3%) required additional investigations prior to surgery.

The age range 14 - 89 with a strong skew to the right on the distribution curve. Fifty four (0.75%) were seen by the nurse, 249 (3.48) by the doctor. The nurse not being medically qualified, would be unable to provide the medical treatment within the assessment clinic, and (unless for overriding reasons) would not be disputing the operation planned as decided in outpatients department. The majority of the orthopaedic patients being deferred were seen by the Consultant in the assessment clinic, and it was he who either suspended or deferred their surgery.

Figure 17 To show the age of patients whose surgery was deferred



5.8 Cancellation of operation

An operating list is planned several times before the list is formalised, when it is then sent to the appropriate parties. In the planning stage, patients are contacted and asked to arrive for surgery, and/or assessment, but cancel sufficiently early that a replacement patient can be

found to fill the list. These patients who have cancelled often take a later date, and number 5820, their details can appear several times on an operating list. This group of patients are not included in the following details.

In 1994, 1995, 1996 the cancellation rate for elective theatre lists, irrespective of patients being assessed or not, was 8.6%, representing 1235 patients from 14273 expected on the operating lists see

Table 27.

Besides those patients medically unfit for surgery, the other categories for cancelling the operation are as follows: no bed/equipment or theatre time including no surgeon or anaesthetist; patient cancelled, either him/herself, or by the hospital; patient did not arrive. One patient had surgery privately, and another was sent to prison.

'Patients' unfit for surgery' is the one cancellation that can be affected by the assessment of patients, it is monitored through this study. The remaining cancellations are in the control of the admission officers, who will update the operation list following telephone calls with the patients.

	TOTALS
n. Patients on theatre list	**14273**
n. Patients cancelled	1235
n.(Patients cancelled as medically unfit)	(153)
n. Patients treated	**13038**

Table 27 To show the number of assessed patients on elective surgical main theatre operating lists who were cancelled, and number cancelled due to being unfit for surgery

A small number of patients underwent surgery, and following the operation for medical reasons were transferred to acute wards for close observation/intensive care. These patients number 22, showed a marked skew to the right in the distribution curve relating to age, the range being 42 - 91yrs., with equal distribution amongst the specialities of General Surgery 31.8% (7 patients); Urology 31.8% (7 patients), orthopaedic 36.4% (8 patients). Two patients had undergone no assessment, eight were seen by a nurse and twelve by a doctor. The patients were transferred as a result of more intensive surgery being required than had

been planned, and this in turn resulted in a longer anaesthetic, and hence the patient requiring additional medical/anaesthetist support in the immediate 24 hours post surgery.

5.9 Theatre time savings from assessment

During the thirty months of this study the number of patients asked to attend the assessment clinic, but who either did not arrive or were not fit for surgery, was considerable. A basic calculation demonstrates that up to 855 hours of theatre time was gained which, if the patient had been asked to arrive directly to the ward on the day of surgery would have been wasted theatre time, for reasons of their non arrival or not being fit for surgery: those patients expected for minor surgery, 20 minutes operating time was allowed for the calculation of the number of theatre hours saved: those due for intermediate surgery, 30 minutes (Cholecystectomy and Mastectomy, Discectomy), and those for major surgery 60 minutes (Total Hip and Total Knee Replacements).

EXPECTED STAY (DAYS)	NUMBER OF PATIENTS	THEATRE HOURS SAVED
1	1033	344
2	184	61
3	191	64
4	182	91
5	22	11
7	84	56
10	19	19
14	209	209
TOTAL	**1924 PATIENTS**	**855 HOURS**

Table 28 To show the expected length of stay and theatre time for those patients who were not passed as fit to proceed with surgery but who without the assessment clinic would have been expected in theatre.

5.10 Unfit to proceed with surgery

This relates to those patients who, although they require the surgery, are not medically fit on the day to proceed with the operation. This may be due to chest infection, pregnancy, or cardio-vascular concerns. The number of patients who are within this category is small, a total of 153 patients (or 1.1% from 13614 patients on the final theatre list). Of these 103 (1.2%) were not assessed, 12 (0.6%) of patients assessed by the nurse and 38 (1.2%)assessed by the doctor.

On admission, all patients will be seen by the anaesthetist to confirm that they are fit for anaesthesia. Those patients who have not attended the assessment clinic will also see a doctor to check other medical conditions. See Table 29 and Table 30). Those patients initially on the operating list are on the first line. Removing those patients who cancel after their assessment or after receipt of admission letter - but with too short notice to be replaced - gives the revised number of patients on operation list, as on line three.

Table 29 To show patients who cancelled prior to hospital admission

	NOT ASSESSED	NURSE	DOCTOR	TOTAL
PATIENTS EXPECTED	8881	2066	3326	14273
LESS PATIENTS WHO CANCELLED WITHIN 24 HRS OF SURGERY	278 3.1%	132 6.3%	249 7.4%	659 4.6%
REVISED EXPECTED	8603	1934	3077	13614

Table 30 To show the number of patients who were treated from the final operating list

	NO ASSESSMENT	NURSE	DOCTOR	TOTAL
PATIENTS ON OPERATING LIST	8603	1934	3077	13614
PATIENT CANCELLED AFTER ADMISSION	275 3.2%	40 2.0%	108 3.5%	423 3.1%
PATIENTS MEDICALLY UNFIT	103 1.2%	12 0.6%	38 1.2%	153 1.1%
PROCEDURES COMPLETED	8225 95.6%	1882 97.3%	2931 95.2%	13038 95.7%

SPECIALITY	TOTAL NUMBER OF PATIENTS	PATIENTS SEEN BY NURSE	PERCENT OF PATIENTS BY NURSE	PATIENTS SEEN BY DOCTOR	PERCENT OF PATIENTS DOCTOR	TOTAL PERCENT PATIENTS SEEN
GENERAL SURGERY	**1876**	1071	**57%**	805	**43%**	100%
ORTHOPAEDIC	**3107**	127	**4%**	2980	**96%**	100%
UROLOGY	**987**	618	**63%**	369	**37%**	100%
EAR NOSE & THROAT	**1015**	674	**66%**	341	**34%**	100%
OPHTHALMIC	**170**	154	**90%**	16	**10%**	100%
TOTAL	**7155**	**2644**		**4511**		

Table 31 To show the total number of patients seen by doctor and nurse as a percentage

5.11 Summary

The outcomes from assessment can be split into five main groups: admission; admission to the acute wards; those patients requiring immediate treatment not related to surgical condition; those who require further investigation relating to their surgical condition, and those who failed to arrive. A total of 73% of patients assessed were admitted to the elective surgical unit. 15.5% of patients either failed to arrive in the assessment clinic, cancelled, or asked for surgery to be delayed. These later patients were from across the complete age range, although they tended to be more prevalent in the younger age range. As a result, from having the assessment clinic, 1924 patients were not admitted. This represented a saving of 855 theatre hours from the patients who without the assessment clinic would have been on the operating list.

The nurse and the doctor showed similar outcomes during the assessment process for (i.) those patients with known medical conditions who are admitted for surgery from the acute wards with additional medical support, rather than in the elective surgical unit; and (ii.) those patient requesting to cancel their admission. The number of patients deferred to out-patients was more than double for the doctor compared to the nurse (2.0% for nurse, 5.52% for doctor). I would suggest that this is for the following reason. The doctor saw the majority (96%) of orthopaedic patients, and it is this category of patients in particular whose condition alters with time, either improving with physiotherapy or worsening thus requiring a change in treatment. The doctor was better able to assess changes in the need for surgical intervention.

The analysis of the data outcomes has shown that assessing patients removes from the waiting list those patients who no longer require surgery, and provides the opportunity to identify other medical conditions which could otherwise affect the outcome of surgery. Many of these conditions require management prior to contemplating surgery.

The number of patients who had been cleared for surgery by the assessment clinic, but who failed to proceed due to being unfit, is small (see Table 23 To show the patients deferred to acute wards), which shows the figures for 1996.

Assessor	No. patients	No. unfit for operation
Nurse 1	1214	13 (1.07%)
Doctor 1	986	54 (1.31%)
Doctor 2	376	4 (1.06%)
Nurse 2	201	2 (0.99%)

Table 32 To show the number of patients cleared for admission, but were found unfit to proceed with operation - Jan - Dec 1996

It is important to note that those patients selected for assessment clinic were, on the whole, those patients due to undergo major surgery: those over the age of 50 yr. of age, and those who had been on the waiting list more than eight months. Those patients due to have minor surgery and were under 49 yr. were not generally seen in the clinic. As is suggested by the urology patients, the older the patient the more likely they are to have medical concerns which could defer surgery. Yet the number of patients who were cancelled from the operating lists, having been assessed, is small compared to the number of patients cancelled not having been assessed. The clinics, whether run by nurse or doctor, reduce the number of cancellations from the operating list; and, as has been demonstrated, the outcomes of admission following a nurse assessment reduces further the length of stay that the patient remains in the hospital following surgery.

Having ascertained that the outcomes from assessment are similar for doctor and nurse, it is important to consider how the patients fared on admission. As already mentioned, the nurse would undertake a nursing and social assessment of the patients' needs; otherwise, the assessment of the medical needs was the same for the nurse and doctor. Did the patient outcome in terms of length of stay depend upon the assessor? The patient outcome can be measured in terms of their proceeding with surgery, and their length of stay for any given procedure. This will be discussed in the next chapter.

CHAPTER SIX

DATA ANALYSIS

In total, there were 20,205 patient episodes, with 17,170 completed surgical procedures. 986 different elective surgical procedures were recorded during the study. For the purposes of in-depth analysis, a few of the main procedures have been included according to the surgical speciality of care. These specific procedures have been identified by those which were most commonly undertaken, as well as the major surgical procedures. Day case procedures were excluded. The five surgical specialities will be considered individually. For a summary see Table 33.

The age range is considered in context of (i.) noting the older age range (known to have more medical problems), and (ii.) comparison of the patients admitted with no assessment (traditional admission procedure) and those with assessment - either by nurse or doctor. Overall, the age range of the 20205 patients treated at the NHS Trust are from 14 to 98 years of age, the mean being 53.88, median 56.0 and mode 74.

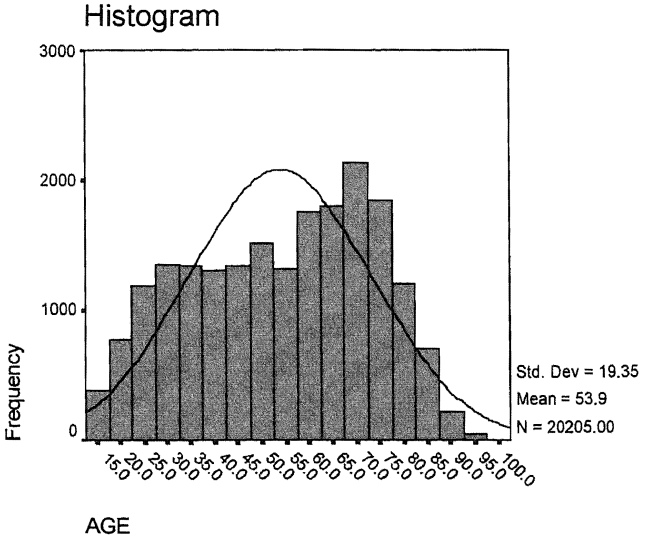


Figure 18 To show the age range of all patients included in this study

Table 33 Patient information per speciality

SPECIALITY	*CONSULTANTS*	*AGE RANGE*	*MALE/FEMALE*	*NUMBER PATIENTS*	*ACUTE WARDS*		*ELECTIVE UNIT*		*ADJOINING HOSPITAL*	
GEN SURG	4	14-97	54.5%/45.5%	7100	2545	35.8%	4555	64.0%		
UROLOGY	1	14-96	79.5%/20.5%	3585	451	12.6%	3134	87.4%		
ORTHOPAEDIC	3	14-97	47.5%/52.5%	7229	828	11.5%	6348	87.8%	53	.7%
ENT	2	14-94	55.7%/44.3%	1889	129	6.8%	1760	93.2%		
OPHTHALMIC	1	30-97	35.6%/64/4%	402	176	43.8%	226	56.2%		
TOTAL				**20205**	**4129**		**16023**		**53**	

6.1 Length of stay in hospital

The length of stay and age of patients is considered within each speciality and, more specifically, with each procedure detailed. The length of stay will then be compared in the context of non assessed and assessed patients. The actual length of stay for patients in 1992 (the year before assessment clinic commenced) was extracted by checking the records of each patient who had been admitted during 1992 for all procedures. Admission had been with no prior assessment, and therefore with no advanced opportunity to predict the individual concerns which may arrive with the patient and which could delay discharge. An average length of stay for these patients was determined, and formed the basis of initial prediction in the expected length of patient stay (see Appendix 11), until new data became available, with the onset of the changed admission process and assessment of individuals.

National rates of length of stay per procedure have not been publicised, and numerous searches have failed to find any official figures. Writing to various hospitals has resulted in one providing their average length of inpatient stay. Although assessment are undertaken within that hospital, not all patients are assessed, and the figures are an average of all patients treated, irrespective of assessment or direct admission.

PROCEDURE	ANOTHER NHS TRUST - AVERAGE STAY	STUDY TRUST AVERAGE STAY
TOTAL HIP REPLACEMENT	10.5 DAYS	11 DAYS
TOTAL KNEE REPLACEMENT	11.4 DAYS	8 DAYS
DISCECTOMY	6.9 DAYS	8 DAYS
TRANS URETHRAL RESECTION PROSTATE (TURP)	5.7 DAYS	4 DAYS
MASTECTOMY	6.3 DAYS	5 DAYS
LAPAROSCOPIC CHOLECYSTECTOMY	3.3 DAYS	3 DAYS

Figure 19 To show the average length of stay at another NHS Trust compared to study trust

At the hospital of our study, the length of stay was reduced for all conditions, from 1992 (with the traditional admission process), to 1996 with the new admission process. (see Figure 20 To compare the length of stay pre and post assessment). The null hypothesis, that the assessment clinic had no effect upon the length of stay, can be apparently discounted.

LENGTH OF STAY IN DAYS

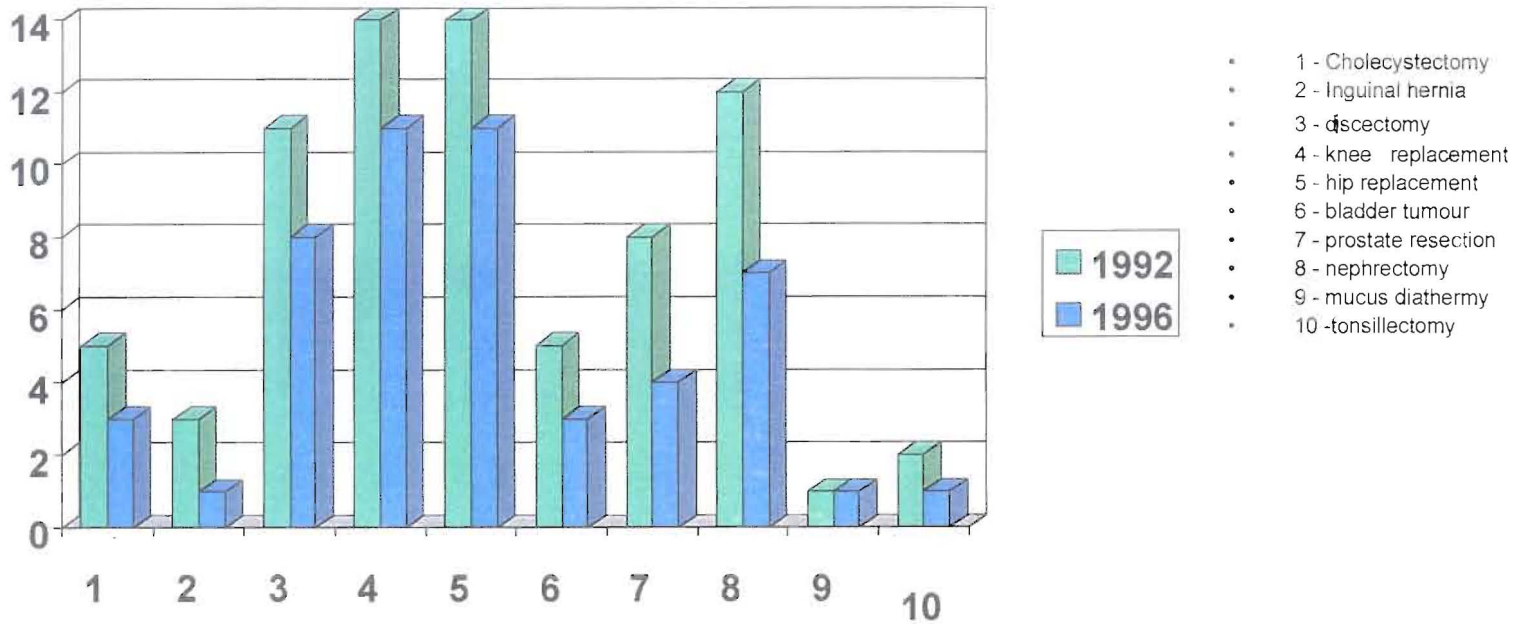


Figure 20 To compare the length of stay pre and post assessment

6.2 General surgery

A large number of patients (7100), are included within this speciality of General Surgery, representing 41% of the total number of patients proceeding with surgery. 28% of the general surgical patients were seen in the assessment clinic.

SEEN BY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO ASSESSMENT	5141	72.4	72.4	72.4
	NURSE SPECIALIST	1071	15.1	15.1	87.5
	DOCTOR	805	11.3	11.3	98.8
	SEEN & DEFERRED BY NURSE	47	.7	.7	99.5
	SEEN & DEFERRED BY DOCTOR	36	.5	.5	100.0
	Total	7100	100.0	100.0	
Total		7100	100.0		

Table 34 To show the number of patients admitted. With no assessment; with assessment by nurse; doctor; the number of patients deferred from admission

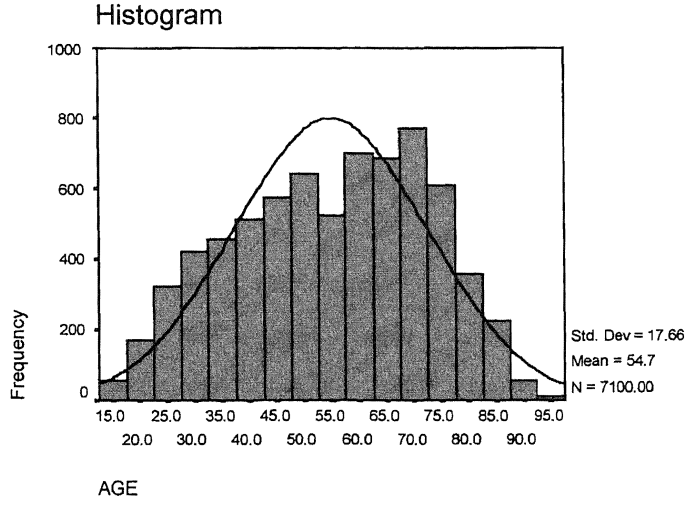


Figure 21 To show the age range of patients for general surgery

A total of 765 general surgical patients either failed to attend the assessment interview; were found unfit to proceed with surgery; cancelled their surgery; or failed to arrive for surgery.

This resulted in a total of 6343 patients who were admitted for and underwent the planned surgical procedure.

Length of stay for the general surgical patients, is significantly reduced, ($p<0.001$) for those seen in the assessment clinic, despite several patients having been deferred and admitted at a later date due to medical concerns requiring attention prior to the admission.

Group Statistics

	SEENOT	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NOT SEEN	4907	2.75	6.79	9.69E-02
	SEEN DR OR NURSE +/- DEF	1436	1.70	2.36	6.24E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	176.369	.000	5.741	6341	.000	1.05	.18	.69	1.40
	Equal variances not assumed			9.079	6183.193	.000	1.05	.12	.82	1.27

Table 35 To show the reduced length of stay in patients assessed $p<0.001$

Analysis of the following procedures, will demonstrate the numbers of patients seen or unseen, the length of stay per condition, and the age of patients together with any significance of the factors concerned. Within the speciality of General Surgery, the Cholecystectomy and Inguinal Hernia repair are discussed in detail. These two procedures have been chosen due to the number of cases treated during the thirty month period thereby providing the opportunity to note any significant findings.

