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An investigation into the effects of parental accompaniment during the induction of anaesthesia in day case children

EDWARD ALAN GLASPER

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Faculty of Medicine

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Abstract

Faculty of Medicine
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by Edward Alan Glasper

The involvement of parents during the induction of anaesthesia in childhood is a matter of considerable controversy. This study describes an investigation which examines the effect of parental presence at anaesthesia induction on a cohort of 205 randomly selected children attending hospital for day case surgery. Each child was filmed in the waiting room of the theatre and during the procedure of anaesthesia induction. A total of 111 children were filmed with their parents and 93 without. The study incorporates a number of other variables including age, gender, method of induction and the provision of information to parents.

The investigation utilizes 21 edited video tapes of randomly selected children from the cohort with each tape incorporating up to 16 clips of film showing children with and without their parents. The study details the judgemental responses of 525 health care professionals including anaesthetists and paediatric nurses recruited from children's units across the UK. The results of the study demonstrate positive benefits in having parents accompany their children to the anaesthetic room. In addition, the study discusses the role of preadmission programmes in the preparation of families for hospital admission.

An analysis of the data suggests that there is little evidence to justify policies which prevent parental access to anaesthetic rooms when children are attending hospital for day case surgery.
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Produced and co-ordinated by E. A. Glasper

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CHAPTER 1
Historical aspects of Childhood

Professional paediatric nurses are now firmly committed to the concept of family centered care and family advocacy. Through this concept the paediatric nurse strives to improve standards of excellence in care. The promotion of family involvement in care over the last three decades has resulted from the advancement of knowledge related to the welfare of children in hospital and the potential harmful effects of inpatient admission. The growing recognition of this has caused many professionals involved in the care of children to question their practice. The changes which have emanated, often from parental aspirations to become more clinically involved with their own sick children, have imposed a significant challenge for those professionals to become more proactive in their care practices. Child care in the UK is currently at an all time high, but this was not always so. In the 1990's, children are regarded as innocent but vulnerable individuals and this is recognised by society through robust legislation designed to protect them. Whilst child care is normally facilitated through the family, when this fails, the community has a statutory responsibility to act in "loco parentis" until such time that the family can resume care or the child is no longer in danger.

Concepts of childhood

"To spare the rod is to spoil the child" - so goes the common saying which was believed to be the prevailing philosophy of yesteryear. Although widely attributed to the Victorian era, such concepts belong to an earlier past. Individuals reading the Water Babies or Oliver Twist may perceive the tales therein not as a true representation of the past which is what they are, but rather as some quaint two dimensional aspect of a children's holiday time film. This does an injustice to the authors (Dickens, 1907 and Kingsley, 1928), who today might be regarded as documenters of social injustice.

Perceptions of childhood have varied and attitudes have ranged from the child being inherently evil to inherently good. Such perceptions have facilitated opposing child rearing practices. Ancient man had little qualms about killing unwanted children especially if they were sick or showed evidence of handicap (physical or mental). During the middle ages when life expectancy was short, the infant mortality rate was extremely high and child rearing practices were very
harsh. de Mause (1974) believes the high infant mortality rate contributed to the lack of care shown to children, but this is what characterised the period. In his view, childhood as such did not exist with children being perceived as miniature adults and as a consequence child abuse both physical and sexual was common during this period.

Attitudes gradually shifted and from the middle ages up until the 17th Century one can see subtle changes. Although childhood was viewed simply as a precursor to adulthood and children were held to be accountable for their own actions, this period is characterised by ambivalence. Children were perceived as more important than in previous centuries, possibly more fragile and requiring care. Greater economic prosperity linked to an interest in education (at least for some) led to the development of closer relationships between parents and children. However, the question as to whether children were intrinsically evil or good remained unanswered and was responsible for the diverse child rearing practices which characterised the period.

From the 18th Century onwards, attitudes towards children changed markedly. Locke and Rousseau had innovative views on the nature of childhood. Locke describes the child as a "Tabula Rasa" or blank slate. The effect of heredity is denied and heavy emphasis placed on the influence of the environment. Rousseau concurs with Locke's "Tabula Rasa" hypothesis, but asserts that children are innocent by nature and corrupted by the adult world. Rousseau firmly believed that children should be protected from vice as virtue is already in their nature. These pre Freudian philosophers had enormous influence but sadly this was not reflected in child rearing practices, at least for the mass of the population, until the second half of the 19th Century.