"J183" Cholecystectomy

Removal of the gall-bladder. Incidence - 292 patients.

The age range of patients treated for Cholecystectomy is 73 years, from 16 yr. to 89 yr.

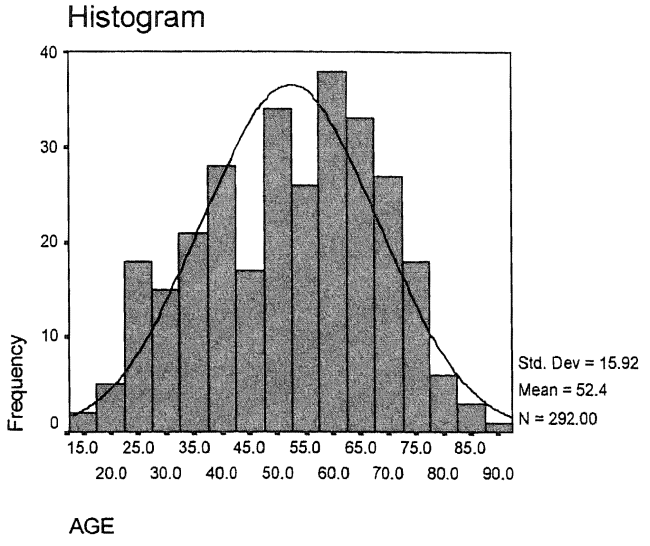


Figure 22 To show the age range of patients admitted for Cholecystectomy

79% of patients' (230) were treated in the elective surgical unit, the remaining on the acute wards.

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	76	26.0	26.0	26.0
	FEMALE	216	74.0	74.0	100.0
	Total	292	100.0	100.0	
Total		292	100.0		

Table 36 To show the sex of patients undergoing Cholecystectomy

SITE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ACUTE SITE	62	21.2	21.2	21.2
	ELECTIVE SITE	230	78.8	78.8	100.0
	Total	292	100.0	100.0	

Table 37 To show the hospital of choice for cholecystectomy

By far the majority of patients, (74% 216) were female, and the majority of patients were treated at the elective unit, (78.8% 230) patients.

41 per cent (122) of patients undergoing Cholecystectomy had no prior assessment. Of the remaining patients 32% (94) saw the nurse. 8 were deferred, and 1 who was admitted immediately from assessment clinic. 26% (76) saw the doctor, who deferred four.

SEEN BY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO ASSESSMENT	122	41.8	41.8	41.8
	NURSE SPECIALIST	85	29.1	29.1	70.9
	DOCTOR	72	24.7	24.7	95.5
	SEEN & DEFERRED BY NURSE	9	3.1	3.1	98.6
	SEEN & DEFERRED BY DOCTOR	4	1.4	1.4	100.0
	Total	292	100.0	100.0	
Total		292	100.0		

Table 38 To show the number of patients admitted for cholecystectomy

LENGTH OF STAY FOR CHOLECYSTECTOMY

The expected length of stay, as anticipated in the assessment clinic, had been 15 patients for one day, 6 patients for two days, 109 patients for 3 days and 25 patients for 4 days, 2 patients at 5 days, and 6 patients who were deferred for further treatment prior to admission. The mean expected length of stay was 3 days.

The actual length of stay varied, between 1 day to 35 days, the mean being 3.8 and the mode 3 days.

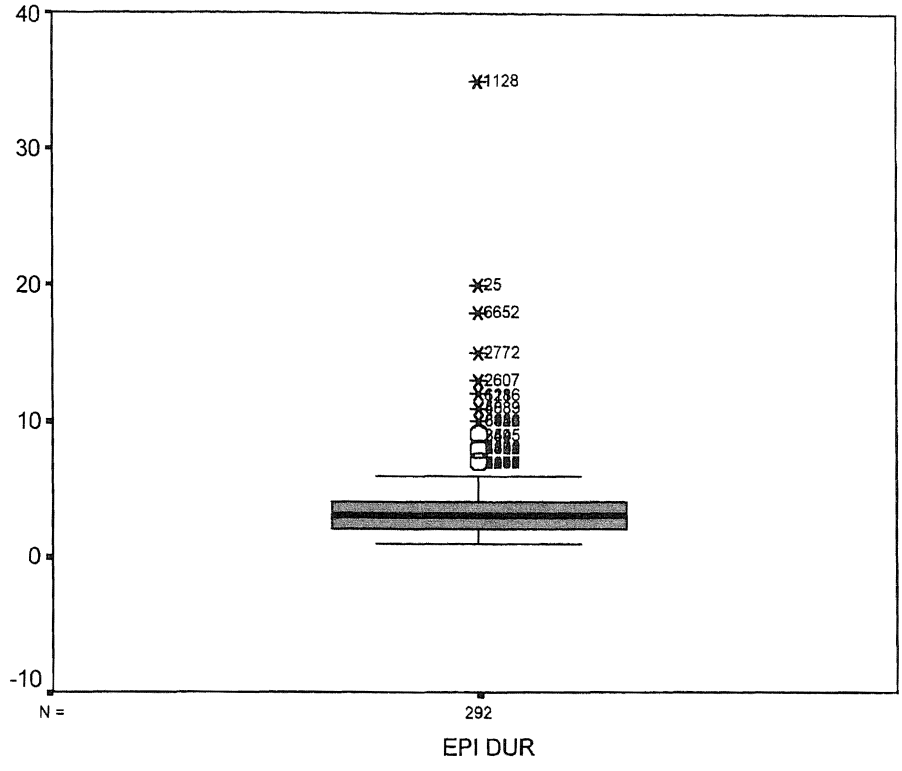


Figure 23 To show the length of stay per patient as a box plot

NB. The numbers next to the asterix Figure 23 To show the length of stay per patient as a box plot, refer to the identification marker within the analysis data, not numbers of patients.

EPI DUR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	27	9.2	9.2	9.2
	2	68	23.3	23.3	32.5
	3	80	27.4	27.4	59.9
	4	54	18.5	18.5	78.4
	5	21	7.2	7.2	85.6
	6	13	4.5	4.5	90.1
	7	8	2.7	2.7	92.8
	8	6	2.1	2.1	94.9
	9	2	.7	.7	95.5
	10	4	1.4	1.4	96.9
	11	2	.7	.7	97.6
	12	2	.7	.7	98.3
	13	1	.3	.3	98.6
	15	1	.3	.3	99.0
	18	1	.3	.3	99.3
	20	1	.3	.3	99.7
	35	1	.3	.3	100.0
	Total	292	100.0	100.0	
Total		292	100.0		

Table 39 To show the length of stay per patient as percentage

As can be seen on the above two charts, the majority of patients (99%) are treated <16 days. When excluding the three outlying patients, each with a length of stay of 18, 20 and 35 days, the following chart is produced.

EPI DUR * SEEN BY Crosstabulation

Count

		SEEN BY					
		NO ASSESSMENT	NURSE SPECIALIST	DOCTOR	SEEN & DEFERRED BY NURSE	SEEN & DEFERRED BY DOCTOR	Total
EPI DUR	1	9	10	8			27
	2	28	22	16	2		68
	3	33	24	20		3	80
	4	22	12	16	4		54
	5	8	7	5	1		21
	6	1	6	4	1	1	13
	7	6	1	1			8
	8	5	1				6
	9	1		1			2
	10	2	1	1			4
	11	2					2
	12	2					2
	13				1		1
	15	1					1
Total		120	84	72	9	4	289

Table 40 To show the length of stay per patient for those seen and not seen in the assessment clinic

A review of the length of stay with this group of patients was undertaken to determine if a reduced length of stay occurred for those patients seen in the assessment clinic.

Report

EPI DUR		
NO ASSESSMENT	Mean	3.92
	N	120
	Std. Deviation	2.62
NURSE SPECIALIST	Mean	3.21
	N	84
	Std. Deviation	1.71
DOCTOR	Mean	3.32
	N	72
	Std. Deviation	1.73
SEEN & DEFERRED BY NURSE	Mean	4.89
	N	9
	Std. Deviation	3.30
SEEN & DEFERRED BY DOCTOR	Mean	3.75
	N	4
	Std. Deviation	1.50
Total	Mean	3.59
	N	289
	Std. Deviation	2.21

Table 41 To show the length of stay mean with standard deviation for patients seen or not seen

Group Statistics

	SEENOT	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NOT SEEN	120	3.92	2.62	.24
	SEEN DR OR NURSE +/- DEF	169	3.36	1.85	.14

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	7.095	.008	2.117	287	.035	.56	.26	3.90E-02	1.07
	Equal variances not assumed			1.999	200.282	.047	.56	.28	7.60E-03	1.10

Table 42 To show the significance in length of stay for those seen in the assessment clinic $p < 0.01$

When the assessor is taken into account, and comparison made with those patients not assessed, there is a reduced length of stay for patients who were assessed.

Group Statistics

	SEEN BY	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NO ASSESSMENT	120	3.92	2.62	.24
	NURSE SPECIALIST	84	3.21	1.71	.19

Table 43 To show the length of stay significance for non assessed patients and those seen by nurse assessor

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
			Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	5.884	.016	2.158	202	.032	.70	.33	6.06E-02	1.34
	Equal variances not assumed			2.318	201.116	.021	.70	.30	.10	1.30

Figure 41

For those patients who were assessed by the nurse a reduced length of stay was achieved ($p < 0.02$).

Group Statistics

	SEEN BY	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NO ASSESSMENT	120	3.92	2.62	.24
	DOCTOR	72	3.32	1.73	.20

Table 44 To show the length of stay significance for non assessed patients and those seen by doctor

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mea	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DU	Equal variances assume	5.234	.023	1.722	190	.087	.60	.35	70E-02	1.28
	Equal variances not assume			1.899	88.071	.059	.60	.31	31E-02	1.22

Figure 43

For the group of patients seen by doctor, in comparison with the group of patients who had no assessment, the length of stay is reduced ($p<.025$).

"T192" & "T202" Inguinal Hernia Repair

Incidence - there were 642 patients included as having undergone an Inguinal Hernia repair. The age range of patients is 80 years, 15yr to 95 yr. old.

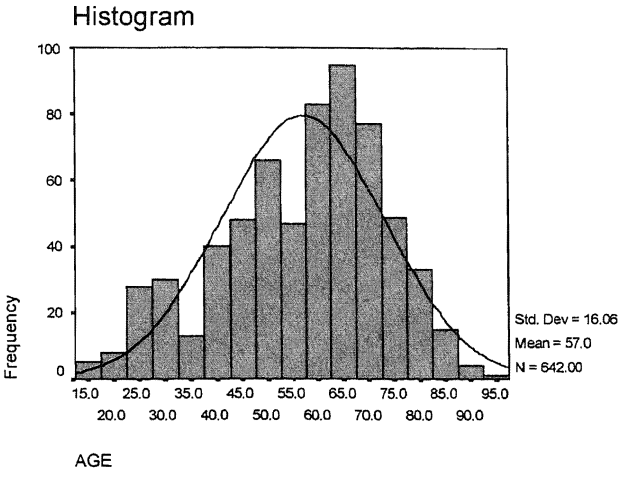


Figure 24 To show the age range of patients treated for Inguinal hernia repair

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	596	92.8	92.8	92.8
	FEMALE	46	7.2	7.2	100.0
	Total	642	100.0	100.0	
Total		642	100.0		

Table 45 To show the sex of patients treated for hernia repair

SITE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ACUTE SITE	83	12.9	12.9	12.9
	ELECTIVE	559	87.1	87.1	100.0
	Total	642	100.0	100.0	

Table 46 To show the site patients were treated for inguinal hernia repair

By far the majority, 92.8% were male patients. Of a total of 642 patients 559 (87.1%) had surgery at the elective unit.

SEEN BY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO ASSESSMENT	335	52.2	52.2	52.2
	NURSE SPECIALIST	154	24.0	24.0	76.2
	DOCTOR	136	21.2	21.2	97.4
	SEEN & DEFERRED BY NURSE	9	1.4	1.4	98.8
	SEEN & DEFERRED BY DOCTOR	8	1.2	1.2	100.0
	Total	642	100.0	100.0	
Total		642	100.0		

Table 47 To show the number of patients treated without assessment and the number who were assessed

52% of patients, 335, had no assessment. 165 patients were seen by the nurse who deferred 9 patients, (these were later to be admitted for surgery). 144 patients were seen by the doctor, who deferred 8 patients that were later admitted for surgery.

AGE OF PATIENTS TREATED FOR INGUINAL HERNIA REPIAR

As has been discussed, the age range of the patients' admitted for Inguinal surgery was 15-95. Were the patients seen in the assessment clinic of similar age or not to those admitted without assessment?

Performing a Levene's T-test on the age of the non-assessed and assessed patient, comparability cannot be assumed ($p<.001$). The mean age for those not seen being 53yrs. and for those seen was 61yrs.

Report

AGE		
NO ASSESSMENT	Mean	53.12
	N	335
	Std. Deviation	17.12
NURSE SPECIALIST	Mean	61.10
	N	154
	Std. Deviation	13.75
DOCTOR	Mean	59.95
	N	136
	Std. Deviation	13.66
SEEN & DEFERRED BY NURSE	Mean	73.00
	N	9
	Std. Deviation	7.83
SEEN & DEFERRED BY DOCTOR	Mean	69.00
	N	8
	Std. Deviation	9.83
Total	Mean	56.96
	N	642
	Std. Deviation	16.06

Table 48 To show the age of patients treated for Inguinal hernia repair. split according to assessor and non assessed patients.

Group Statistics

	SEENOT	N	Mean	Std. Deviation	Std. Error Mean
AGE	NOT SEEN	334	53.04	17.08	.93
	SEEN DR OR NURSE +/- DEF	308	61.20	13.69	.78

Table 49 To show the overall age of patients assessed or not assessed

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
AGE	Equal variances assumed	25.048	.000	-6.645	640	.000	-8.16	1.23	-10.57	-5.75
	Equal variances not assumed			-6.704	627.987	.000	-8.16	1.22	-10.55	-5.77

Table 50 To show that equal variances cannot be assumed for age of patients treated for hernia repair. assessed patients being older $p < 0.001$

INGUINAL HERNIA EXPECTED LENGTH OF STAY

The expected length of stay was from 1 to 4 days. 1 day: 252 patients; 2 days: 28 patients; 3 days: 9 patients; and 4 days: 1 patient. These lengths of stay had been anticipated in the assessment clinic, according to the patients clinical need. The mean expected length of stay being 1 day. The actual length of stay was from day case to 14 days, the mean being 1.04 day, and the mode 1.

EPI DUR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	187	29.1	29.1	29.1
	1	345	53.7	53.7	82.9
	2	66	10.3	10.3	93.1
	3	27	4.2	4.2	97.4
	4	6	.9	.9	98.3
	5	4	.6	.6	98.9
	6	2	.3	.3	99.2
	9	2	.3	.3	99.5
	10	1	.2	.2	99.7
	11	1	.2	.2	99.8
	14	1	.2	.2	100.0
	Total	642	100.0	100.0	
Total		642	100.0		

Table 51 To show the actual length of stay for Inguinal hernia repair

Did the length of stay differ if the patient had been seen in the assessment clinic?

Report

EPI DUR		
NO ASSESSMENT	Mean	1.09
	N	335
	Std. Deviation	1.49
NURSE SPECIALIST	Mean	.78
	N	154
	Std. Deviation	.62
DOCTOR	Mean	1.07
	N	136
	Std. Deviation	1.03
SEEN & DEFERRED BY NURSE	Mean	2.56
	N	9
	Std. Deviation	1.74
SEEN & DEFERRED BY DOCTOR	Mean	1.50
	N	8
	Std. Deviation	.53
Total	Mean	1.04
	N	642
	Std. Deviation	1.25

Table 52 To show the variation in length of stay according to assessor and not assessed patients

Group Statistics

	SEENOT	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NOT SEEN	334	1.08	1.48	8.09E-02
	SEEN DR OR NURSE +/- DEF	308	.99	.95	5.40E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	13.218	.000	.882	640	.378	8.73E-02	9.90E-02	-.11	.28
	Equal variances not assumed			.897	572.512	.370	8.73E-02	9.73E-02	-.10	.28

Table 53 To show the reduced length of stay for assessed patients $p < 0.001$

The Levene's T-test with respect to the length of stay, showed that those seen in the assessment clinic remained a shorter length of time in hospital than those not seen ($p<0.001$), the mean length of stay for those not seen being 1.08 days and .99 for those seen.

6.3 Orthopaedics

In total, 7229 patient episodes are recorded in the speciality of orthopaedics. Of these, 5947 (82.3%) patients underwent surgery.

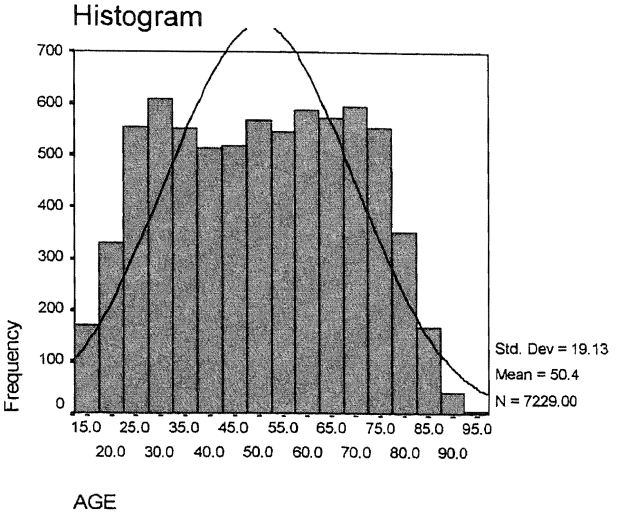


Figure 25 To show the age range of orthopaedic patients

The age range for the orthopaedic patients is 83 yr., the youngest being 14yr. the oldest patient 97yr.

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	3434	47.5	47.5	47.5
	FEMALE	3795	52.5	52.5	100.0
	Total	7229	100.0	100.0	
Total		7229	100.0		

Table 54 To show the sex of patients undergoing orthopaedic surgery

SITE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ACUTE SITE	828	11.5	11.5	12.2
	ELECTIVE SITE	6348	87.8	87.8	100.0
	GP	53	.7	.7	.7
	Total	7229	100.0	100.0	

Table 55 To show the hospital of choice for orthopaedic surgery

Of the 7229 patients due to undergo orthopaedic surgery, 54% were admitted without assessment. The nurse saw just 2% of the assessed orthopaedic patients, the doctor saw the remaining patients.

SEEN BY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO ASSESSMENT	3946	54.6	54.6	54.6
	NURSE SPECIALIST	127	1.8	1.8	56.3
	DOCTOR	2980	41.2	41.2	97.6
	SEEN & DEFERRED BY NURSE	12	.2	.2	97.7
	SEEN & DEFERRED BY DOCTOR	164	2.3	2.3	100.0
	Total	7229	100.0	100.0	
Total		7229	100.0		

Table 56 To show the number of orthopaedic patients assessed & deferred from surgery

Having identified the orthopaedic patients age range, sex, site of surgery and assessment categories, let us now consider the major procedures undertaken, namely discectomy, total knee replacement and total hip replacement.

"V332" Discectomy

In total, 53 patients underwent discectomy. The age range was from 17 - 66 years.

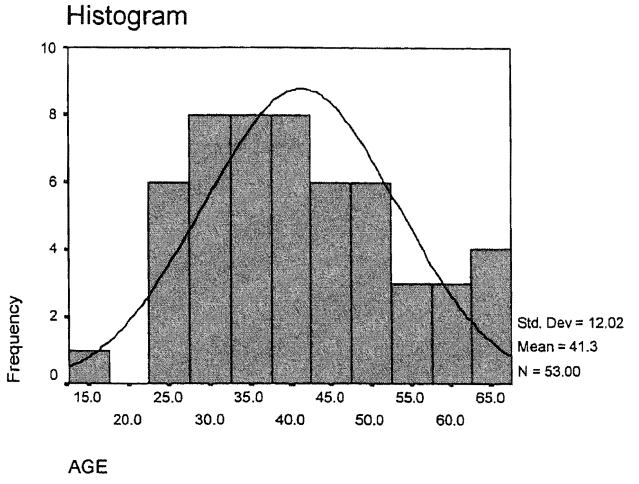


Figure 26 To show the age range of patients undergoing discectomy

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	32	60.4	60.4	60.4
	FEMALE	21	39.6	39.6	100.0
	Total	53	100.0	100.0	
Total		53	100.0		

Table 57 To show the sex of patients undergoing discectomy

60% of the patients were male.

SITE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ACUTE SITE	11	20.8	20.8	20.8
	ELECTIVE SITE	42	79.2	79.2	100.0
	Total	53	100.0	100.0	
Total		53	100.0		

Table 58 To show the hospital of choice for discectomy

80% of the patients had their surgery at the elective surgical unit.

SEEN BY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO ASSESSMENT	19	35.8	35.8	35.8
	NURSE SPECIALIST	2	3.8	3.8	39.6
	DOCTOR	31	58.5	58.5	98.1
	SEEN & DEFERRED BY DOCTOR	1	1.9	1.9	100.0
	Total	53	100.0	100.0	
Total		53	100.0		

Table 59 To show the number of patients who were assessed - discectomy

DISCECTOMY EXPECTED LENGTH OF STAY

The expected length of stay for patients undergoing discectomy was seven days. However, the actual length of stay varied from 5 - 57 days, the mode being 8 days. 75% were discharged by the 10th day, and 90% by the 14th day.

EPI DUR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5	1	1.9	1.9	1.9
	6	2	3.8	3.8	5.7
	7	11	20.8	20.8	26.4
	8	14	26.4	26.4	52.8
	9	6	11.3	11.3	64.2
	10	6	11.3	11.3	75.5
	11	1	1.9	1.9	77.4
	12	2	3.8	3.8	81.1
	13	2	3.8	3.8	84.9
	14	3	5.7	5.7	90.6
	15	1	1.9	1.9	92.5
	16	1	1.9	1.9	94.3
	20	1	1.9	1.9	96.2
	34	1	1.9	1.9	98.1
	57	1	1.9	1.9	100.0
	Total	53	100.0	100.0	
Total		53	100.0		

Table 60 To show the actual length of stay for discectomy patients

When considering the significance of the information above, it is first necessary to ascertain any difference in the age range of patients admitted with no assessment and those admitted following assessment.

Report

AGE

NO ASSESSMENT	Mean	41.00
	N	19
	Std. Deviation	12.04
NURSE SPECIALIST	Mean	37.00
	N	2
	Std. Deviation	1.41
DOCTOR	Mean	41.13
	N	31
	Std. Deviation	12.31
SEEN & DEFERRED BY DOCTOR	Mean	59.00
	N	1
	Std. Deviation	.
Total	Mean	41.26
	N	53
	Std. Deviation	12.02

Table 61 To show the age of patients who were assessed and not assessed for discectomy

When considering the length of stay for non assessed and assessed patients, the mean length of stay for non assessed is 13.26 days, compared to 8.59 days for those patients assessed.

Report

EPI DUR

NO ASSESSMENT	Mean	13.26
	N	19
	Std. Deviation	12.52
NURSE SPECIALIST	Mean	8.50
	N	2
	Std. Deviation	.71
DOCTOR	Mean	9.29
	N	31
	Std. Deviation	2.53
SEEN & DEFERRED BY DOCTOR	Mean	8.00
	N	1
	Std. Deviation	.
Total	Mean	10.66
	N	53
	Std. Deviation	7.86

Table 62 To show the length of stay for assessed and none assessed patients following discectomy

An Independent sample Levene's test was undertaken to ascertain any significance in the length of stay for assessed patients.

Group Statistics

	SEENOT	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NOT SEEN	19	13.26	12.52	2.87
	SEEN DR OR NURSE +/- DEF	34	9.21	2.43	.42

Table 63 To show the length of stay for assessed and not assessed for discectomy

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	12.142	.001	1.842	51	.071	4.06	2.20	-.36	8.48
	Equal variances not assumed			1.398	18.765	.178	4.06	2.90	-2.02	10.14

Table 64 To show the significance in reduced length of stay for those patients assessed prior to discectomy

An Independent sample Levene's test demonstrated a significant difference in the length of stay, being shorter for those patients assessed ($p<.002$).

"W401" TOTAL KNEE REPLACEMENT

There were 224 patients who proceeded to total knee replacement. The age range was 38 years, from 52 yr. to 90 yr.

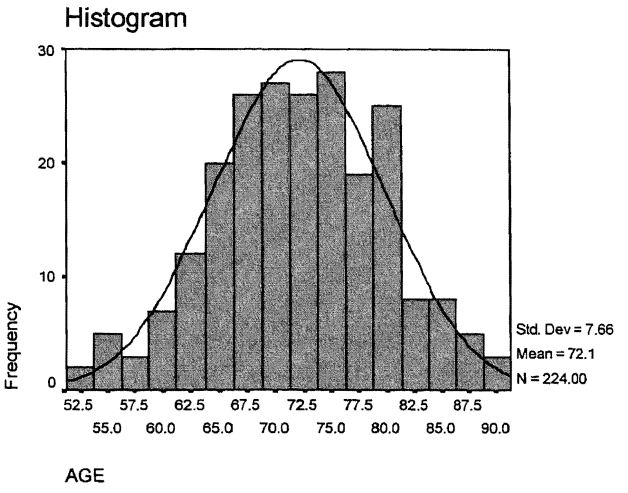


Figure 27 To show the age range of patients for total knee replacement

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	67	29.9	29.9	29.9
	FEMALE	157	70.1	70.1	100.0
	Total	224	100.0	100.0	
Total		224	100.0		

Table 65 To show the sex of patients undergoing total knee replacement

SITE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ACUTE SITE	38	17.0	17.0	17.0
	ELECTIVE SITE	186	83.0	83.0	100.0
	Total	224	100.0	100.0	
Total		224	100.0		

Table 66 To show the hospital of choice of patients undergoing total knee replacement

186 patients (83%), were treated at the Elective Surgical unit, although three were transferred across to acute wards following surgery, the remaining 38 patients (17.0%) were planned for treatment on the acute wards. Two patients had been expected to undergo

Arthroscopy only, but proceeded to have a total knee replacement on the advice of the surgeon.

SEEN BY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO ASSESSMENT	89	39.7	39.7	39.7
	NURSE SPECIALIST	4	1.8	1.8	41.5
	DOCTOR	118	52.7	52.7	94.2
	SEEN & DEFERRED BY NURSE	2	.9	.9	95.1
	SEEN & DEFERRED BY DOCTOR	11	4.9	4.9	100.0
	Total	224	100.0	100.0	
Total		224	100.0		

Table 67 To show the assessed patients prior to total knee replacement

89 patients (39.7%), were admitted with no assessment. Only 6 were seen by the nurse, and 129 by the doctor. 122 (54.5%) were cleared as fit to proceed, the remaining 13 (5.8%) of patients had surgery deferred until medical conditions were attended to.

Report

AGE

NO ASSESSMENT	Mean	71.63
	N	89
	Std. Deviation	7.58
NURSE SPECIALIST	Mean	71.00
	N	4
	Std. Deviation	7.26
DOCTOR	Mean	72.27
	N	118
	Std. Deviation	7.86
SEEN & DEFERRED BY NURSE	Mean	80.00
	N	2
	Std. Deviation	.00
SEEN & DEFERRED BY DOCTOR	Mean	72.82
	N	11
	Std. Deviation	6.93
Total	Mean	72.09
	N	224
	Std. Deviation	7.66

Table 68 To show the age similarity between those patients assessed and not assessed

Overall, equal variance can be assumed between those patients seen or not seen with respect to age and length of stay. The length of stay varied between 4 and 182 days, the mode being 11 days and mean 17.40.

EPI DUR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4	1	.4	.4	.4
	5	1	.4	.4	.9
	6	2	.9	.9	1.8
	7	4	1.8	1.8	3.6
	8	7	3.1	3.1	6.7
	9	14	6.3	6.3	12.9
	10	24	10.7	10.7	23.7
	11	34	15.2	15.2	38.8
	12	16	7.1	7.1	46.0
	13	14	6.3	6.3	52.2
	14	19	8.5	8.5	60.7
	15	18	8.0	8.0	68.8
	16	11	4.9	4.9	73.7
	17	4	1.8	1.8	75.4
	18	10	4.5	4.5	79.9
	19	7	3.1	3.1	83.0
	20	9	4.0	4.0	87.1
	21	2	.9	.9	87.9
	22	2	.9	.9	88.8
	23	5	2.2	2.2	91.1
	24	1	.4	.4	91.5
	25	2	.9	.9	92.4
	26	1	.4	.4	92.9
	27	3	1.3	1.3	94.2
	28	1	.4	.4	94.6
	31	2	.9	.9	95.5
	32	2	.9	.9	96.4
	35	1	.4	.4	96.9
	38	1	.4	.4	97.3
	48	1	.4	.4	97.8
	69	1	.4	.4	98.2
	159	1	.4	.4	98.7
	164	1	.4	.4	99.1
	175	1	.4	.4	99.6
	182	1	.4	.4	100.0
	Total	224	100.0	100.0	
Total		224	100.0		

Table 69 To show the actual length of stay for total knee replacement patients

The length of stay ranged from 4 to 182 days in hospital. 90% of patients were treated within 22 days.

EPI DUR * SEEN BY

EPI DUR		
NO ASSESSMENT	Mean	18.44
	N	89
	Std. Deviation	25.25
NURSE SPECIALIST	Mean	14.00
	N	4
	Std. Deviation	2.45
DOCTOR	Mean	17.04
	N	118
	Std. Deviation	20.50
SEEN & DEFERRED BY NURSE	Mean	8.50
	N	2
	Std. Deviation	6.36
SEEN & DEFERRED BY DOCTOR	Mean	15.73
	N	11
	Std. Deviation	5.24
Total	Mean	17.40
	N	224
	Std. Deviation	21.80

Table 70 To show the length of stay for patient undergoing total knee replacement by assessor

Group Statistics

	SEENOT	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NOT SEEN	89	18.44	25.25	2.68
	SEEN DR OR NURSE +/- DEF	135	16.72	19.26	1.66

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	.584	.445	.577	222	.565	1.72	2.98	-4.15	7.59
	Equal variances not assumed			.546	153.632	.586	1.72	3.15	-4.50	7.94

Table 71 To show difference in the length of stay - total knee replacement seen or not seen

There was no significant difference noted in the length of stay for assessed or non assessed patients.

If the patients treated at the Elective Surgical Unit (186) are taken separately, and the number is restricted to the 90% that stayed 22 or less days, the total is 169 patients. The mode remains 11 days stay. 55 were admitted with no assessment, their mean age being 70.62, and their average length of stay 13.22 days. Those patients (113) seen in the assessment clinic, were mainly seen by the doctor (all but 4 patients). Their mean age was 71yr., a slightly older group of patients than those not seen. The length of stay was a mean of 12.59. There was no significant difference in length of stay for those patients assessed.

W371 Total Hip Replacement

Incidence 333 patients. Age range 63years, minimum 31yr., maximum age 94 yr.

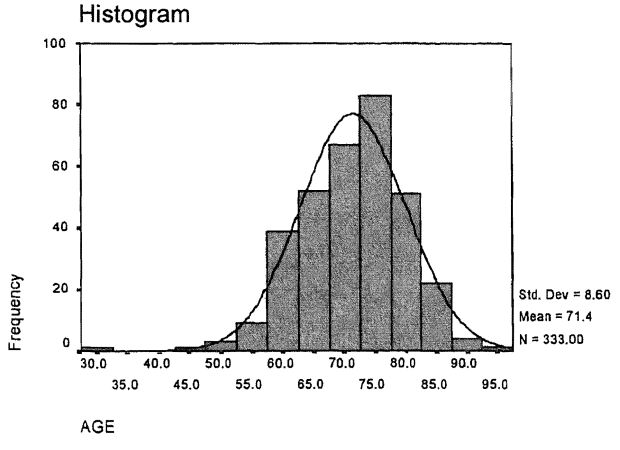


Figure 28 To show the age range of patients for total hip replacement

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	117	35.1	35.1	35.1
	FEMALE	216	64.9	64.9	100.0
	Total	333	100.0	100.0	
Total		333	100.0		

Table 72 To show the sex of patients having total hip replacement

SITE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ACUTE SITE	66	19.8	19.8	19.8
	ELECTIVE SITE	267	80.2	80.2	100.0
	Total	333	100.0	100.0	

Table 73 To show the site of treatment for patients having total hip replacement

267 patients were treated at the Elective Surgical Unit, (80.2%), the remaining 19.8%, 66 being treated at Acute site.

SEEN BY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO ASSESSMENT	119	35.7	35.7	35.7
	NURSE SPECIALIST	7	2.1	2.1	37.8
	DOCTOR	167	50.2	50.2	88.0
	SEEN & DEFERRED BY NURSE	3	.9	.9	88.9
	SEEN & DEFERRED BY DOCTOR	37	11.1	11.1	100.0
	Total	333	100.0	100.0	
Total		333	100.0		

Table 74 To show the assessment of patients due for total hip replacement

There were 333 patients, of whom 174 (52.3%) were seen in the Assessment Clinic and passed for surgery, (7 by the nurse, and 167 by the doctor). In addition, 40 (12%) patients were seen and had admission deferred pending further medical treatments. 119 (35.7%) patients had no assessment.

EPI DUR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	1	.3	.3	.3
	4	1	.3	.3	.6
	5	1	.3	.3	.9
	6	5	1.5	1.5	2.4
	7	4	1.2	1.2	3.6
	8	8	2.4	2.4	6.0
	9	23	6.9	6.9	12.9
	10	46	13.8	13.8	26.7
	11	51	15.3	15.3	42.0
	12	38	11.4	11.4	53.5
	13	31	9.3	9.3	62.8
	14	20	6.0	6.0	68.8
	15	24	7.2	7.2	76.0
	16	19	5.7	5.7	81.7
	17	3	.9	.9	82.6
	18	9	2.7	2.7	85.3
	19	6	1.8	1.8	87.1
	20	4	1.2	1.2	88.3
	21	3	.9	.9	89.2
	22	4	1.2	1.2	90.4
	23	3	.9	.9	91.3
	24	1	.3	.3	91.6
	25	3	.9	.9	92.5
	26	7	2.1	2.1	94.6
	29	4	1.2	1.2	95.8
	31	1	.3	.3	96.1
	33	2	.6	.6	96.7
	40	1	.3	.3	97.0
	48	1	.3	.3	97.3
	63	2	.6	.6	97.9
	64	1	.3	.3	98.2
	73	1	.3	.3	98.5
	90	1	.3	.3	98.8
	99	1	.3	.3	99.1
	174	1	.3	.3	99.4
	199	1	.3	.3	99.7
	231	1	.3	.3	100.0
	Total	333	100.0	100.0	
Total		333	100.0		

Table 75 To show the actual length of stay for total hip replacement

The expected length of stay was 10 - 14 days, the actual length of stay varied from 2 - 231 days, although 90% were discharged prior to day 23.

Report

AGE		
NO ASSESSMENT	Mean	72.22
	N	119
	Std. Deviation	9.67
NURSE SPECIALIST	Mean	72.57
	N	7
	Std. Deviation	11.21
DOCTOR	Mean	70.29
	N	167
	Std. Deviation	7.75
SEEN & DEFERRED BY NURSE	Mean	81.67
	N	3
	Std. Deviation	3.06
SEEN & DEFERRED BY DOCTOR	Mean	72.54
	N	37
	Std. Deviation	7.68
Total	Mean	71.38
	N	333
	Std. Deviation	8.60

Table 76 To show the age for patients assessed & not assessed - total hip replacement

Group Statistics

	SEENOT	N	Mean	Std. Deviation	Std. Error Mean
AGE	NOT SEEN	119	72.22	9.67	.89
	SEEN DR OR NURSE +/- DEF	214	70.91	7.93	.54

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
AGE	Equal variances assumed	2.450	.118	1.331	331	.184	1.31	.98	-.62	3.24
	Equal variances not assumed			1.258	206.724	.210	1.31	1.04	-.74	3.36

Table 77 To show no significance in the age of patients assessed or not assessed prior to total hip replacement

Report

EPI DUR		
NO ASSESSMENT	Mean	18.03
	N	119
	Std. Deviation	26.78
NURSE SPECIALIST	Mean	12.43
	N	7
	Std. Deviation	3.78
DOCTOR	Mean	15.01
	N	167
	Std. Deviation	16.23
SEEN & DEFERRED BY NURSE	Mean	12.33
	N	3
	Std. Deviation	3.51
SEEN & DEFERRED BY DOCTOR	Mean	17.65
	N	37
	Std. Deviation	15.90
Total	Mean	16.30
	N	333
	Std. Deviation	20.42

Table 78 To show the length of stay for patients assessed or not assessed for total hip replacement

Group Statistics

	SEENOT	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NOT SEEN	119	18.03	26.78	2.45
	SEEN DR OR NURSE +/- DEF	214	15.35	15.81	1.08

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	2.638	.105	1.148	331	.252	2.68	2.33	-1.91	7.27
	Equal variances not assumed			.999	164.765	.319	2.68	2.68	-2.62	7.98

Table 79 To show no significance in the length of stay for patients assessed or not assessed - total hip replacement

There was no significant difference as to length of stay when comparing patients seen in the assessment clinic with those not seen. All but 7 patients were assessed by the doctor. The average length of stay was 11 days. As previously stated, 90% of the patients who underwent Total Hip Replacement were discharged within 22 days. If these patients alone

are considered, would a visit to the assessment clinic have had an affect on the length of stay outcome?

301 patients are included, having been discharge within 22 days.

Report

EPI DUR

NO ASSESSMENT	Mean	12.66
	N	108
	Std. Deviation	3.40
NURSE SPECIALIST	Mean	12.43
	N	7
	Std. Deviation	3.78
DOCTOR	Mean	12.22
	N	153
	Std. Deviation	3.17
SEEN & DEFERRED BY NURSE	Mean	12.33
	N	3
	Std. Deviation	3.51
SEEN & DEFERRED BY DOCTOR	Mean	12.07
	N	30
	Std. Deviation	3.52
Total	Mean	12.37
	N	301
	Std. Deviation	3.29

Table 80 To show length of stay in those patients admitted and assessed prior to total hip replacement

Group Statistics

	SEENOT	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NOT SEEN	108	12.66	3.40	.33
	SEEN DR OR NURSE +/- DEF	193	12.20	3.23	.23

Independent Samples Test

		Levene's Test for quality of Variance		t-test for Equality of Means						
									95% Confidence nterval of the Mea	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUF	Equal variance assume	2.012	.157	1.153	299	.250	.46	.40	-.32	1.23
	Equal variance not assume			1.136	212.123	.257	.46	.40	-.33	1.25

Table 81 To show significance of length of stay - total hip replacement

No significant difference was found when comparing the length of stay of those patients assessed and those not assessed.

6.4 Urology

There were 3585 patient episodes noted within the speciality of Urology.

Age range was 14-96.

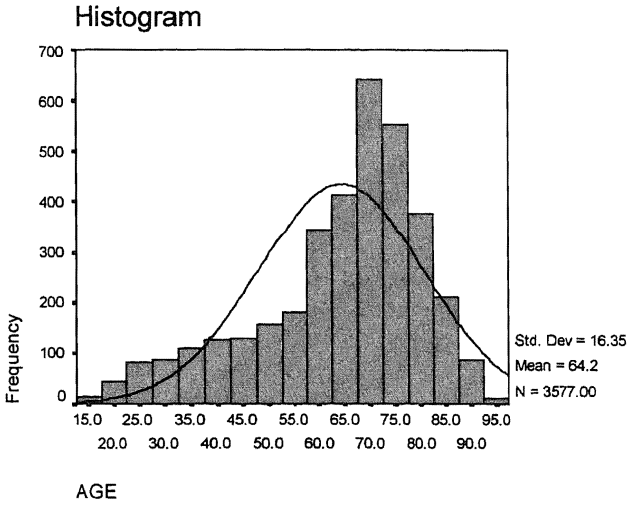


Figure 29 To show age range of patients in the speciality of urology

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	2843	79.5	79.5	79.5
	FEMALE	734	20.5	20.5	100.0
	Total	3577	100.0	100.0	
Total		3577	100.0		

Table 82 To show the sex of urology patients and site treated

SITE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ACUTE SITE	451	12.6	12.6	12.6
	ELECTIVE SITE	3126	87.4	87.4	100.0
	Total	3577	100.0	100.0	

87%, 3126 patients were treated in the elective surgical unit.