In marked contrast to the altruistic stance of Rousseau, society had the influence of the puritan non-conformist Wesleyian movement. John Wesley himself was a stringent martinet who believed that children were sinful and evil by nature. Only through physical punishment and fear of the rod could children be saved from eternal damnation. That such attitudes have persisted through to the 20th Century is indicative of the influence of the man and his movement. The whole history of childhood is but a mournful story of institutional abuse. Solitary confinement, murder, abandonment, beatings, terrorisation, and sexual abuse make up the web of abuse which persists today in many parts of the world.
Freud may have changed perceptions of childhood and therefore parent-child relationships, but the emancipation of children is yet to be completed.

Attempts to promote care for children in a meaningful altruistic way began in 1739 with the work of Thomas Coram. Coram, a retired sea captain, had spent most of his working life in the New World. It is reported that on his return to London, he was horrified to find dying babies in the gutters and the corpses of babies rotting on the dung heaps. Despite major improvements in social provisions, dead babies were still a common site in London streets as late as the 1890's. Coram secured the patronage of many influential individuals of the period and was granted a Royal Charter to open a Foundling Hospital in 1739. The Foundling Hospital, the remnants of which can still be seen in Guildford Street, London, first opened its doors in 1741. Coram worked for many years to save sufficient funds to build the hospital and it would have caused him great personal grief to realise, that of the 15,000 children admitted during the years 1756 - 1760, only 4,400 lived to adulthood.

Nicols and Wray (1935) highlight the evils of indiscriminate admission to the Foundling Hospital during its early years of operation. This resulted in many iniquitous practices one of which consisted of parents bringing their children to the Hospital when in a dying state, thus saving themselves the cost of their burial. It must be pointed out that the Foundling Hospital was essentially a place of refuge for unwanted children, not a hospital for sick children (Besser, 1977). The high attrition rate prevalent among the children admitted to the Foundling Hospital can be attributed to childhood infections and the appalling state of ignorance of the spread of disease. The high mortality figures were a constant reminder and warning for those foolish enough to want to place children together in institutions. Despite the high attrition rate, the concept of childhood was changing, albeit slowly. The dawning of the age of philanthropy was about to begin and with it a rosier view of childhood. It is interesting to note that during the early part of the 18th Century, the fledgling states of America were desperate for manpower and one might never know whether Coram was acting from altruistic or personal reasons when he envisaged the foundling hospital.

Certainly in later years the older children were sent to North America to serve apprenticeships. It should be remembered that as late as the 1840's children between the ages of 9 and 18 were transported to Point Puer in modern day Tasmania, formerly Van Diemans land, for petty crime. In all, a total of 2,000 boys were transported during these decades. Even after World War II, orphaned
children were sent to Australia and many bear the external scars of this modern day transportation to this day.

By 1889 the law to prevent cruelty to children was passed ironically some years after the prevention of cruelty to animals act. The passing of the "prevention of cruelty to children act" represented a benchmark in the evolution of children's services, improvements to which continues to this day. That a community should accept responsibility for the welfare of children and enshrine this responsibility in legislation, is indicative of the determination of a society to effect change. The golden age of British capitalism which culminated in the Great Exhibition at Crystal Palace in 1860 and therefore prior to the first Education act of 1870 and the prevention of cruelty to children act of 1889, was also the age of institutionalised child abuse. Fortunes were established literally and metaphorically on the backs of children. The industrial abuse of children in some parts of the third world today has parallels with our own dark past. Vividly described by Kingsley in the Water Babies, Tom the chimney sweep, is the symbol of the exploited child. Perhaps the abused children of the past, who created the early capital wealth of the nation, provided the necessary precursors to later improvements for the children of the future. Hence the modern concept of childhood and all this conjures up, simply did not exist, at least for the greater percentage of the population until after World War II. As childhood was simply a precursor to adulthood, children were held accountable for their own actions and punishments were hard and swift for those who transgressed.

The Hospital for Sick Children - Great Ormond Street, London

The opening of the Hospital for Sick Children, Great Ormond Street, on the 14th February 1852, was a major triumph for childhood. It is interesting to speculate why it took so long for a sick children's hospital to open given that the Foundling Hospital had opened over a century earlier. Despite the existence of children's hospitals on the continent, the pressures to build similar institutions in Britain were resisted for what were then believed to be genuine reasons. Individual well-known physicians of the period, such as Dr George Armstrong (Miles, 1986) postulated that children and their parents would not be separated. He further stated that parents would not be able to look after their children in hospital because of economic pressures. In these respects, Armstrong was particularly prophetic. The main reason put forward against inpatient care for children was the fear of infection. This absence of tertiary inpatient care led to the
development of outpatient treatment co-ordinated through the provision of local dispensaries. The appalling sanitary conditions, the overcrowding and the general poverty prevalent at the time, ensured that the little care available in the home was of a poor quality (Kosky, Lunnon, 1991).