SEEN BY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO ASSESSMENT	2503	69.8	69.8	69.8
	NURSE SPECIALIST	618	17.2	17.2	87.1
	DOCTOR	369	10.3	10.3	97.4
	SEEN & DEFERRED BY NURSE	59	1.6	1.6	99.0
	SEEN & DEFERRED BY DOCTOR	36	1.0	1.0	100.0
	Total	3585	100.0	100.0	
Total		3585	100.0		

Table 83 To show the urology patients admitted with and without assessment

1085 patients were seen in the assessment clinic, 95 of whom were deferred for medical attention prior to admission.

Group Statistics

	SEENOT	N	Mean	Std. Deviation	Std. Error Mean
AGE	NOT SEEN	2501	62.43	17.32	.35
	SEEN DR OR NURSE +/- DEF	1084	68.32	13.05	.40

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
AGE	Equal variances assumed	153.971	.000	-10.032	3583	.000	-5.89	.59	-7.04	-4.74
	Equal variances not assumed			-11.192	2688.327	.000	-5.89	.53	-6.92	-4.86

Table 84 To show the significance of the older aged urology patients being seen in the assessment clinic $p< 0.001$

With respect to patients' age, comparability cannot be assumed between those patients seen in the clinic or admitted with no assessment, the patients seen in the assessment clinic being older ($p<.001$). The mean age for no assessment is 62yr. , for assessment 68yr. Those patients who were deferred from assessment as unfit, had an average age of 71yr.

"M421" Trans urethral resection of bladder tumour (TURBT), and "M422" Cystodiathermy.

There were 151 noted episodes for TURBT. Another 125 patients for cystodiathermy, a similar but less invasive procedure giving a total of 276 patients. The age range was 23-96.

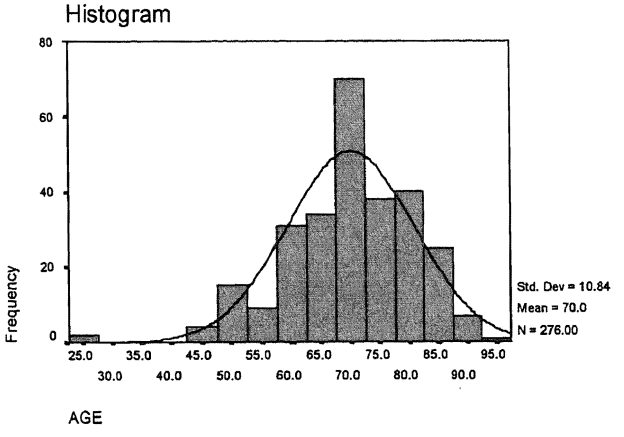


Figure 30 To show the age range for patients undergoing TURBT or cystodiathermy

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	204	73.9	73.9	73.9
	FEMALE	72	26.1	26.1	100.0
	Total	276	100.0	100.0	
Total		276	100.0		

Table 85 To show the sex of the TURBT & cystodiathermy patients.

SITE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ACUTE SITE	76	27.5	27.5	27.5
	ELECTIVE SITE	200	72.5	72.5	100.0
	Total	276	100.0	100.0	

Table 86 To show the hospital of treatment for the TURBT & cystodiathermy patients.

SEEN BY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO ASSESSMENT	160	58.0	58.0	58.0
	NURSE SPECIALIST	58	21.0	21.0	79.0
	DOCTOR	45	16.3	16.3	95.3
	SEEN & DEFERRED BY NURSE	7	2.5	2.5	97.8
	SEEN & DEFERRED BY DOCTOR	6	2.2	2.2	100.0
	Total	276	100.0	100.0	
Total		276	100.0		

Table 87 To show those patients seen in the assessment clinic - TURBT & cystodiathermy

58% of the patients were admitted with no assessment (160), and the remaining patients being seen by both nurse (58) 21%, and doctor (45)16.3%. The nurse deferred from admission 7 (2.5%) who were later admitted, and the doctor 6 patients (2.2%).

EPI DUR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	89	32.2	32.2	32.2
	1	57	20.7	20.7	52.9
	2	43	15.6	15.6	68.5
	3	32	11.6	11.6	80.1
	4	19	6.9	6.9	87.0
	5	8	2.9	2.9	89.9
	6	5	1.8	1.8	91.7
	7	9	3.3	3.3	94.9
	8	4	1.4	1.4	96.4
	9	2	.7	.7	97.1
	10	2	.7	.7	97.8
	11	1	.4	.4	98.2
	12	1	.4	.4	98.6
	13	1	.4	.4	98.9
	18	1	.4	.4	99.3
	29	1	.4	.4	99.6
	34	1	.4	.4	100.0
	Total	276	100.0	100.0	
Total		276	100.0		

Table 88 To show the actual length of stay following TURBT or cystodiathermy

Patients were expected to stay between one and four days, the mode being three days.

Report

AGE

NO ASSESSMENT	Mean	69.61
	N	160
	Std. Deviation	12.10
NURSE SPECIALIST	Mean	71.36
	N	58
	Std. Deviation	9.42
DOCTOR	Mean	68.49
	N	45
	Std. Deviation	7.23
SEEN & DEFERRED BY NURSE	Mean	77.43
	N	7
	Std. Deviation	9.91
SEEN & DEFERRED BY DOCTOR	Mean	69.17
	N	6
	Std. Deviation	9.91
Total	Mean	69.98
	N	276
	Std. Deviation	10.84

Table 89 To show the age difference between those patients assessed and not assessed - TURBT & Cystodiathermy

Group Statistics

	SEENOT	N	Mean	Std. Deviation	Std. Error Mean
AGE	NOT SEEN	160	69.61	12.10	.96
	SEEN DR OR NURSE +/- DEF	116	70.50	8.85	.82

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
AGE	Equal variances assumed	5.267	.022	-.675	274	.500	-.89	1.32	-3.50	1.71
	Equal variances not assumed			-.709	273.974	.479	-.89	1.26	-3.38	1.59

Table 90 To show difference in age for patients seen in the assessment clinic

Is there a difference in the length of stay between assessed and non assessed patients in this category? The length of stay is considered using Independent sample Levene's test including all the patients. 90% of patients were discharged within 5 days.

Report

EPI DUR		
NO ASSESSMENT	Mean	2.48
	N	160
	Std. Deviation	3.87
NURSE SPECIALIST	Mean	1.59
	N	58
	Std. Deviation	1.76
DOCTOR	Mean	1.80
	N	45
	Std. Deviation	1.93
SEEN & DEFERRED BY NURSE	Mean	6.14
	N	7
	Std. Deviation	10.45
SEEN & DEFERRED BY DOCTOR	Mean	3.83
	N	6
	Std. Deviation	1.83
Total	Mean	2.30
	N	276
	Std. Deviation	3.59

Table 91 To show the length of stay for assessed and none assessed patients - TURBT & cystodiathermy

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	3.450	.064	.946	274	.345	.41	.44	-.45	1.28
	Equal variances not assumed			.975	269.663	.330	.41	.43	-.42	1.25

Table 92 To show the difference in the length of stay between assessed and non assessed patients - TURBT & cystodiathermy

Minimal difference was noted between length of stay for assessed and non assessed patients. If the same group of patients are considered when comparing no assessment with nurse only assessment, then the following is found.

Group Statistics

	SEEN BY	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NO ASSESSMENT	160	2.48	3.87	.31
	NURSE SPECIALIST	58	1.59	1.76	.23

Table 93 To show the difference in length of stay in those not assessed and those assessed by nurse only - TURBT & cystodiathermy

Independent Samples Test

		Levene's Test for Equality of Variance		t-test for Equality of Means						
									95% Confidence Interval of the Mea	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUI	Equal variance assume	7.479	.007	1.686	216	.093	.89	.53	-.15	1.93
	Equal variance not assume			2.320	205.649	.021	.89	.38	.13	1.64

Table 94 To demonstrate the difference between those patients seen by nurse and those not assessed in terms of length of stay (p <.007) - TURBT & cystodiathermy

When the variation in length of stay is considered for these patients seen by the nurse assessor or no assessment, a reduced length of stay is noted (p <.007). The same exercise is

undertaken replacing the nurse assessor with the doctor. No significance is found in reducing the length of stay.

Group Statistics

	SEEN BY	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NO ASSESSMENT	160	2.48	3.87	.31
	DOCTOR	45	1.80	1.93	.29

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	3.036	.083	1.130	203	.260	.68	.60	-.50	1.85
	Equal variances not assumed			1.609	147.852	.110	.68	.42	-.15	1.50

Table 95 To show no difference in length of stay between those patients seen by doctor and non assessment - TURBT & cystodiathermy

Noting that 90% of the patients are discharged within 5 days, a comparison was undertaken for this group of patients alone. 274 patients are included.

Report

EPI DUR		
NO ASSESSMENT	Mean	2.42
	N	159
	Std. Deviation	3.81
NURSE SPECIALIST	Mean	1.59
	N	58
	Std. Deviation	1.76
DOCTOR	Mean	1.80
	N	45
	Std. Deviation	1.93
SEEN & DEFERRED BY NURSE	Mean	5.83
	N	6
	Std. Deviation	11.41
SEEN & DEFERRED BY DOCTOR	Mean	3.83
	N	6
	Std. Deviation	1.83
Total	Mean	2.24
	N	274
	Std. Deviation	3.54

Table 96 To show the patients admitted for TURBT and cystodiathermy, where length of stay was five days or less

Group Statistics

	SEEN BY	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NO ASSESSMENT	159	2.42	3.81	.30
	NURSE SPECIALIST	58	1.59	1.76	.23

Independent Samples Test

		Levene's Test for quality of Variance		t-test for Equality of Means						
									95% Confidence nterval of the Mear	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUF	Equal variance assume	6.761	.010	1.596	215	.112	.83	.52	-.19	1.85
	Equal variance not assume			2.182	203.731	.030	.83	.38	.98E-02	1.58

Table 97 To show the significance of nurse assessment/no assessment on length of stay

Group Statistics

	SEEN BY	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NO ASSESSMENT	159	2.42	3.81	.30
	DOCTOR	45	1.80	1.93	.29

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	2.614	.107	1.046	202	.297	.62	.59	-.54	1.78
	Equal variances not assumed			1.477	145.511	.142	.62	.42	-.21	1.44

Table 98 To show nil significance of doctor assessment/no assessment on length of stay

The above figures have shown that for the 90% of patients who stayed five days or less, those seen by the nurse stayed a marginally shorter length of time than those not seen or seen by doctor.

When considering the patients undergoing TURBT alone, the more extensive operation, the following is shown to be true.

Incidence - 151 patients, age range 23 - 96. 81% of the patients were male.

The actual length of stay was 0 to 34 days, with the expected being 4 or less.

EPI DUR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	7.3	7.3	7.3
	1	33	21.9	21.9	29.1
	2	30	19.9	19.9	49.0
	3	26	17.2	17.2	66.2
	4	17	11.3	11.3	77.5
	5	8	5.3	5.3	82.8
	6	5	3.3	3.3	86.1
	7	9	6.0	6.0	92.1
	8	3	2.0	2.0	94.0
	9	2	1.3	1.3	95.4
	10	2	1.3	1.3	96.7
	11	1	.7	.7	97.4
	13	1	.7	.7	98.0
	18	1	.7	.7	98.7
	29	1	.7	.7	99.3
	34	1	.7	.7	100.0
	Total	151	100.0	100.0	
Total		151	100.0		

Table 99 To show the length of stay for TURBT only patients

77 patients were not assessed, (51%), with 37 (24.5%)seen by nurse, 28 (18.5%) by doctor, leaving 4 patients seen by nurse and 5 by doctor who at the time of assessment were not fit to proceed with surgery, and were admitted following medical treatment.

There was no significant difference in age for patients assessed or not assessed.

With regards to actual length of stay, the patients seen by the nurse stayed a significantly shorter period of time than those not seen, ($p < .008$), time being 4.22 days for not seen patients and 2.35 days for those seen by the nurse.

Group Statistics

	SEEN BY	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NO ASSESSMENT	77	4.22	4.75	.54
	NURSE SPECIALIST	37	2.35	1.77	.29

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	7.274	.008	2.312	112	.023	1.87	.81	.27	3.47
	Equal variances not assumed			3.041	107.273	.003	1.87	.61	.65	3.09

Table 100 To show the length of stay as shorter for those patients seen by nurse rather than no assessment following TURBT only

Group Statistics

	SEEN BY	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NO ASSESSMENT	77	4.22	4.75	.54
	DOCTOR	28	2.71	1.82	.34

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	4.206	.043	1.630	103	.106	1.51	.92	-.33	3.34
	Equal variances not assumed			2.347	102.646	.021	1.51	.64	.23	2.78

Table 101 To show the significance of length of stay following TURBT only, when assessed by doctor or no assessment

When the same group of patients is considered following assessment by doctor or no assessment, the latter has a shorter length of stay ($p < .05$).

"M653" Trans urethral resection of prostate (TURP)

Incidence - 604 completed patient episodes.

Age range 44 - 93yr.

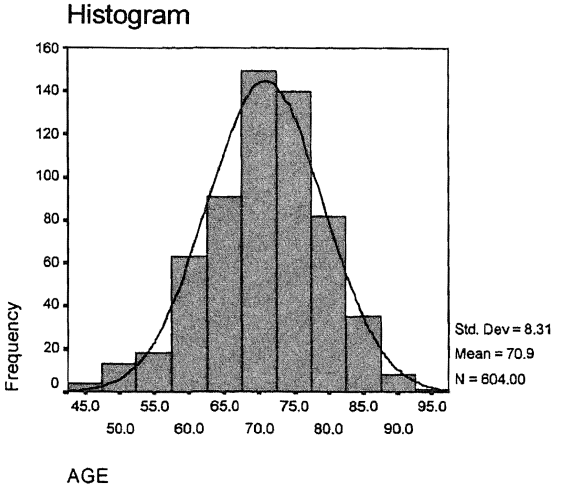


Figure 31 To show the age range for patients undergoing TURP

SITE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ACUTE SITE	194	32.1	32.1	32.1
	ELECTIVE SITE	410	67.9	67.9	100.0
	Total	604	100.0	100.0	

Table 102 To show hospital of treatment for TURP

SEEN BY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO ASSESSMENT	295	48.8	48.8	48.8
	NURSE SPECIALIST	163	27.0	27.0	75.8
	DOCTOR	107	17.7	17.7	93.5
	SEEN & DEFERRED BY NURSE	26	4.3	4.3	97.8
	SEEN & DEFERRED BY DOCTOR	13	2.2	2.2	100.0
	Total	604	100.0	100.0	
Total		604	100.0		

Table 103 To show those patients assessed and not assessed for TURP

48% of patients had no assessment. 170 patients had assessment and were cleared fit to be admitted, with the remaining 39 patients being declared unfit to proceed with surgery until further investigations/treatment had been completed.

EPI DUR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	3	.5	.5	.5
	1	1	.2	.2	.7
	2	9	1.5	1.5	2.2
	3	96	15.9	15.9	18.0
	4	197	32.6	32.6	50.7
	5	116	19.2	19.2	69.9
	6	71	11.8	11.8	81.6
	7	37	6.1	6.1	87.7
	8	29	4.8	4.8	92.5
	9	12	2.0	2.0	94.5
	10	7	1.2	1.2	95.7
	11	4	.7	.7	96.4
	12	2	.3	.3	96.7
	13	4	.7	.7	97.4
	14	3	.5	.5	97.8
	15	3	.5	.5	98.3
	17	1	.2	.2	98.5
	18	1	.2	.2	98.7
	19	3	.5	.5	99.2
	23	1	.2	.2	99.3
	24	1	.2	.2	99.5
	35	1	.2	.2	99.7
	39	1	.2	.2	99.8
	40	1	.2	.2	100.0
	Total	604	100.0	100.0	
Total		604	100.0		

Table 104 To show the overall length of stay for TURP

The expected length of stay per patient was up to 4 days, (range 1-40), though 90% were treated within 8 days. There was a significant difference ($p<.001$) in length of stay for those patients who were seen by the nurse when compared with those who were not seen at all. The nurse- seen patients stayed a mean of 4.37 days, and not-seen 5.73 days. There was minimal difference between the length of stay for patients seen by nurse as opposed to doctor, ($p < .05$), with those being seen by the nurse staying for a marginally shorter period.

Report

EPI DUR

NO ASSESSMENT	Mean	5.73
	N	295
	Std. Deviation	4.15
NURSE SPECIALIST	Mean	4.37
	N	163
	Std. Deviation	1.59
DOCTOR	Mean	5.05
	N	107
	Std. Deviation	2.16
SEEN & DEFERRED BY NURSE	Mean	7.62
	N	26
	Std. Deviation	6.45
SEEN & DEFERRED BY DOCTOR	Mean	6.85
	N	13
	Std. Deviation	2.38
Total	Mean	5.35
	N	604
	Std. Deviation	3.51

Table 105 To show the length of stay for assessed and non assessed patients for TURP

Group Statistics

	SEEN BY	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NO ASSESSMENT	295	5.73	4.15	.24
	NURSE SPECIALIST	163	4.37	1.59	.12

Independent Samples Test

		Levene's Test for quality of Variance		t-test for Equality of Means						
									95% Confidence nterval of the Mear	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	17.718	.000	4.039	456	.000	1.36	.34	.70	2.03
	Equal variances not assumed			5.024	417.316	.000	1.36	.27	.83	1.90

Table 106 To show the reduced length of stay for those TURP patients seen by the nurse $p < 0.001$

Group Statistics

	SEENOT	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NOT SEEN	294	5.73	4.15	.24
	SEEN DR OR NURSE +/- DEF	310	4.98	2.73	.15

Independent Samples Test

		Levene's Test for quality of Variance		t-test for Equality of Means						
									95% Confidence nterval of the Mear	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUF	Equal variance assumed	9.792	.002	2.651	602	.008	.75	.28	.20	1.31
	Equal variance not assumed			2.623	501.891	.009	.75	.29	.19	1.32

Table 107 To show the reduced length of stay for all patients assessed for TURP

Overall, those patients not seen stayed a longer time than those seen, irrespective of whether seen by doctor or nurse. The mean length of stay for those patients not-seen was 5.73, compared to those seen as 4.98 days, ($p < .003$) (including those seen but deferred as unfit).

"M025" & "M039" Partial and total nephrectomy

Incidence - 20 patients underwent partial or total nephrectomy, age range being 72yr. minimum age 15 - maximum 87 yr.

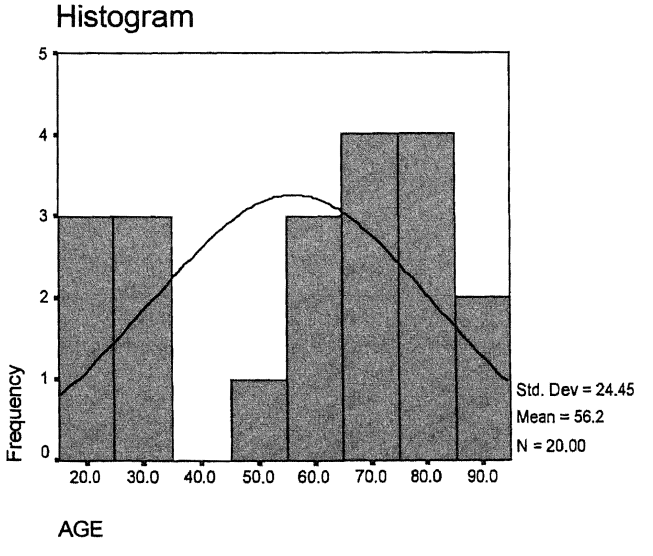


Figure 32 To show the age range of patients undergoing nephrectomy

12 patients (60%), were treated in the elective unit, the remainder at on the acute site.

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	7	35.0	35.0	35.0
	FEMALE	13	65.0	65.0	100.0
	Total	20	100.0	100.0	
Total		20	100.0		

SITE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ACUTE SITE	8	40.0	40.0	40.0
	ELECTIVE SITE	12	60.0	60.0	100.0
	Total	20	100.0	100.0	

Table 108 To show the sex of the nephrectomy patients and denote the hospital of treatment

SEEN BY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO ASSESSMENT	12	60.0	60.0	60.0
	NURSE SPECIALIST	6	30.0	30.0	90.0
	DOCTOR	2	10.0	10.0	100.0
	Total	20	100.0	100.0	
Total		20	100.0		

Table 109 To show the number of nephrectomy patients seen in the assessment clinic or admitted without assessment

The patients who were seen in the assessment clinic were all expected to remain in hospital for seven days. The actual length of stay for all patients, was from 4 to 21 days.