After nearly a century of outpatient care, co-ordinated through the dispensary movement, further calls for inpatient care were voiced. The champion of the inpatient initiative was Dr Charles West, a brilliant physician who worked for a number of years from 1839 at the Royal Waterloo Hospital for Mothers and Children formerly the Universal Dispensary For Children. West believed that inpatient care was essential, having witnessed first hand the squalid conditions of London homes during domiciliary visits. West, whilst appreciating the perceptions of his earlier peers such as Armstrong, was convinced of the need for inpatient care. Charles West was able to secure the powerful patronage of, among others, Queen Victoria and Charles Dickens. As a consequence, the lease of a large house in Great Ormond Street was secured and the first children's hospital came into being. That the deleterious effect of a hospital admission on a child was recognised prior to 1852 is surprising, but the philosophy of the first children's units reflected this with parents as participants in care. It must be remembered that the first children's hospitals were built and staffed in the pre-Nightingale era. The professional ethic which was the hallmark of the Nightingale model was also based on military discipline. Such a military background left little place for non-professionals and parents were sadly relegated to this position. Nursing, in endeavouring to raise its status, sadly neglected the welfare of families. This only became apparent many years later following World War II.

It is interesting to note that the original aims of the Hospital for Sick Children were:

1. To provide for the reception, maintenance and medical treatment of the children of the poor during sickness and to furnish them with advice.

2. To promote the advancement of medical science generally with reference to the diseases of children and in particular to provide for the more efficient instruction of students in this department of medical knowledge.
3. To disseminate among all classes of the community a better acquaintance with the management of infants and children during illness, by employing it as a school for the education of women in the special duties of children's nursing.

That the giving of advice to families should receive such prominence is interesting and is perhaps the cornerstone of the family information centre movement. The Nightingale tradition changed subtly the dynamics of the early children's hospitals and military principles developed at Scutari during the Crimean War began to be applied. Whilst the initial children's units functioned essentially under the auspices of lay care with the encouragement of parental participation, this scenario was ultimately to change and it became a victim of the growing professionalism of nursing. That the move away from lay care to the development of professional paediatric nursing had disadvantages is beyond doubt, but the significance was not realised at the time. The growing professionalism of nursing ensured the gradual exclusion of parents from direct participation in care. The end result of this gradual process was the eventual establishment of strict visiting hours where parents were prohibited from visiting at a time convenient to them. Some hospitals developed visiting schemes that allowed parents to visit only once per month. It took nearly a century for this to change. The establishment of 3-year professional training for nurses culminating in the Registration Bill, receiving its Royal Assent in December 1919 (Miles, 1986) resulted in a denigration of the role of parents.

The patriarchy of the medical profession appears to have been adopted by the emerging nursing profession and went hand in glove with the "detached persona" developed by nurses. This reflected matriarchy was to stifle developments in nurse-patient interaction for decades. A genuine belief that withholding information from patients and relatives was effective in reducing anxiety ensured that communication was kept to a minimum. This has to be viewed in the context of the society of the era which still lacked universal suffrage. The "persona non grata" status of parents and the rigid barrier nursing techniques of the late nineteenth century coupled with the dogma of bed rest, prolonged and continuous, must have made life for inpatient children lonely and depressing. Children then were often captives in their own cots and as late as the 1970's restraining jackets were used to keep children firmly to their bed area. This is not to indicate that care was callous, but quite the contrary, care was meticulous, as was the attention paid to cleanliness on the wards in which the
children were nursed. As much time was spent in cleaning as was in nursing, and the old saying that "cleanliness is next to Godliness" was the motto of most wards. This can be attributed to the obsessive fear of infection which is perhaps hard to appreciate in the late 20th Century when anti-microbial drugs are taken for granted. The only measures which could be taken to prevent the spread of infection in the nineteenth century were in the use of isolation techniques. Infection was the major killer and parents were feared to be vectors of disease as were other children and this ensured a lonely existence for sick children in hospital. Late 19th Century photographs plus contemporary descriptions of life on the wards at that time reveal an environment which can only be described in today's terminology as sterile.