EPI DUR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4	1	5.0	5.0	5.0
	6	5	25.0	25.0	30.0
	7	4	20.0	20.0	50.0
	8	2	10.0	10.0	60.0
	9	2	10.0	10.0	70.0
	10	1	5.0	5.0	75.0
	11	1	5.0	5.0	80.0
	13	1	5.0	5.0	85.0
	16	1	5.0	5.0	90.0
	20	1	5.0	5.0	95.0
	21	1	5.0	5.0	100.0
	Total	20	100.0	100.0	
Total		20	100.0		

Table 110 To show the actual length of stay for patients undergoing nephrectomy

Report

EPI DUR		
NO ASSESSMENT	Mean	10.58
	N	12
	Std. Deviation	5.52
NURSE SPECIALIST	Mean	6.83
	N	6
	Std. Deviation	.98
DOCTOR	Mean	9.50
	N	2
	Std. Deviation	4.95
Total	Mean	9.35
	N	20
	Std. Deviation	4.70

Table 111 To show the length of stay for nephrectomy patients, according to assessment

Group Statistics

	SEENOT	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NOT SEEN	12	10.58	5.52	1.59
	SEEN DR OR NURSE +/- DEF	8	7.50	2.39	.85

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	4.531	.047	1.480	18	.156	3.08	2.08	-1.29	7.46
	Equal variances not assumed			1.710	16.065	.107	3.08	1.80	-.74	6.90

Table 112 To show the difference between length of stay in assessed and non assessed patients undergoing nephrectomy ($p < .05$)

Those patients assessed had a reduced length of stay ($p < 0.05$).

Group Statistics

	SEEN BY	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NO ASSESSMENT	12	10.58	5.52	1.59
	NURSE SPECIALIST	6	6.83	.98	.40

Independent Samples Test

	Levene's Test for quality of Variance		t-test for Equality of Means						
								95% Confidence terval of the Mea	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUI Equal variance assume	6.546	.021	1.628	16	.123	3.75	2.30	-1.13	8.63
Equal variance not assume			2.283	12.332	.041	3.75	1.64	.18	7.32

Table 113 To show the difference between the length of stay following nurse assessment or non assessed nephrectomy patients ($p < .025$)

The patients admitted following assessment by the nurse, stayed a significantly shorter time that those not seen, ($p<.025$), the average length of stay for not assessed patients being 10.58 days, by the nurse 6.83 days and doctor 9.50 days.

6.5 Ear Nose & Throat

Incidence - 1889 patients. Age range 14-94.

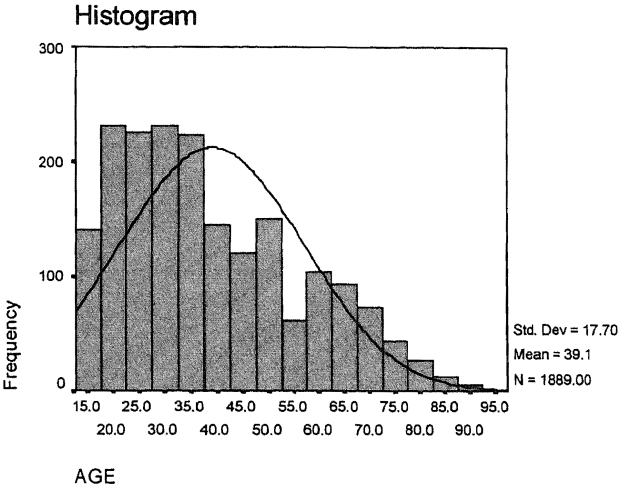


Figure 33 To show the age range for patients in speciality of ear nose and throat

The majority of patients are of the younger age range as can be seen in the above histogram with skewed curve to the lower age band.

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	1053	55.7	55.7	55.7
	FEMALE	836	44.3	44.3	100.0
	Total	1889	100.0	100.0	
Total		1889	100.0		

SITE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ACUTE SITE	129	6.8	6.8	6.8
	ELECTIVE SITE	1760	93.2	93.2	100.0
	Total	1889	100.0	100.0	

Table 114 To show the sex of ENT patients and the hospital of treatment

SEEN BY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO ASSESSMENT	849	44.9	44.9	44.9
	NURSE SPECIALIST	674	35.7	35.7	80.6
	DOCTOR	341	18.1	18.1	98.7
	SEEN & DEFERRED BY NURSE	19	1.0	1.0	99.7
	SEEN & DEFERRED BY DOCTOR	6	.3	.3	100.0
	Total	1889	100.0	100.0	
Total		1889	100.0		

Table 115 To show those patients seen in assessment clinic and those admitted with no assessment

The reduction of the late patient cancellations from this speciality following the introduction of assessment in 1994, prompted the Consultant surgeons to request, that as of 1996, all patients in this speciality be now assessed.

Two conditions within this speciality are now considered, Sub mucus diathermy and Tonsillectomy.

E031" Sub mucus diathermy.

Incidence - 265 patients.

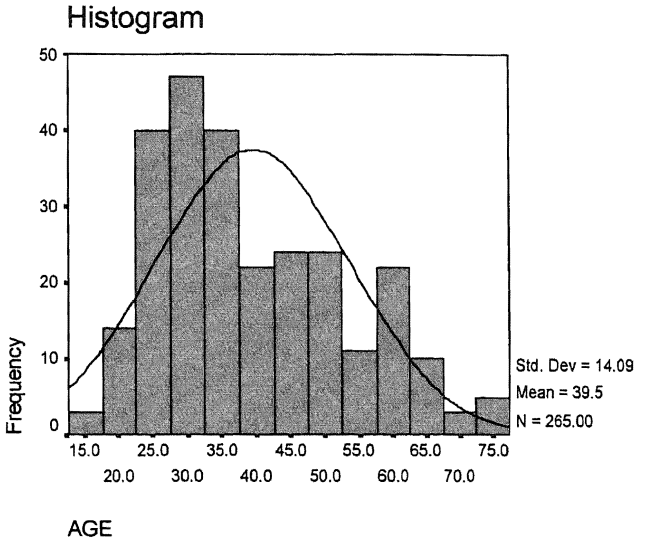


Figure 34 To show the age range of patients undergoing sub mucus diathermy

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	171	64.5	64.5	64.5
	FEMALE	94	35.5	35.5	100.0
	Total	265	100.0	100.0	
Total		265	100.0		

SITE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ACUTE SITE	11	4.2	4.2	4.2
	ELECTIVE SITE	254	95.8	95.8	100.0
	Total	265	100.0	100.0	

Table 116 To show the sex of the patients and the hospital of treatment - sub mucus diathermy

SEEN BY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO ASSESSMENT	129	48.7	48.7	48.7
	NURSE SPECIALIST	93	35.1	35.1	83.8
	DOCTOR	39	14.7	14.7	98.5
	SEEN & DEFERRED BY NURSE	2	.8	.8	99.2
	SEEN & DEFERRED BY DOCTOR	2	.8	.8	100.0
	Total	265	100.0	100.0	
Total		265	100.0		

Table 117 To indicate the number of patients assessed - sub mucus diathermy

EPI DUR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	3	1.1	1.1	1.1
	1	230	86.8	86.8	87.9
	2	26	9.8	9.8	97.7
	3	6	2.3	2.3	100.0
	Total	265	100.0	100.0	
Total		265	100.0		

Table 118 To show the actual length of stay - sub mucus diathermy

The average actual length of stay was one day, with less Std. Deviation (0.15)for those who had been assessed compared with those not assessed. This is a significant difference at ($p < .001$) in favour of assessed patients, despite including those patients who had been deferred as not fit for surgery without prior investigation and/or treatment.

Report

EPI DUR

NO ASSESSMENT	Mean	1.19
	N	129
	Std. Deviation	.45
NURSE SPECIALIST	Mean	1.06
	N	93
	Std. Deviation	.36
DOCTOR	Mean	1.00
	N	39
	Std. Deviation	.23
SEEN & DEFERRED BY NURSE	Mean	2.50
	N	2
	Std. Deviation	.71
SEEN & DEFERRED BY DOCTOR	Mean	2.00
	N	2
	Std. Deviation	1.41
Total	Mean	1.13
	N	265
	Std. Deviation	.43

Table 119 To show the length of stay according to assessment - sub mucus diathermy

Group Statistics

	SEENOT	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NOT SEEN	129	1.19	.45	3.93E-02
	SEEN DR OR NURSE +/- DEF	136	1.08	.40	3.47E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	11.541	.001	2.010	263	.045	.11	5.23E-02	2.16E-03	.21
	Equal variances not assumed			2.005	257.132	.046	.11	5.24E-02	1.88E-03	.21

Table 120 To show the significantly reduced length of stay for those patients assessed rather than not assessed for sub mucus diathermy $p < .002$

"F341" & "F344" Tonsillectomy and tonsil biopsy.

Number of patients - 328. Age range 14- 89.

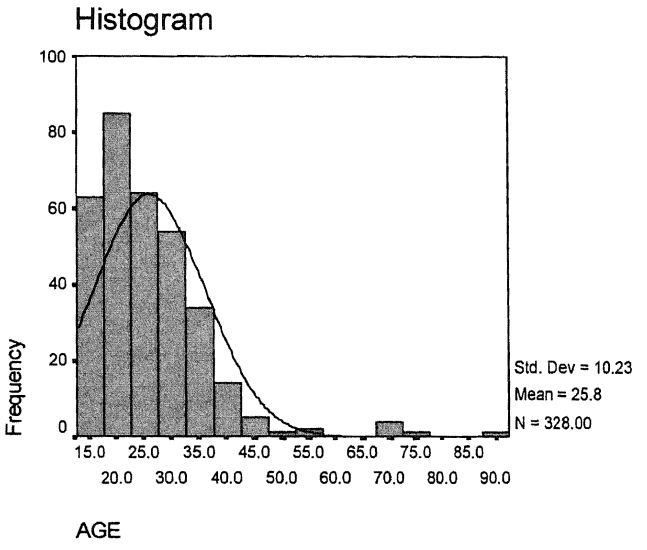


Figure 35 To show the age range for tonsillectomy

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	116	35.4	35.4	35.4
	FEMALE	212	64.6	64.6	100.0
	Total	328	100.0	100.0	
Total		328	100.0		

SITE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ACUTE SITE	33	10.1	10.1	10.1
	ELECTIVE SITE	295	89.9	89.9	100.0
	Total	328	100.0	100.0	

Table 121 To show the sex and hospital of choice - tonsillectomy

Note that 65% of the patients were female.

SEEN BY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO ASSESSMENT	175	53.4	53.4	53.4
	NURSE SPECIALIST	104	31.7	31.7	85.1
	DOCTOR	49	14.9	14.9	100.0
	Total	328	100.0	100.0	
Total		328	100.0		

Table 122 To show the patients who were assessed - tonsillectomy

EPI DUR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4	1.2	1.2	1.2
	1	261	79.6	79.6	80.8
	2	54	16.5	16.5	97.3
	3	8	2.4	2.4	99.7
	4	1	.3	.3	100.0
	Total	328	100.0	100.0	
Total		328	100.0		

Table 123 To show the actual length of stay - tonsillectomy

Report

EPI DUR

NO ASSESSMENT	Mean	1.31
	N	175
	Std. Deviation	.57
NURSE SPECIALIST	Mean	1.13
	N	104
	Std. Deviation	.46
DOCTOR	Mean	1.02
	N	49
	Std. Deviation	.25
Total	Mean	1.21
	N	328
	Std. Deviation	.51

Table 124 To show the length of stay for assessed & non assessed patient - tonsillectomy

Group Statistics

	SEENOT	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NOT SEEN	174	1.32	.57	4.30E-02
	SEEN DR OR NURSE +/- DEF	154	1.09	.40	3.24E-02

Independent Samples Test

	Levene's Test for quality of Variance		t-test for Equality of Means						
								95% Confidence nterval of the Mean	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUF Equal variance assumed	59.056	.000	4.100	326	.000	.23	.49E-02	.12	.33
Equal variance not assumed			4.184	311.655	.000	.23	.38E-02	.12	.33

Table 125 To show that equal variances cannot be assumed for those tonsillectomy patients assessed or not assessed ($p < .001$)

53.4% (175) of patients were admitted with no assessment. Equal variances can be assumed with regards to the age range of those patients assessed or not assessed. However, the length of stay is reduced to one day ($p<.001$) for those patients having been assessed.

6.6 Ophthalmic

All cases were cataract extraction, and were treated as day or overnight stay patients. Minimal differences can be tested between those seen or not seen in the assessment clinic.

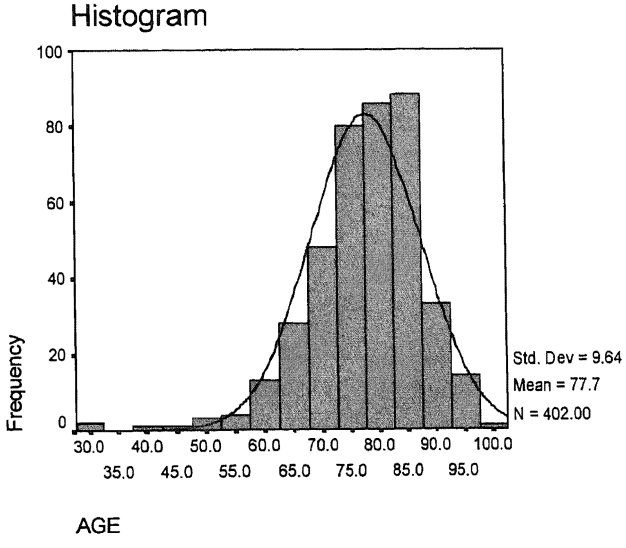


Figure 36 To show age of patients for ophthalmology

6.7 Overview Assessed v non assessed

Report

EPI DUR

NO ASSESSMENT	Mean	2.46
	N	11952
	Std. Deviation	6.97
NURSE SPECIALIST	Mean	1.58
	N	1889
	Std. Deviation	2.19
DOCTOR	Mean	3.37
	N	2933
	Std. Deviation	7.61
SEEN & DEFERRED BY NURSE	Mean	4.45
	N	129
	Std. Deviation	5.34
SEEN & DEFERRED BY DOCTOR	Mean	7.89
	N	228
	Std. Deviation	11.57
Total	Mean	2.61
	N	17131
	Std. Deviation	6.85

Table 126 To show the patients mean length of stay

Group Statistics

	SEENOT	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NOT SEEN	11946	2.46	6.97	6.38E-02
	SEEN DR OR NURSE +/- DEF	5185	2.94	6.56	9.11E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	1.109	.292	-4.251	17129	.000	-.48	.11	-.71	-.26
	Equal variances not assumed			-4.355	10425.013	.000	-.48	.11	-.70	-.27

Table 127 To show the length of stay for patients assessed +/- deferred v. not assessed

The 357 patients assessed and found to have medical problems, but who then proceeded to be admitted without further assessment, showed no significant difference in the length of stay compared with those patients admitted with no assessment. However, if the group of patients who were deferred are removed from the assessed patients, (which is justified by

their not being cleared to proceed with surgery by the assessor), a different scenario is presented.

Group Statistics

	SEEN BY	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NO ASSESSMENT	11952	2.46	6.97	6.37E-02
	NURSE SPECIALIST	1889	1.58	2.19	5.05E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	160.398	.000	5.427	13839	.000	.88	.16	.56	1.19
	Equal variances not assumed			10.784	9061.926	.000	.88	8.13E-02	.72	1.04

Table 128 To show the length of stay for patients assessed by nurse v. not assessed ($p < 0.001$)

Group Statistics

	SEEN BY	N	Mean	Std. Deviation	Std. Error Mean
EPI DUR	NO ASSESSMENT	11952	2.46	6.97	6.37E-02
	DOCTOR	2933	3.37	7.61	.14

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
EPI DUR	Equal variances assumed	40.089	.000	-6.212	14883	.000	-.91	.15	-1.20	-.62
	Equal variances not assumed			-5.889	4218.420	.000	-.91	.15	-1.21	-.61

Table 129 To show the length of stay for patients seen by doctor v. not assessed ($p < 0.001$)

Analysis of data for those patients seen and cleared for admission by the nurse (compared to no assessment), and for those seen by the doctor (also compared with those who had no assessment) shows that there was a significant reduction in the length of stay for those patients assessed. ($p < .001$). This confirms that the patients assessed and cleared for admission will remain in hospital a shorter length of time than those patients who have

either not attended the assessment clinic prior to admission or who have attended, been deferred for medical or social reasons, and then been admitted without being checked in the assessment clinic.

6.7 Summary

Outcome from surgery following assessment can be measured in terms of length of stay. As previously mentioned, the patients were not selected to see doctor or nurse for any reason of health status. That is those with complex medical histories were not specifically booked to see the doctor. Indeed the admission officers booking the appointments only had details of patient identification and their planed surgical treatment, and no knowledge of patients individual problems other than the planned surgical procedure.

Those patients assessed (by doctor or nurse) had a significantly shorter length of stay than those patients who were not assessed.

The urology patients tend to be in the older age range, compared with those under the care of general surgery, orthopaedic and ENT specialities. It is probable that the older the patient, the more medical, nursing and social concerns will present themselves - concerns which may require attention with medication and/or other treatment prior to surgery. This was borne out by the fact that the older age group of patients tended to be those deferred to the acute wards for surgery, where greater medical intervention was available.

There were significant differences in the urology patients with regards outcomes following admission. Significantly, for patients due to undergo resection of bladder tumour, those patients seen by doctor (compared to no assessment), showed no difference in length of stay, but a significantly shorter length of stay for those seen in clinic by nurse. This is particularly significant because those patients seen by doctor were of no significant difference in age to those seen by the nurse, and it can therefore be assumed that the patients had similar medical concerns. However, all patients due to undergo surgery, benefit from having had an assessment in terms of having a reduced hospital stay. The same can be said for those patients due for prostatectomy and those for nephrectomy, no difference in ages between patients seen or not, yet all assessed patients stayed a significantly shorter length of time.

The next chapter will discuss the main findings of the study. These will be discussed in terms of efficiency and in terms of the nurse/doctor role within the admission process.

CHAPTER SEVEN

DISCUSSION

7.1 Introduction

Having considered the process of change at the NHS Trust with regards to the inception and integration of the assessment clinic as a new admission process, this chapter will discuss the main findings and the wider implications. We can begin by asking exactly what was innovative about the initiative described in this study.

- Firstly, a nurse taking a lead in re-engineering the admissions process, specifically in the case of patients due to undergo elective surgery.

- Secondly, a nurse assessing patients prior to surgery, working autonomously, and in respectful collaboration with her multi-disciplinary colleagues.

- Thirdly, the identification of patients' holistic needs, and the implementation of appropriate support services prior to admission.

The principal claim of the study is that the assessment clinic has had a marked and definable effect, largely related to the innovative nature of the clinic. These effects can be classified under three headings: (i.) hospital efficiency, (ii.) enhanced patient care, and (iii.) the implementation of government initiatives.

Hospital efficiency: the study has demonstrated significant reduction in theatre cancellation rates, reduced waiting list times, and reduced numbers of patients failing to attend for operation. Multi-disciplinary collaboration, in particular, doctor-nurse collaboration has been shown to work effectively. This can be considered in terms of improving hospital efficiency as well as enhancing patient care. The creation of an environment of professional development and collaboration on a multi-disciplinary basis has demonstrated that patient care can be enhanced, and through self-regulation, the monitoring of professional development, and management of unfitness to practice, clinical governance be met.

Enhanced patient care: there has been demonstrated an impact on length of stay: for a wide range of very common procedures, patients who have had an assessment to remain in hospital a shorter length of time than patients who have not been assessed.

Government-led initiatives: Whilst not measured within the study, the assessment clinics provided the environment for patients to receive health education in conjunction with government led initiatives. The instigation of GPFH's was to have considerable influence upon the NHS Trust in financial terms, and whilst it is not possible or pertinent to discuss this fully, worthy of note is the resulting decrease of patient throughput as a direct result of financial restrictions imposed from the GPFH practices.

However, since the study has been conducted in only one Trust, it is initially important to consider any other factors which might have influenced these outcomes.

7.2 Factors possibly influencing to the outcomes

The study reports on a single example, which has not as yet been repeated in its entirety at an independent hospital, and there may be other factors which have had a bearing upon the outcomes. We can now consider these other factors.

All consultants worked at both sites as of 1993, and had worked at either or both prior to that year. One retired, and one was appointed, during this study. There was no change in surgeon training during or around the time of the study, and although the number of operating theatres was reduced from four to three mid-point in September 1995, it is difficult to see why this should have had a noticeable effect, particularly on length of stay. The anaesthetic consultants remained unaltered during the time of the study, although junior anaesthetic staff and surgical house-officers changed on a six month basis. This however, is equally unlikely to have had any impact upon the length of stay, since the junior house officers did not work in the elective surgical unit, and the junior anaesthetic staff worked under direct supervision of the registrar or consultant.

The nursing staff were experienced, and many had been in post for at least two years prior to the commencement of the study. Although a change in shift pattern was introduced, requiring nurses on some wards to work twelve hour shifts rather than seven and a half, any other changes were with the nursing management (such as introduction of nurse appraisal), rather than being patient directed. It is unlikely that a change in shift pattern would have resulted in the reduced length of patient stay.

Could the management structure have had any bearing on outcomes? Until the early 1960s, NHS hospitals were under the direct leadership of the Medical Director and Matron - who, with other members of medical staff, were responsible for any change in the running of the hospitals - and local community representatives. Together, they comprised the hospital board. As a result of government reforms, the structure of the hospital boards altered. A managerial role developed, with the introduction of financial directors and general managers. Later, chief executives were appointed with a series of connected, and over-riding aims: to maximise throughput of patients; to ensure economical use of hospital resources; and to work within resources provided. Arguably, the initiative reported in this study represents one of the ways in which an increased throughput of patients was achieved in the case of this Trust; but adoption of that aim does not, in itself, provide a mechanism for achieving it independently.

Ultimately NHS Trusts were formed, ensuring that each hospital became self-governing, subject to government led directives. Within each hospital there was an emphasis on management development, with directorates being formed so that each speciality governed its own finances. At the NHS Trust a Business Manager was appointed for the surgical directorate in 1991; and, from that time on, all changes in the surgical directorate were vetted by the business manager, who gave clearance (or not) to proceed. All changes would need to demonstrate the potential for financial efficiency of savings. There were several changes of efficiency with regards to ward housekeeping - for example: ordering of stationery, use of agency/bank nursing staff, and changes within the shift pattern of nursing staff; but it is unlikely that any of these changes could account for the outcomes identified by this study.

The admission officers remain the same persons as were in post prior to 1992, and the change in the admission process was implemented as a direct result of this study in 1993. The hospitals computer records, specifically a patient management system, were changed in 1994 to a new computer record-keeping system, all data being transferred by the admission officers and the hospital information officers.

It is, then, reasonable to conclude - in the absence of any other mechanism capable of achieving the same effect - that the principal outcomes identified in this study may be due to the introduction of the assessment clinic. As noted above, these outcomes are: increased efficiency, through a reduction of cancellation rates, and an increase in patient throughput, in the form of reduced lengths of stay for assessed patients. However, the main point of interest in the study is that the assessment clinic is both nurse-run and nurse-led, and that

nurses assess patients due for major or minor elective cases. The implications of this must be of interest since, as noted in an earlier chapter, the clinic is an example of specialist nurses taking on roles that were formerly the prerogative of medical staff, and doing so in a professionally autonomous manner.

The literature discussed the function and value(s) of assessing patients prior to major and minor surgery. The question raised was if a nurse was able to undertake the assessment of patients due to undergo elective major surgery and the patient outcome measures be equal to those if assessment had been undertaken by a doctor. This study explored the nurse undertaking the assessment of patients due for elective surgery, alongside that of a doctor undertaking the same task. It has compared the results of doctor and nurse assessment in terms of patient outcomes. When considering length of patient stay, that patients have a shorter length of stay when assessed either by nurse and by doctor when compared to those patients not assessed.

From this point of view, it is also worth observing that the performance of the nurse assessors was not significantly different from that of the medical assessors - using length of stay as a measure - and that, if anything, it was marginally better. To this extent, then, the study may be of particular value in that it demonstrates the feasibility of another type of nurse-led initiative, since it shows that nurses can undertake independent assessments without prejudice to patient care (or, indeed, with the effect of an improvement in patient care). It is also an example of effective doctor-nurse collaboration in practice, with (in this case) the nurse also taking a lead in the effort to establish and maintain such collaboration. These issues will be discussed next.

7.3 Doctor Nurse collaboration

Several factors have led to an increase in the range of circumstances in which nurses undertake duties formerly regarded as exclusively medical [102,103,104,105,109,110]. These factors include: a shortage of junior doctors entering training; the need for continued accreditation and training of doctors throughout their career, as identified both in the Calman Report and as an expectation from colleges and the Department of Health[20,120,122,123,142,49]. An incentive for innovation was provided by the need for financial savings; and the opportunity was created by the NHS reforms, the junior doctors' new deal and - in this particular NHS Trust - a change in the delivery of elective surgical care.

The opportunity, having been presented, was grasped and doctor-nurse collaboration developed. The nurse, through advanced nursing practice has shown that medical and

nursing staff share a common goal: that of providing optimum patient care. Early identification of patients needs - medical, nursing and social - has been shown in this study to reduce patient length of stay post operatively. Discussions with medical staff, in the context of mutual respect for each other's professional status, has allowed a change in behaviour which enhances a team approach to patient care.

At the NHS Trust, the pre-operative assessment clinic transformed the previously known assessment clinics, and provided a nurse-led and nurse-run assessment for all patients due to undergo elective surgery. The hospital has established a service whose focus is the provision of quality planned surgical care for the patient. This assessment clinic model can be implemented in all hospitals, the essential requirements being: (i.) a perceived need to provide holistic care to each patient; (ii.) a willingness by the multi-disciplinary team to adapt and re-engineer the traditional admission process; (iii.) supportive multi-disciplinary staff; (iv.) experienced nursing and medical staff, and (v.) patients' who desire admission which is tailored to their specific needs.

The nurse is working with autonomy, and has her own caseload of patients, for whom she will decide and plan the period of care. She will respect the surgical requirements, and identify the factors which will affect the individual patients' way of life. Exercising clinical judgement she makes informed decisions and monitors the outcomes. She will be accountable for her actions. Where required, she will intervene in the patients' care episode and ensure that, through appropriate means, the patient is admitted at optimum health with optimum support. The nurse undertakes the medical 'clerking' of a patient: she works within recognised procedures and protocols, draws on experience and research, and involves the multi-disciplinary team, to advance individual patient care.

The introduction of such a clinic elsewhere would also require suitable training of an experienced nurse. Currently, no recognised ENB training course offers the type of training required to undertake the duties detailed within this study. However, within DGHs there is a willingness to train a nurse to undertake these tasks, and to audit the practical application of the task in question. In view of the varied duties being carried out by nursing staff, which were hitherto considered medical tasks, consideration must be given by the ENB and prospective employing authorities for recognition of the additional training and duties carried out by a nurse in such a role. The nurse involvement within this clinic has demonstrated that an experienced nurse with suitable training, working autonomously, can achieve at least as good an assessment of patients' requirements as a registered medical officer.

As discussed in an earlier chapter, the concept of advanced nursing and higher practice is under considerable debate, by professional nursing bodies and academics. Advanced practice has been described as "...adjusting boundaries for the development of future practice, pioneering and developing new roles responsive to changing needs and, with advancing clinical practice", and defined as a type of specialised clinical role which calls on the nurse to "....exercise higher levels of judgement and discretion in clinical care... demonstrate higher levels of clinical decision making and...to monitor and improve standards of care through supervision of practice, clinical nursing audit, developing and leading practice, contributing to research, teaching and supporting professional colleagues[161]." The advanced nurse practitioner "should practice in autonomy as in this example; be experienced and knowledgeable in the area of clinic practice; be a researcher and evaluator of care; an expert in health and nursing assessment; expert in case management; consultant, educator and leader; and be respected and recognised by others in the profession[162]." Although the nurse in this study had no masters degree or extended ENB training, the record of her performance in terms of patient outcomes has been demonstrated, thereby suggesting that the practical, clinical experience of nurses is undervalued, and that academic qualifications - while providing evidence of academic standard of learning - are not essential prior to undertaking innovative new work. As nursing and medicine become more evidence-based in their practice, to improve the delivery of patient care, multi-disciplinary planning and integration of change should become evident.

This study has demonstrated that doctor-nurse collaboration, with respect for each other's professional disciplines, can together encompass the patients' holistic needs. The age of the nurse being the "doctors' handmaiden has past, and in its place is a collaborative approach to patient care. Collaboration (in this case, through assessment of patients prior to major elective surgery) can reduce duplication of tasks, thereby maximising efficiency, and make possible a common personalised plan of treatment to be provided for the patient, which will reflect medical, nursing and social needs.

7.3 Hospital efficiency

As discussed within the literature search, "pre-admission screening should result in more efficient use of scarce hospital resources and improved patient care.[176]" This study has suggested that pre-operative assessment has had an effect on hospital efficiency by reducing waiting lists, reducing the number of cancellations from operating lists, and providing a guaranteed bed on elective admission. Of most importance, it has also demonstrated that doctor nurse collaboration is not only achievable, but enhances patient care.

There undoubtedly remains a potential for the use of assessment clinics. As the National Audit Office [44,196] states, a considerable wastage occurs in theatres from patients being unfit to proceed with surgery or not attending for surgery. Therefore NHS hospitals should seek to improve their performance in terms of patient care and efficiency, and a pre-operative assessment clinic is one way of achieving this.

On the assumption that the assessment clinic has produced the efficiency savings as reported in this thesis, would it be likely to have an effect elsewhere? It is possible that through introducing an assessment clinic of the same kind, a rationalisation of the admission system could lead to an increased throughput of elective surgical patients, possibly in specified elective surgical units. This may be possible particularly if elective surgical units could function separately from - but amalgamated with - acute units, providing a purposive unit, with planned workload, able to support the demand for planned surgery independently of acute or emergency activity.

Numerous interviews and lectures given to politicians, chief executives, business managers, medical directors and nurse managers of NHS Trusts nationally - and also politicians and hospital care providers internationally (see Appendix 8) - have shown that the process of changing the admission procedure has begun elsewhere, on similar lines to the developments at the NHS Trust. However, these changes appear to be driven by financial considerations, rather than process-led by the nursing and medical staff; and hospitals have to a great extent provided assessment clinics which are doctor-led with nurse assistance (as with the clinic at the collaboration hospital: Appendix 7).

Efficiency, with regards to this study, has been demonstrated in terms of providing an increased throughput of patients whilst reducing the number of beds available. It is asserted that this was made possible, at the NHS Trust concerned, through advanced planning and anticipation of patient needs. Further, the assessment of patients had, and continues to have, a direct impact upon the anticipation of patients requirements from the perspective of planning hospital care. Those patients who do not require surgery are removed from the waiting list. Meanwhile, patients who fail to arrive, or who cancel their admission and ask to be removed from the waiting list at the time of the assessment, are not impacting upon the admission and operating list. This in turn reduces the length of the waiting list, and will result in those patients who do require surgery being treated at an earlier date. The number of elective beds are reduced to ensure that sufficient beds are available to cater for full

[196] National Audit Office survey Use of Operating Theatres in the National Health Service 1988

operating lists, rather than having a vast number of beds and staff available in the expectation that all may be utilised.

The case-mix and treatment of elective patients provide the basis for hospitals to balance workload and contracts with health authority and GP referrals. The appropriate and accurate assessment of patients prior to admission makes it possible for operation lists to be planned with consideration of patients' holistic needs and their priority for treatment, and allows consideration of the medical, nursing and financial needs of the admitting NHS Trust. This ability to plan the admission of patients, and hence operating lists - together with the ability to plan the discharge of patients and accurately predict length of stay - permits accurate predictions of expenditure in terms of staffing, medical supplies, non-medical supplies and support services, thereby improving the ability to manage the hospital within its financial constraints.

To optimise the efficiency within an NHS Trust, lessons learnt during this study suggest that (i.) patients due for admission for elective surgery should have an holistic assessment, together with the implementation of the outcomes/support services, prior to admission and (ii.) that elective surgery should be undertaken in dedicated units with no admittance for emergency patients.

The elective unit (possibly more than one in a large area) requires support from acute services to provide assistance on an urgent basis should the need arise, rather than being an integral part of the acute unit, thereby creating difficulties in ring-fencing beds for elective surgical cases, and compromising planned surgical care - with all that entails for patient, and hospital - and planned income. Out-patient departments should be located near to the patients' residence (this may necessitate an out patient department on more than one site). A central acute site hospital would then be able to concentrate on emergency and urgent caseload, operate swiftly for emergency patients without compromising the elective patients.

The proximity of the elective and acute units should also be considered with a view to ease of access and travel between sites - for patients, relatives, medical, nursing and multi-disciplinary team - as well as for the transportation of patient notes and x-rays, until electronic means of transfer become available.

In summary then, a nurse, working in collaboration with the multi-disciplinary team, has taken the lead in re-engineering the admissions process, specifically for patients due to undergo elective surgery. The introduction of assessment clinics has resulted in an individual patient care provision respecting the patient's individuality - a provision of care

which is multi-disciplinary, particularly with respect to doctor-nurse collaboration. The nurse and doctor, with their own caseload assessed patients prior to surgery, each working autonomously, demonstrated similar outcomes from the assessment, including deferral of patients and admission of patients and reduction in theatre cancellations. The identification of patients' holistic needs, and the implementation of appropriate support services prior to admission resulted in patients assessed having a shorter length of stay than those not assessed.

Having achieved the outcomes in a DGH as noted within this study, consideration of patient assessment should be given for all patients due to undergo elective surgery. Assessment should enable early identification of holistic individual patient requirements, to ensure the provision of the highest standard of patient care, thereby providing benefit to patient and the hospital. The collaborative approach of doctor, nurse and the multi-disciplinary team should be viewed as utilising all available professional support, thereby optimum patient care, through an integrated care provision.

APPENDIX 1

NHS REFORMS

The National Health Service has undergone many transformations in recent years. In the last decade a considerable number of reforms have resulted in many changes in hospital administration, resulting in the drive to produce maximum effectiveness from available resources. The reforms have had, and will continue to have, a direct impact upon the future of the NHS and the care provided by hospitals nationally. The dilemma facing each general hospital is one of increasing age in the population, and the resulting need for health care support. With improved media representation of medical issues, the general public has developed an awareness of medical changes including new surgical and medical techniques, results of studies, health education, and technological advances. The medical advances and treatments at each local hospital can increase costs to the purchaser (GPFH and DHA), the provider requests the most up-to date investigations and hence puts pressure for the latest equipment to be available locally. This stretches resources; yet, utilising the resources available, each hospital aims to develop high standards of care. These issues have been addressed in the context of a slower increase in overall financial resources relative to previous benchmark needs, with consequent budget, and hence health provision, consequences. Such fundamental change has significantly moved the focus of 'health provider' from the general practitioner, consultant and nurse, to the administrators and managers within general practices and then hospital.

APPENDIX 2

NATIONAL HEALTH SERVICE

The National Health Service was formed in 1948. The many changes brought into being with the reforms of 1989 were designed to create a fundamental change upon each hospital, the key emphasis being a migration from being available to treat patients as required, to providing improved quality care, and promoting patient well-being within the Department of Health (DoH) set criteria. The major change saw the development of an NHS internal market with the creation of General Practitioner Fund Holders (GPFH) and NHS Hospital Trusts, the objective being to introduce market forces into the health sector in order to improve financial efficiency and provide greater choice for patients and their general practitioner's (GP). This structure focused all decision making through the chief executives of the trusts and individual GP practices. General practitioners were encouraged to improve their services, and apply for their own NHS budgets to obtain a defined range of services direct from hospitals.

The establishment of District Health Authorities as purchaser of health services for residents was a key element in the NHS reforms. Adjoining district health authorities merged, to create larger districts, and most important was the development of relationships with the purchasing general practitioners. On April 1, 1994, the national health service regions were re-organised, into eight regions from the previous fourteen, each headed by a regional director, from the NHS Management Executive. As a result North West Thames Regional Health Authority became North Thames Health Authority.

The NHS Management Executive was to take responsibility for the NHS, and is responsible for the public health, social care and health care nationally. The manpower review's report, *Managing the New NHS: Functions and Responsibilities in the New NHS*, states that the new health authorities and GPFH's would be accountable to the regional offices, and that the fund holder would have strong links with the health authorities. Trusts would be primarily accountable to The Green Paper stated that certain areas required immediate action, namely to reduce the occurrence of coronary heart disease as well as stroke, cancers, mental purchasers for service delivery through their contracts, but also to the regional offices for their financial performance and for implementing national policy initiatives. The *Health of the Nation* , Green Paper published June 1991, lists national targets to be achieved by the year 2000. The achievement of these targets will be dependent upon the "commitment and skills of the health professionals within the NHS." The Government's strategy for health has an overall goal to continually improve the general health of the population, increasing life expectancy, reducing pre mature death, and reducing ill-health through health promotion. illness, HIV, AIDS, and accidents; financial resources would therefore be used primarily in these six areas, at the expense of long term, elective patient care.

Table 130 Summary of NHS changes 1989 - 1991

1989

- Secretary of State establishes an NHS Management Executive.
- Regional health authorities identify first hospitals to become NHS Hospital Trusts.
- General Practitioners given preparatory information for budget holding
- Audit Commission begins to work on the NHS

1990

- Regional health authorities and district authorities reconstituted.
- Preparatory work continues for operational responsibility towards NHS Hospital Trusts.
- Consultation document. The Future of Acute Hospital Services

1991

- The first NHS Hospital Trusts established
- The first GP fund holders begin buying services for their patients.
- District Health Authorities pay for work undertaken by other authorities.
- The Health of the Nation
- The Patients' Charter

1998

- The New NHS - Modern, Dependable

THE PATIENTS' CHARTER

The Patient's Charter 1991, was aimed at improving the services provided by the NHS, in accordance with the Health of the Nation documents, together with the original aim of the NHS in 1948, that every citizen has the right to receive health care on the basis of clinical need, regardless of ability to pay.

The Patients' Charter also states that the patients are entitled to receive emergency medical care at any time, through GP or accident and emergency services; to be referred to a consultant, acceptable to the patient, for a second opinion if so desired; to be given a clear explanation of any treatment proposed, including any risks and alternatives before deciding whether to continue with treatment. From 1992, additional rights were given to every citizen, including the right to be given detailed information on the local health services, including quality standards, and a right to treatment within maximum waiting times - a guarantee of admission for virtually all treatments in no more than two years from being placed on the waiting list.[197] This created the need for improved management of the waiting lists, paying more attention to the length of patient wait, yet with awareness of general practitioner contracts. Any patients waiting for a period longer than that stipulated either in the Patient Charter or GPFH agreed contract would result in financial implications for the hospital concerned, not only for that year but potentially for the forthcoming years as well.

National Charter Standards stated that all patients would be seen within 30 minutes of their appointment time. In a busy outpatient department with urgent and complex cases, this target would be difficult to reach, as the consultant would focus on one patient at a time with consequent time commitment determined by individual need, before attending the next patient.

The national target was set by the Charter that operations should not be cancelled on the day of admission, and that if the operation is cancelled twice, admission would be within one month of the second cancellation. This was to prove difficult to achieve nationally in the acute hospitals due firstly to fewer beds being available as a result of financial disciplines, and secondly to seasonal changes with bed occupancy (an increase in patients with orthopaedic problems such as fractures, during the winter months).

Each NHS Trust is required to keep finances within budget which, irrespective of total workload, would be provided with a fixed income from the DoH, and/or General Practitioner Fund Holders. As a direct result of this constraint, financial savings were sought by reducing the number of staff and wards within hospitals, creating an increase in bed usage and/ or occupancy, and resulting in limited bed availability for elective admissions and, on occasion, for emergency admissions - particularly in the winter months when patients with asthma and bronchitis fill medical ward beds, and patients suffer fractures resulting from falling in icy conditions. This would further increase the

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[197] Waiting List - a record of patients requiring hospital attention. The date of waiting list - the date of consultation with the specialist in outpatients, resulting in the course of treatment being planned.

need to ensure that elective patients are admitted with all preparations undertaken in advance, to ensure that each bed used by an elective patient will be utilised appropriately.