The emphasis on paediatric nursing care focused sharply on the physical plane. If children had emotional needs these were seldom recognised or appreciated and it was not until the 1960's that substantial change in this domain came about. The recognition that children had emotional needs came about slowly, but were finally distilled in the Platt Report (1959). This government white paper recognised the emotional needs of children and highlighted the plight of children in hospital. The report confirmed that separation from a loved one was the greatest single cause of distress in young children admitted to hospital. The emancipation and rehabilitation of parents was about to begin.

For the Centenary celebrations in 1952, the Hospital For Sick Children Great Ormond Street commissioned a documented history (Twistington Higgins, 1952). In this little book parents do not get a mention. The motto of the hospital, "The child first and always", did not at that time concentrate on partnership in care at all. Likewise, West's own text published in the early years of the hospital (West, 1908), apart from stating that a nurse will receive a mother's gratitude, mentions parents hardly at all.

Relatives were excluded because they were likely carriers of disease and the potential disturbers of the smoothness of long established ward routines. The visiting times in children's hospitals were severely restricted. In 1951, of the 1,300 hospitals in Britain which admitted children, only 300 allowed daily visiting (usually limited to 30 minutes) and 150 prohibited visiting altogether (Robertson, 1989). Parents were intimidated by white coated doctors and uniformed nurses who were confident about the rightness of traditional practice and inaccessible to discussion. Before the publication of the Platt Report, the Ministry of Health had
major concerns regarding the welfare of children in hospital. Despite recommendations from the Ministry after the founding of the National Health Service in 1948, most hospitals were unresponsive and continued the restrictive practices that had served generations. The methodology used by nurses was very much job assignment i.e. task allocation and the holistic nature of the family unit and its indivisibility was ignored.

Much of the pioneering work in the early post war years was carried out by John Bowlby, a London based Tavistock psychologist (Bowlby, 1951, 1974, 1988).

During the 1930's and 1940's, a number of clinicians had begun to make observations of the ill effects on personality development of institutional care. Sir James Spence, Professor of Child Health at The University of Newcastle's Royal Victoria Infirmary allowed mothers to stay with infants and young children, but did not extend his service to older children. When Bowlby published a WHO monograph (1951) entitled Maternal Care and Mental Health in which he highlighted the adverse influence on personality development of inadequate maternal care, the tide began to turn, albeit slowly. The WHO monograph stated,

"It is essential for mental health that the infant and young child should experience a warm, intimate and continuous relationship with his mother (or mother substitute) in which to find satisfaction and enjoyment."

Bowlby's later work indicated that maternal deprivation in infancy could have a profound effect on later child development.

One of Bowlby's researchers, James Robertson (1970) first described the 3 stages of separation:

**Protest**
This stage can last from a few hours to a few days. The child has a strong conscious need of his mother. His cry is based on the expectation built on previous experience that the mother will respond to his cries. He will cry loudly and look eagerly towards any sound that might prove to be his mother.
Despair
This stage succeeds protest and resembles a depression. It is a sign of increasing hopelessness. The child becomes less active and in the past this was often misinterpreted by nursing staff as a settling in period.

Denial
During this stage the child represses his longing for his mother and begins to lose his attachment. He appears, at least superficially, to have settled in to hospital routine and will respond positively if shallowly to kind adults.

Robertson's' work had a major influence on the committee chaired by Sir Harry Platt, which reported in 1959 through the government white paper "The Welfare of Children in Hospital."

Much of the credit for innovation must be attributed to the National Association For The Welfare of Children in Hospital (NAWCH) which was formed in 1961 specifically to implement the findings of the Platt Report. That this pressure group (now a charity) still exists and is alive and well, demonstrates the changes that remain to be undertaken in children's units across the U.K.

Generations of parents have expressed feelings of helplessness and inadequacy during their child's admission to hospital, when nurses have taken over care completely. This unhappy state of affairs continued long after the publication of the Platt Report and did not improve substantially until NAWCH accelerated the pace of change. That NAWCH became the champion of parents as consumers of health care, is not surprising given the traditional conservative history of the nursing and medical professions. The concept of family centred care is now beginning to gain universal approval and with it the concept of preoperative and preadmission information (N.B. Since 1991 NAWCH is now known as Action for Sick Children).