The Patients' Charter required that the waiting list should be no longer that eighteen months. Working with waiting lists which had been excessively long required careful usage of theatre and ward time, in order to reduce the list to "acceptability" within the Charter framework. In other words, it became a prime concern to ensure that every theatre space and bed space was availed and not under-utilised; yet the surgical wards would be expected to take in emergency or acutely ill patients. This placed a heavy demand upon the availability of beds for planned cases. This availability of beds had been dominant in the patients admission, rather than as would be proved to be the case within an elective only surgical unit, having no acute surgical admissions, where the availability of beds whilst being a concern, would be over ridden by the availability of theatre space. That is, if the theatre list is full to capacity, then no further patients need be brought in to fill the beds, if any empty ones may occur. The essential need would be that each patient should have their admission planned in advance, so that the availability of beds could be predicted for forthcoming patients, and make maximum use of the resources available in both financial terms and staff abilities.

GENERAL PRACTITIONER FUND HOLDERS

In 1991 the General Practitioner Fund Holders (GPFH), were introduced by the Department of Health. The general practitioners within the fund holding practices purchased individual patient treatment and, in particular, elective[198] treatment. Quality of patient care[199] was, and remains, paramount in the contract agreements with both the district health authority and the GPFH's. The contracts would create the potential of a two-tier service of care throughout the country, a routine service for those patients in non fund holding practices, and a more rapid service for those in fund holding practices. The GPFH's would be in a position to demand that their patients for routine care (that is those whose treatment is not urgent) be treated within a certain number of weeks, thereby resulting often in the "two tier system" of treatment with especially arranged theatre sessions being undertaken for GPFH patients only.

The GPFH were given the funding to enable the individual practice to 'shop-around' to the hospital/provider of choice. In reality, little has changed, according to researchers surveying 129 community health councils in England, who reported that their local health authority contracts remained with the local hospital that had always provided the care[200] and continued, "The majority of fund holders (55% of 1,256 surveyed), have made changes in just one or two services, most

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[198] Elective - used in this context to signify planned admission to hospital.

[199] Quality of patient care - used to signify the optimum practice of health care given to individual patient's together with support for their families.

[200] How reformed is the NHS? Association of Community Health Councils for England and Wales, 1996.

commonly pathology and physiotherapy. Changes to acute speciality referral patterns are often temporary arrangements.". The National Audit Office (1995) Contracting for Acute Health Care in England. HMSO, confirmed this report saying: "There has been less change in the use of particular providers than might have been expected." The GPFH's are able to influence the local hospitals through the contract negotiations, and by directing which patients from their practice should receive treatments, and when the treatment should be received. Contract negotiations and discussions of care would be influenced by the number of NHS Trust hospital providers in close proximity.

MANAGEMENT CONSIDERATIONS

To summarise the above, each NHS Hospital Trust, has to provide optimum care within the resources provided from GPFH contracts and DHA. In 1991 Crown immunity was removed from hospitals, which made it necessary to create a modest level of financial reserves[201]. Expenditure on new equipment was rising, and there was a general public concern that care was being rationed to favour those in a GPFH practice. Access to technology, the latest advances, were restricted to certain few hospitals that had the financial reserves. The NHS reforms were directed towards establishing structures and incentives that should encourage quality and efficiency of care, whereby the financial support from the DHA and the GPFH would form a contract with the hospital of their choice, which would reflect the priorities from within their clientele.

To improve the effectiveness and efficiency of healthcare, widely available information is required on the outcomes of healthcare. In order to achieve this, audit becomes the essential tool for improving the quality of care, to establish clinical and management skills and facilitate the support and training of multi-disciplinary team members.

Within each NHS Trust different methods would be found to reduce expenditure and increase the throughput of patients, whilst striving to maintain an optimum quality patient care. Throughout the country the number of in-patient beds available, as well as the numbers of staff, were reduced; and it became essential that every bed was used with due consideration of length of patient stay and degree of urgency of the condition. Department of Health circulars and papers written in the last decade [202] [203] [204](Health of the Nation, The Health Service Caring for the 1990's and the Patient Charter), have as their theme that of improving the service provided for the client group, in terms of efficiency and quality of care.

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[201] *"Application for NHS Trust Status." North West Herts General Hospitals Unit.*

[202] The Health of the Nation (DoH) 1992

[203] The Health Service Caring for the 1990's. White paper on the Government's proposals following its review of the NHS - January 1989

[204] Patient Charter (DoH) 1991

The nation's National Health Service hospital admission system has remained unaltered, in respect of patients due for surgery, since its inception in 1948; yet, as surgical abilities and techniques have improved, more procedures are performed on a greater number of patients, hence the number of patients requiring treatment has increased, and waiting lists have lengthened. The client group, each individual residing within the United Kingdom, has expanded, and each individual receives more information about health and illness both through media articles and health education; the expectation is therefore that the individual client will receive the optimum in investigative techniques, and that any procedure will be performed with utmost speed and by the person most suited to the task. It therefore becomes essential to provide an admission system which will give the opportunity to focus on the need for surgery and individual patient requirements and hence optimise the quality of care.

LOCAL COMPETITION

Within each health authority the number of district general hospitals varies, and competition within the locality of each district general hospital has been mentioned. With the increase in GPFH and the availability for services to be purchased at other hospitals within easy reach, it would be essential that services within each NHS Trust should be seen as efficient and as providing high quality care. Possible mergers of local NHS Trust hospitals could provide a centre of excellence for acute care, offering such services as Intensive Care and Accident & Emergency, whilst satellite hospital units provide for more specific and local needs, which in themselves would not require Intensive Care support. Such satellite units could offer breast screening, radiotherapy, GP run elderly care beds, or elective surgery for patients with controlled or no medical concerns, and would be required to provide outpatients services and minor injury units.

The Government enforced expectations of each NHS Trust required considerable changes in the management and planning of patient care, which would affect all personnel working within the hospital environment. In order to effect the prime goal of patient centred care at the NHS Trust, a total restructuring of the admission process, (and the management process) was initiated, including assessment of patients. This restructuring would draw the multi-disciplinary team together in the interests of planned provision and thereby optimise the quality of care provided to the individual patient. Introduction of the assessment of patients would be a major factor in the restructuring process, and afterwards in the long term planning of the hospital as a provider of patient care.

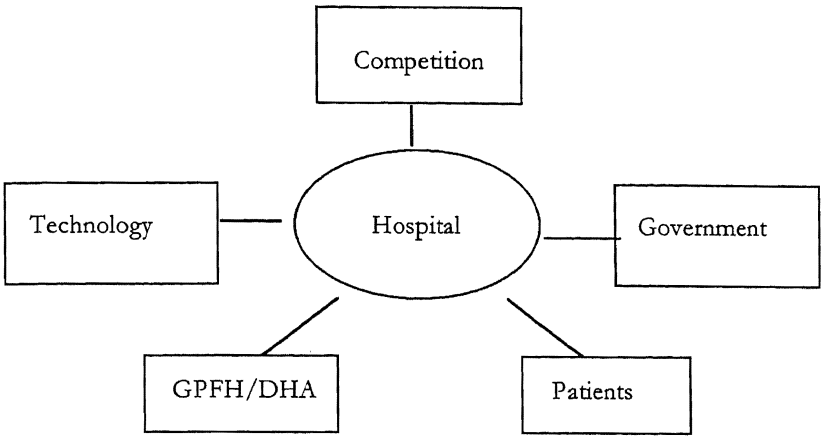

Figure 37 The pressures on Hospitals/Business[205]

The White Paper 10th December 1997 "The new NHS Modern, Dependable"[206] will potentially address these demands with the abolition of GPFH and the introduction of primary and secondary healthcare collaboration rather than competition.

- With the White Paper, the internal market is dissolved, being replaced with a system of partnership, of integrated care with General Practitioners and health providers.

- The White Paper aims to identify the best practices of care and spread them throughout the NHS Trusts, nationally.

- The freedom to "tailor the NHS to meet the needs of individual patients'." [14]

- The effects of lack of internal market will be to remove the divide of patient care which had become GPFH v. DHA funded and NHS Trust v. NHS Trust.

- National standards and guidelines will require evidence base and will be monitored centrally, through National Institute of Clinical Excellence.

- Financial incentives are anticipated in the form of non-recurrent money and long term savings plans to encourage all NHS personnel to improve both performance and efficiency of care for patients.

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[205] Adapted from The Pressures on Business "Re-engineering your business" D Morris & J. Brandon

[206] The new NHS Modern - Dependable December 1997 . Department of Health

- Those Trusts which fail to meet the expected national standard will be subject to withdrawal as a provider of health care.

APPENDIX 3

PROCEDURE FOR THE ASSESSMENT OF ADULT PATIENTS PRIOR TO ELECTIVE SURGERY

1. Purpose and Scope

The purpose of this procedure is to implement the Surgery Directorate policy as detailed below.

'The policy of the Surgical Directorate is that all patients in the following categories; those for major and intermediate surgery, those over the age of 60, those with known anaesthetic, medical or social concerns, those with physical or learning difficulties, all ENT patients, all orthopaedic patients, will have an assessment to identify their holistic needs and their subsequent management planned prior to admission for surgery.'

2. Responsibility

The responsibility for the implementation of this procedure is with the appropriate medical and nursing staff.

3. REFERENCES:

Blood transfusion request guidelines
CXR/ECG protocol
POPUMET guidelines for radiation exposure
Deferral guidelines
Patients' Charter
Discharge policy

4. DEFINITIONS

AAA	Abdominal Aortic Aneurysm
ASA	Anaesthetic Scoring Assessment
BMI	Body Mass Index
CABG	Coronary artery bypass graft
COAD	Chronic Obstructive Airways Disease
CXR	Chest X-ray
ECG	Electrocardiograph
FBC	Full Blood Count
G&S	Blood groups and save
HbAIc	Glycated Haemoglobin
MI	Myocardial Infarction
POA	Pre-operative Assessment
SOBOE or Rest	Short of Breath on Exertion or At Rest
U&E	Urea and electrolytes
USS	Ultrasound scan

5. Documentation

Records of any actions taken when using this procedure should be made in the patients notes.

6. ACTION AND METHODS

6.1 Assessment

6.1.1 Medical history will be taken from the patient to include

- planned surgical procedure
- past operative procedures
- past/current medical history
- current medication
- allergies
- smoking per day
- alcohol consumption per week in units
- Identify any nursing and/or social concerns

If the patient is found to have any current medical concerns, ascertain the frequency, what initiates the condition and what alleviates the condition.

6.1.2 Examination of patient to include:

- appearance
- signs of ankle oedema
- signs of ulceration to legs
- pulses
- blood pressure
- chest auscultation

6.1.3 If ≥70 or Cardiovascular abnormality is present, then request an ECG. Ensure ECG is correctly labelled with name and date.

6.1.4 If SOBOE, or asthmatic, undertake Peakflow test +/- CXR, if COAD then request CXR and Peak Flow. If peak flow <300 L/min then patient to be treated at acute site.

6.1.5 If diabetic, check Glucometer reading and take bloods for HbAIc. If diabetes is thought to be unstable, refer to the diabetes nurse specialist. No patient should have their operation cancelled without full discussion with the Diabetic Team.

6.1.6 Weigh the patient and assess BMI score, if BMI <20 or >35 refer to dietician.
If BMI >35 refer to Anaesthetist.

6.1.7 Request and take appropriate blood samples in accordance with request guidelines.

6.1.8 Decide from history above along with results of ECG and CXR, where appropriate, and deferral guidelines if patient is to proceed with surgery at the Elective surgical unit or

- proceed with surgery at the acute site, or
- defer admission for treatment by GP, or

- defer admission for further investigations or consultation with Consultant Surgeon.

6.1.9 Inform patient of decision and outcome from assessment, ensure contact numbers are provided when referrals have been made. Ensure patients taking anti-coagulation therapy are given appropriate reduction advice.

6.2 SUBSEQUENT MANAGEMENT

6.2.1 Refer according to needs identified in the assessment, to anaesthetist, haematologist, nurse specialist, dietician, physiotherapy, occupational therapy, general practitioner, social services, outpatient department

6.2.2 Collate outcome from assessment and inform admission office in writing.

6.2.3 Inform patients' consultant surgeon of any changes.

6.2.4 Request prosthesis from theatres.

6.2.5 It is the responsibility of the assessor to check all blood results and organise treatment accordingly.

6.2.6 Monitor cancellations of patient from operation lists.

6.2.7 Monitor outcome of POA and cancellation from operation list.

APPENDIX 4

THE CRITERIA GUIDE

CRITERIA FOR DEFERRAL OF PATIENTS FOR ADMISSION TO ELECTIVE SURGICAL UNIT

1. Refer patient to GP with advice letter.
   i If >65 years and systolic blood pressure >180mm.
   ii If >65 years and diastolic blood pressure >105mm.
   iii If <55 years and systolic blood pressure >160mm.
   iv. If <55 years and diastolic blood pressure >95mm.

2. Admission when GP returns advice slip*

3. ECG abnormal: check with Anaesthetic Registrar re acceptability for surgery.

4. (a) Coronary artery bypass graft (CABG) in last 6/12 - to be booked for surgery at acute site.

5. Aneurysm repair in last 6/12 - Consult with Consultant Anaesthetist, plus surgery at acute site.

6. Angina - If unstable despite medication, patient to be booked for surgery at acute site.

7. Cerebral vascular accident (CVA) in the last 6/12 - patient to be booked for surgery at acute site.

8. Myocardial Infarction (MI) in the last 6/12 - patient to be booked for surgery at acute site.

9. Warfarin - Haematology will advise patient on reducing Warfarin. Clotting screen to be checked the day before and the day of surgery.

10. Patients on ASPIRIN should discontinue at least one week prior to surgery, dependent upon surgery planned.

11. Epilepsy - if unstable despite medication, patient to be booked for surgery at acute site.

12. Diabetes Mellitus - if unstable despite medication to be booked for surgery at acute site.

13. Shortness of breath on exertion (SOBOE)/chronic chest condition/chronic obstructive airways disease (COAD) - on review of Chest x-ray may be booked at elective site or acute site.

14. Age >90 years - book for acute site unless for minor procedure.

15. Other underlying medical/surgical condition which may necessitate ITU/CCU/Specific 24 hour care from anaesthetic or medical teams - to be booked for surgery at acute site.

16. Myopathy/neuropathy causing significant or potential respiratory embarrassment - to be booked for surgery at acute site.

17. Family/personal history of malignant hyperpyrexia or Suxamethonium apnoea - to be booked for surgery at acute site if for GA. These patients should be discussed with a Consultant or Registrar if they are to receive GA.

18. Weight Criteria, Any patient with BMI of 35 or more should be deferred to acute site.

19. The patient with known sleep apnoea should be treated at the acute site.

*Should a GP not wish to take active steps to reduce the blood pressure (see number 1 above) then a Consultant Anaesthetist's opinion should be obtained.

APPENDIX 5

OUTLINE OF THE ASSESSMENT PROCEDURE

1. The following must be present before interview, to ensure current health information is available with regards the patients condition, time of appointment and proposed admission date, and planned treatment details, relevant notes, X-rays

2. Appropriate room and equipment, to provide privacy for interview and examination.

3. Correctly identify oneself and patient and in certain circumstances the care provider, and explain the purpose of the interview.

4. Interview the patient/care provider to obtain information upon the following topics:- Past Medical/Surgical conditions, Current Medical conditions, Current Medication, Allergies, Nursing needs, Social needs.

5. Confirm the above with documentation from the clinical notes and record in detail any additional information.

6. On direct questioning ascertain from the patient further clarification with regards any medical, nursing, social concerns; ascertain full history of the condition(s) noting occurrence, how it is relieved, current status, how it is treated and who keeps a medical check i.e., the GP or Consultant at a hospital. Particular emphasis should be paid to :- Hypertension, Diabetes, Epilepsy, Asthma, Shortness of Breath, History of Angina, Palpitation, Myocardial Infarction, Cerebral Vascular Accident.

7. Note any social concerns, in order to plan and initiate action to address the issues pre admission and hence avoid unnecessary delay with regards discharge from hospital once medically fit for discharge.

8. Note any nursing needs, essential particularly for those unable to be totally independent, to ensure appropriate nursing intervention pre, peri and post operation.

9. Complete a medical examination of the patient, to include:-

    - Weight, Height and Body Mass Index.

    - Pallor, regularity of pulse, blood pressure, signs of oedema, jaundice, cyanosis, anaemia.

    - Chest auscultation, noting :-

    - Heart sounds, chest expansion, positioning of trachea, freedom of air entry, wheezing, crepitations.

10. Following the above, identify and organise any investigations such as:- Peak flow, Glucometer reading, Phlebotomy, Electrocardiograph, Chest x-ray, Ultrasound.

11. Interpret the findings from the investigations, seeking advice as appropriate.

12. With the knowledge accrued during the interview together with the investigation results, identify :-

- any known medical condition(s)
- those not previously known, and
- determine the fitness of the patient for anaesthesia according to ASA guidelines.

13. Determine if any medical/nursing/social concerns require deferral from admission, or if patient can be admitted with support for their medical/nursing/social concerns.

14. **NB. Only patients with an ASA I or II may be treated at the elective site**

15. Inform patient of findings and plan of treatment, including deferral of admission; any referrals; pre surgical preparation.

16. The procedure anticipated; information of expected length of stay; effect of surgery for their lifestyle; expected time from work required to convalesce.

17. Provide health education with respect to the individual patient, and proffer appropriate leaflets of guidance.

18. Offer the opportunity for the patient to ask any further questions that he/she may have.

19. If condition(s) are identified that require treatment prior to admission this needs to be organised by letter to appropriate Consultant(s) and/or General Practitioner, document in notes, together with a full explanation to the patient. Ideally the patient should be provided with the letter to take to their General Practitioner, together with copies of any relevant investigative findings.

20. Check the admission details with the patient or any other plans following the assessment.

21. Organise any further letters, referrals, ensure prosthesis requirement is known by admissions and/or theatre as appropriate, and inform admissions with regards the outcome from the assessment clinic.

22. Ensure that the patient has a contact name and telephone number to ensure any queries from General Practitioner, Patient, or relatives are responded to by the assessor.

See also the deferral of patient procedure and the care of the diabetic patient.

APPENDIX 6

PROCEDURE FOR THE ASSESSMENT OF PATIENTS WITH DIABETES OR IMPAIRED GLUCOSE INTOLERANCE

PROCEDURE (In addition to the Assessment procedure)

1. A full history of diabetes or impaired glucose tolerance will be taken. Note the year of diagnosis, treatment(s), name of the person supervising the patient, such as General Practitioner or Consultant (stating which hospital), and any periods of hospitalisation, hypoglycaemic or hyperglycaemic episodes.

2. Ensuring that the patient has clean hands, undertake a Glucometer reading. If greater than 14 mmol/L, immediately refer the patient to the diabetic team and/or General Practitioner. In addition, all patients will be referred in writing to the diabetic team, using the appropriate form supplied. An admission date for this group of patients should be planned in conjunction with the diabetic team and a date arranged when the diabetes is stable, unless surgery is urgent, in which case the patient may require treatment at acute site, with combined care by the Diabetic and Surgical teams.

3. All patients will have the following Pathology requested, HbAIc, U&E, LFT, FBC. All results need to be checked prior to admission by the assessor, and treated appropriately.

4. All patients will have their Body Mass Index assessed.

5. The Dietician will be informed of the admission date, ward, site, diagnosis, and current medication. A suitable diet will then be available on admission for the patient.

6. Diet controlled diabetics will be Nil By Mouth as usual, with Glucometer Blood Monitoring to commence on admission.

7. Patients taking oral hypoglycaemic, should discontinue on day of operation, and recommence post operatively with diet. Glucometer Blood monitoring should commence on admission.

8. The Diabetic patient controlled on insulin should ideally be admitted the day prior to surgery, others early on the day of operation, and placed first on the theatre list. The anaesthetist must be informed of the patients admission, to allow their assessment and possible commencing of a sliding scale insulin infusion, depending upon the type of diabetes, and complexity of surgery.

9. The patient should be informed of the admission date, and details of the referral together with contact name(s) and telephone number(s

10. The patient should be informed of the admission date, and details of the referral together with contact name(s) and telephone number(s).

APPENDIX 7

COLLABORATION HOSPITAL

Initially, fifty hospitals were approached and informed of the assessment clinic, and its proposed benefits for patient care. The Chief Executives were asked to outline their current assessment clinic undertaking, and asked if they would be interested in collaborating.

Only one hospital wished to collaborate, consisting of two general hospitals with an additional day surgery site seven miles apart, which were amalgamating. Population 300,000. The hospitals had 27 elective beds and 226 beds for acute and elective use at the one site and 31 ENT beds at the other. The hospitals have 5 theatres, 3 theatres, and 3 respectively.

Several discussions and meetings resulted in an agreement to provide information as to the waiting list length, the length of patient stay without assessment, the failure rate of patients to proceed with surgery that is cancellation, and the number of patients not arriving for admission. It was later found that the data was not kept routinely, and no provision was in force to allow for their collation. Assessment clinics were commenced however, although undertaken by medical staff with nursing assistance in identification of nursing and social issues.

The objectives of the Pre-operative Assessment clinics were:-

- To provide a more efficient use of resources by identifying potential problems that could delay or cancel operations.
- To inform and educate patients in preparation for surgery, increasing patient satisfaction and outcomes through improved communication.
- To facilitate an improved admission process which would increase patient throughput and prevent a delay in patient discharge and lead to a reduction in length of stay
- To reduce the intensity of work for junior doctors.
- To identify the causes of DNA's and cancellations.
- To review and subsequently audit the pre-operative assessment clinics, in order to assess the benefits to both the patient and the surgical directorate, to introduce and monitor practical interventions aimed at improving the service.

Methodology

The assessment clinic began in January to March 1997. Five clinics were held each week. The data is the result of three months assessment clinics, and results were compared with the same three months from the previous year. The reasons for operative cancellations in January - March 1996 are indicated on the following chart.

REASONS	JANUARY	FEBRUARY	MARCH	TOTAL
No beds	3	2	0	*5*
On holiday	3	3	5	*11*
Patient unfit	19	7	8	*34*
Personal reason	6	9	6	*21*
Operation already performed	0	3	2	*5*
Reason unknown	2	0	2	*4*
Work commitments	0	0	2	*2*
Already in-patient	0	0	2	*2*
Operation not required	8	3	3	*14*
Anaesthetist unavailable	2	2	0	*4*
Hospital cancelled	3	2	0	*5*
No theatre time	0	0	2	*2*
DNA	1	0	1	*2*
Emergency took priority	0	0	2	*2*
Patient died	1	0	0	*1*
Patient refused operation	1	1	0	*2*
TOTAL				*116*

Table 131 Reasons for cancellation January - March 1996 before assessment clinics

The clinics were undertaken "by both nursing and medical staff". The nursing staff organised the routine investigations, e.g. phlebotomy and ECG, the house officers examined the patient. Consultants were available for advice as required.

Data outcome

Number of patients asked to attend 411 (100%)

Number attended 359 (87.3%)

Number DNA/CNA 52 (12.6%)

Number cleared for admission	325	(79%)
Number removed from waiting list	3	(0.73%)
Number whose surgery was deferred	18	(4.4%)

With regards those patients who were expected but whose surgery did not proceed for varying reasons, the following demonstrates the comparison from January - March 1996 prior to assessment and January - March 1997 during assessment, for each of the five Consultants who took part.

1996	36	20	32	15	13	116
1997	3	6	4	3	4	20

General Comments

The junior doctors were generally satisfied with the organisation of the pre-operative assessment clinics, only one was dissatisfied with one particular clinic. "The clinics generated extra time for the doctors. This meant that the doctors were available on the ward to organise and carry out other ward tasks." Further comments stated that the "work intensity reduced when patients attended a pre-admission clinic, reducing their workload and avoiding last minute panics to obtain patient details prior to surgery." The doctors stated "there was a noticeable difference observed between those patients who attend a pre-operative assessment clinic and those who do not." The doctors generally liked the nurse assisting in the clinics, and that the nurse "highlight complications which required a change in the patient care management prior to surgery."

The doctors also stated that overall, "pre-operative assessment clinics improved the quality of patient care." "The patient is prepared for their operation, their fears and anxieties are reduced as they have had the opportunity to ask questions at the clinics."

"...all consultant firms experienced a reduction in the number of DNA's and cancellations of surgical admissions since the inauguration of the pre-operative assessment clinics. Application of a statistical test confirmed the difference between the two years, as significant at a probability level of $p < 0.05$."

Discussion and Conclusion

- "Reduced DNA and cancellation rates"

- "Patients more informed and educated about the surgical patient they are to undergo"

- The doctors found that they spent "prior to pre-operative assessment, 45 minutes with a patient compared to 10 minutes within a pre-operative assessment clinic."

- Early identification of complications regarding the patients health "ultimately avoided bed blockage and reduced length of stay, DNA's and cancellations as a result of an unfit patient."

- There "was a reduction in the frequency of DNA's and cancellations".

The collaboration NHS Trust have plans to increase the number of assessment clinics which are undertaken and, as a result of identifying a number of patients found unfit to proceed with surgery, plan to encourage patients to develop their fitness whilst waiting for a date to undergo surgery.

APPENDIX 8

NATIONAL AND INTERNATIONAL INTEREST

As the elective surgical unit became known in the district and nationally, requests to provide a presentation/lecture on the changes within the unit were received together with informal visits. These changes including the assessment clinic were presented by the Medical Director, the Business Manager and the Nurse Specialist.

Within a short time, international interest had grown, and lectures and seminars were presented to groups from Sweden, Denmark, Hungary, Poland, Russia, a Hospital Director from Jericho Hospital, Palestine, and more locally, to Sir William Staveley Chairman, North Thames Regional Health Authority, Ron Kerr, the Regional General Manager for North West Hertfordshire, Dr. Barry Tennison, Director of Public Health and Mr. Derek Rawlings Chairman and at another date Ms. Jenny Griffiths, Chief Executive also from Hertfordshire Health Agency, from Mount Vernon & Watford General Hospital, Luton & Dunstable NHS Trust, Central Middlesex Hospital NHS Trust, Hillingdon DHA and FHSA, Richard Page MP House of Commons for the National Audit Office, and the then Shadow Health Secretary, Gerald Malone MP The Junior Doctors Hours seminar, for South Thames Regional Health Authority Regional Task Force, The Role of Research and Audit in Evidence-based Healthcare Research and Development, Anglia & Oxford Regional Health Authority NHS Executive, and Changing Secondary Care - Successfully, a conference with national interest, organised by ARK B Marketing Limited. A summary of the changing process was noted, together with the new role of the nurse run assessment clinic, its methodology and outcomes.

APPENDIX 9

PATIENT SURVEYS

Although biased by the fact that the surveys were conducted in the assessment clinic, by handing the patient a sheet to complete in confidence and return or place into a box, the main objective of the audit was to determine the effectiveness of the assessment clinic in line with the assessment procedure. The survey was compiled and audited by the Clinical Audit department at the NHS Trust. The following is their report.

Secondary objectives were to:-

- examine the patient awareness of the identity of the interviewer;
- to ensure that the planned procedure and its likely outcome were explained adequately to the patients;
- to identify patient perceived problems with the assessment process; to monitor actual length of stay with the projected length of stay;
- to identify if patients felt prepared for their admission after attendance at the assessment clinic;
- to determine whether patients were given an explanation in the event of their operation being cancelled;
- to identify any difficulty that patients experienced when locating other departments associated with the assessment clinic.

Methodology

A pilot study of 9 patients was undertaken initially to test the methodology. Following this the study was extended to a total of 200 patients. These were identified from the assessment clinic bookings and included ENT, General Surgery, Urology, Orthopaedic and Orthopaedic patients seen between the 7th October and 26th October 1996.

SOURCE OF DATA

Audit pro formats.

STANDARDS

Standards contained in the Procedure of the Assessment document were used to measure the effectiveness of the assessment clinic.

THE AUDIT PROCESS

The clinical audit department was asked to assist with the audit design, data collection and subsequent analysis.

The pro forma and database were designed to collect the information which was based on the standards.

Patients were asked to complete and post the audit pro forma following their stay in hospital in a pre paid envelope.

The data was analysed and the report prepared by the clinical audit department.

CONCLUSIONS

Only 127 patients (63.5%) returned their pro forma and some of those had not been fully completed.

GENERAL FINDINGS

Whilst the service provided in the pre-operative assessment clinic was generally well received by patients, certain areas could be improved and enhanced with some simple changes.

13% of patients experienced some difficulty in finding the assessment clinic. Findings indicated that directions/signs were inadequate.

The standard waiting time of 30 minutes was met in 83% of cases. However 21 patients (17%) waited longer with 8 of these waiting over an hour. 6 of the 8 patients recorded being given no explanation for the delay.

Some patients were confused as to whether they saw a nurse or doctor (9 did not know and 13 answered incorrectly).

56 patients(44%) were asked to see a consultant following their assessment and 36 of these were seen within 20 minutes.

98 patients(77%) asked their assessor questions about their admission/operation. Only 1 patient reported not having their questions answered. 84% of the patients felt that their assessment clinic visit prepared them for their admission.

The length of stay projected by the assessment clinic was generally accurate. However, 5 patients who were booked as day cases stayed overnight. Two of these stayed one night and three two nights. One patient booked overnight stayed as a day case only.

RECOMMENDATIONS

- Directional signs in the hospital and instructions sent to patients may need reviewing.

- As 48 patients (38%) indicated that they would have liked to purchase a drink, a vending machine could be introduced for a trial period.

- Patients should be given the full identification of the assessor, a thorough explanation of the operative procedure, likely outcomes, possible complications and expected length of stay.

- All assessment clinic staff should wear clear identification badges/lapel badges.

- Appointments should be rescheduled for 20 minute intervals (currently 15 minutes), this should reduce the waiting time for patients.

- The relevant consultants should be approached to reconfirm the times of their availability for clinics and patient appointments should be rearranged accordingly.

- Patients should be given a contact telephone number for use in the event of any queries regarding admission, hospitalisation and discharge planning.

- Most patients felt adequately prepared for their admission. However the effectiveness of the assessment clinic could still be improved by implementing the above recommendations.

As a result of the above audit, certain changes were discussed and many implemented. It was decided to make certain changes in the first instance, and to monitor their outcomes prior to making further changes. Changes implemented were those that could be most directly be affected by the assessment clinic.

Directional signs - Additional signs were placed at strategic positions within the hospital to improve ease of location.

Drinks machine - Investigation showed that the hire of a drinks machine was possible only over a three year period, with the cost being prohibitive. Attempts to obtain funding internally and through sponsorship were unsuccessful. As the opportunity arises, patients are offered a beverages, but this is dependant upon the assessor having time to make the drinks between interviewing patients.

Identification of assessor - New lapel badges were provided. The hospital name badge with photograph being in use prior to the audit, failing to provide adequate sized lettering that all patients could read at a 3 foot distance.

Appointments for major surgery and those with learning and physical disabilities were rescheduled but to 30 minute appointments, those for minor or intermediate surgery for 15 minutes.

Consultants were asked to re-confirm their availability and time of attendance, and promised to be more punctual.

All patients were given a contact name and telephone number to ensure that any queries could be dealt with by their assessor.

Having made the above changes, a stock was taken of the outcomes, and a further audit undertaken nine months later.

SOURCE OF DATA

Audit pro forma.

STANDARDS

Standards contained in the Procedure of the Assessment document were used to measure the effectiveness of the assessment clinic.

THE AUDIT PROCESS

The pro forma and database were designed to collect the information which was based on the standards.

Patients were asked to complete and post the audit pro forma following their assessment visit and to place it in a box prior to leaving the department.

All patients attending the clinic were given a pro forma to complete. The outcomes of the first one hundred patients are noted below.

CONCLUSIONS

- All 100 patients returned their pro forma.
- 3% (3) patients were instructed to attend the clinic by telephone contact only, 97% (97)) by letter, and 6% (6) by both telephone and letter.
- All found the instructions clear.
- 100% (100) correctly identified their assessor as being nurse or doctor.
- 53% (53) were asked to return to see the Consultant.
- 100% found the information provided about the admission and procedure to be sufficiently detailed.
- When asked if the staff were approachable 37% (37) said yes for Consultant, 91% (91) nurse and 19% (19) doctor. 1 patient felt unsure of the Consultant.
- When asked if the patient was comfortable asking questions from the Consultant, nurse or doctor the response was 35% (35) Consultant, 90% (90) nurse, 18% (18) doctor. 1 patient was unsure of the Consultant.
- Asked if the visit had been useful 100 % replied yes.

The age range of the patients was :-

Under 25yrs 4 patients 26 - 35yrs 13 patients

36 - 49yrs	22 patients	50 - 50yrs	7 patients
60 - 69yrs	15 patients	70 - 70yrs	20 patients
over 80yrs	2 patients	not recorded	16 patients

Most of the comments from patients were complimentary, and demonstrated that patient anxiety had been relieved by the attendance of the assessment clinic. All patients stated that the attendance had been useful, and that the information about the admission was sufficiently detailed. Although some patients (1%), found that the staff were not entirely approachable the remaining 99% found that the staff were both approachable and that patients could seek answers to queries. The assessment clinic has in its objectives the aim to provide clear information to the patient with regards the admission and surgery; to reduce patient anxiety and stress associated with the admission; and an interview within 30 minutes of appointment time. This audit although small has confirmed that the first of these particular objectives are met with the provision of the assessment clinic, and the third is implied in the comments as listed below.

When undertaking this smaller audit, it was felt that the patient response to ten questions, to be completed within the assessment clinic would be preferable to postal questionnaire covering many questions. A further audit will now be undertaken to query other objectives associated with the assessment clinic, to ascertain the patients perspective upon those topics.

Additional comments made included : -

"Made to feel totally at ease". "Thank you for explaining what is going to happen I find it have relaxed me." "Very thorough and very clear. Helped put me at ease." "Prompt assessment Thanks" "Did not receive map to get to hospital" "Perhaps an appointment time on the original letter would be a help - rather than having to telephone after receiving the date" "Obviously good appointment system - no waiting, no crowds" "Very relaxed interview" "..calm and reassuring manner which made me feel more relaxed about my visit and about coming into hospital" "All staff concerned were more than helpful" "Care taken to explain what is being done and why". "Excellent care and most reassuring" "Do find talking to consultants difficult - find they adopt the line that what they say is right and if you are requesting information you are somehow going against their advice/diagnosis - sometimes patients do have "fears" need sometimes alternatives rather than yes or no."

APPENDIX 10

OUTCOMES OF ASSESSMENT PER CONSULTANT

OUTCOME FROM ASSESSMENT * CONSULTANT Crosstabulation

Count

		CONSULTANT												
		1	2	3	4	5	6	7	8	9	10	11	12	Total
OUTCOME FROM ASSESSMENT	ADMIT elective	223	573	359	292	738	482	273	788	1116	235	151	1	5231
	DEFER TO ACUTE	14	22	10	13	90	12	6	55	57	30	2		311
	DEFER TO GP	1	6	1	3	8	3	2	7	10	1			42
	DEFER TO OWN CONSULTANT	2	10	6	3	14	6	4	32	56	2	1		136
	DID NOT ARRIVE	33	88	52	47	61	97	70	132	179	25	7		791
	ADMIT STAT	1	2			2				1				6
	ADMIT PLANNED HHGH	1		1		4	3		1	1				11
	DEFER TO L & D							2				1	1	4
	MED/ANAESTHETIC REFERRAL	1	1	1	3	7	4	1	6	12				36
	TREATED IN POA									4				4
	DEFER BY OWN CONSULTANT	1	2	1	1	2		1	5	19	2			34
	R/O WAITING LIST BY CONS	1	1		2	1			20	65	6			96
	SUSPEND WAITING LIST BY CONS				1				4	1				6
	R/0 WAITING LIST NOT S/B CONS		2			2				5				9
	SUSPEND, PATIENT REQ	1	4	2	1	5	2	2	8	10	1			36
	OTHER INVESTIGATIONS				3	1			8	5	1			18
	CNA/PATIENT CANCELLED	10	25	11	15	33	26	13	54	77	13	4		281
	DEFER HYPERTENSION	4	9	6	7	12	3	2	20	16	11	2		92
	SUSP SOCIAL, ULCERS ETC				2	2	1		2	4				11
Total		293	745	450	393	982	639	376	1142	1638	327	168	2	7155

APPENDIX 11

OUTCOMES FROM ASSESSMENT

OUTCOME FROM ASSESSMENT

		Frequency	Percent	Cumulative Percent
Valid	ADMITelective	5231	73.1	73.1
	DEFER TO acute	311	4.3	77.5
	DEFER TO GP	42	.6	78.0
	DEFER TO OWN CONSULTANT	136	1.9	79.9
	DID NOT ARRIVE	791	11.1	91.0
	ADMIT STAT	6	.1	91.1
	ADMIT PLANNED acute	11	.2	91.2
	DEFER ent acute	4	.1	91.3
	MED/ANAESTHETIC REFERRAL	36	.5	91.8
	TREATED IN POA	4	.1	91.9
	DEFER BY OWN CONSULTANT	34	.5	92.3
	R/O WAITING LIST BY CONS	96	1.3	93.7
	SUSPEND WAITING LIST BY CONS	6	.1	93.8
	R/0 WAITING LIST NOT S/B CONS	9	.1	93.9
	SUSPEND, PATIENT REQ	36	.5	94.4
	OTHER INVESTIGATIONS	18	.3	94.6
	CNA/PATIENT CANCELLED	281	3.9	98.6
	DEFER HYPERTENSION	92	1.3	99.8
	SUSP SOCIAL, ULCERS ETC	11	.2	100.0
	Total	7155	100.0	
Total		7155	100.0	

APPENDIX 12

ACCUMULATIVE LENGTH OF STAY

Day case is a stay in which patient does not stay overnight Most of the 1 day stay patients had surgery in late afternoon

General Surgery	Length of stay in in days	No. patients
Anal fistula	2	8
Exc. anal tag	1	7
Anal polypectomy	1	9
Anterior perineal resection	19	7
Anterior resection bowel	12	5
Abd. Aneurysm Repair	13	5
TURBT	5	20
TURBN	2	2
WLE Breast	3	22
Open Cholecystectomy	5	38
Mini Cholecystectomy	5	19
Lap Cholecystectomy	4	25
Cystoscopy	day case	143
Choledochojejenostomy	20	1
Endoscopy	day case	132
Exc. Gynaecomastia	day case	4
Partial Gastrectomy	13	6
Hernia - Inguinal	2	122
Epigastric	1	4
Umbillical	1	6
Incisional	3	12
Femoral	2	9
Haemorrhoidectomy	4	29
Hemicolectomy	11	10
Lumpectomy	day case	60
Mastectomy	5	19
Mastoidectomy	3	2
Myringoplasty	day case	5
MUA Fracture Nose	day case	8
Nasal Polypectomy	2	20
Nephrectomy	11	9
TURP	7	81
Pyeloplasty	13	4
Parotidectomy	3	2
SMR/SMD/BAWO	1	45
Septoplasty	1	9
Thyroidectomy	4	12
Tonsilectomy	2	42
Whipples Procedure	8	1

ACCUMULATIVE LENGTH OF STAY

Orthopaedics	Length of stay in days in days	No. patients
Arthroscopy	Day case	263
Arthrodesis	4	5
ACL/PCL	5	8
Acromionectomy	2	2
Arthroplasty	6	1
AKA	11	1
Bandotomy	3	4
Coccygectomy	3	5
CTD	1	12
Clowards fusion	8	2
Bakers cyst	day case	1
Discectomy	11	28
Dupytrens release	1	8
Spinal decompression	11	2
extensor release	day case	2
Excision ganglion	day case	15
exostectomy/ins silastic	2	1
Fenestration	7	4
Wrist fusion	2	1
Spinal fusion	10	1
THR	11	79
Hallux valgus correction	3	9
Hemi-arthroplasty	6	4
TKR	11	40
Kellers procedure	1	3
Laminectomy	16	2
Metalwork removal	1	68
R/O AO nail	2	1
MUA cervical spine	3	3
MUA shoulder	day case	2
MUA knee	1	6
MUA hip	3	1
MUA lumbar spine	day case	1
Metatarsal osteotomy	3	7
Osteotomy	5	22
femoral osteotomy	5	1
Wilson osteotomy	2	1
double osteotomy	7	8
patellectomy	2	1
straighten/shorten toes	2	8
Trigger finger release	1	7
Zadeks	day case	5

TABLE OF FIGURES

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