The Growth of Surgical Day Care

It is perhaps ironic that the current move towards day surgery first reported in 1909 by Nicoll (1909), was founded on the premise that separation of a child from his mother might be harmful. The psychological sequelae of a hospital admission has traditionally taken a back seat when considering the effects of hospital. The recognition that psychological trauma might be perpetrated on
children during their hospital stay has resulted from the work of John Bowlby and James Robertson. Much of their work was instrumental in providing the necessary precursors for the creation of the working party under the chairmanship of Sir Harry Platt (1959). The initiatives of the Platt Report and NAWCH did eventually do much to mitigate the psychological hazards of an inpatient stay for children. Whilst the Platt Report recommended that children should not be admitted unless absolutely necessary, there was little embodied within the text to promote the concept of day care. This was eventually highlighted through the publication of the Court Report (1976). The concept spread very slowly and more than a decade later there were still regions not participating in this venture. The arguments put forward by the proponents of day care are formidable and include earlier ambulation, lower costs and reduced psychological trauma. It is this, more than anything, which has captured the imagination of those concerned with the welfare of children in hospital. Significantly, less psychological disturbance has been reported in children undergoing day surgery than in children who have endured a traditional hospital admission including an overnight stay (Campbell 1988).

Although psychological stress in children is thought to be less when parents "sleep over" in hospital with them, for various reasons many parents are unable to stay even if this facility is offered by the hospital. Day case surgery eliminates this, although for day case surgery to be truly effective the provision of a paediatric community nursing service is desirable. Day case surgery, causes the minimal disruption to the family unit and is, therefore, a potent weapon in the prevention of psychological trauma caused by an inpatient stay. Some hospitals have purpose built day surgical units for children. Such units may cater for minor general surgery, orthopaedic surgery, oncology and endoscopy. Day units function in a variety of ways and some keep patients for a full day prior to discharge and others only half a day. Where a paediatric community nursing service exists, it forms an essential link between the primary health care team and the service provided by the hospitals. Without the provision of such services the operative management of children undergoing day surgery is fraught with difficulties. The community paediatric nurse facilitates a greater usage of day surgery (Atwell and Gow 1985), which in turns allows some hospitals to increase throughput and, therefore, reduce waiting lists. As modern child care recognises children as integral components of family units, it appears prudent to look upon parents as providers of care. This is in stark contrast to the attitudes of professional staff in the pre-Platt era. The preparation of the family
for impending surgery/admission and subsequent discharge should be mandatory if the full benefits of day surgery are to be achieved. Few health authorities have established programmes to do so. Hence the provision of day surgery/day care is insufficient in itself and only addresses part of the problem. As the health districts pursue day care policies as a financial response to an austere monetary climate what is often absent is investment in preoperative/preadmission information giving. The role of parents may be recognised through models of preoperative preparation and the provision of specific written information. This is undertaken by some units but by no means all. Many units demonstrate a lack of vision and an absence of policies, objectives and operational guidelines (Dept. of Health, 1991). Under the auspices of the government white paper "Working for Patients", some hospitals as providers of services, might wish to include preparatory programmes as part of their repertoire of services on offer to the patient. Prospective purchasers i.e. Health Commissions should be lobbied as to the wisdom of purchasing such services and should have demonstrated to them the effects in terms of customer satisfaction. Some of the expressed negative aspects of the white paper can perhaps be shown to be positive at least in respect to the consumers of health care.

One of the problems of day care and indeed inpatient care is that preparation for this begins in the outpatient department. Outpatient departments are notoriously busy and in the majority of instances, families spend considerable periods of time simply "waiting around". When a child is finally seen and his operation/investigation is confirmed, all most families want to do is go home as quickly as possible. Because parents are anxious and outpatient consultations are short, parents often forget what they have been told and any questions they may have wanted to ask, they only remember after they have left the hospital. This scenario is typical of the majority of parents who find the whole outpatient experience stressful. Despite the fact that many consultants check with the parent that they have understood the diagnosis and the nature of the proposed admission, for many it requires repetition. A majority of parents cannot cope with the sheer volume of information they are given in such a condensed period of time.

In such situations, the role of the children's nurse is of paramount importance and they should allow sufficient time to talk to parents, to check that they have understood and taken in the consultant's explanation. Treating children as day
cases offers a model of care which embodies a philosophy commensurate with the knowledge related to the welfare of children in hospital in the 1990's i.e. ensuring children remain safely within their families, with the parents remaining as principal carers. Has paediatric care come full circle and back to the tradition of George Armstrong's dispensaries? Certainly, when hospital inpatient care can be avoided, day care is an excellent way of caring for children. Children are different and, therefore, require a service which is geared to their needs. Day Care should not be implemented for financial savings alone, although this may be a useful spin off. The tremendous change in home conditions for the better have augmented and accelerated the move towards day care. It must not be forgotten, however, that there are many families, for example those living in Social Services bed and breakfast accommodation, who are not equipped to cope with day care. Therefore, all potential day case admissions should be screened accordingly. For any day case intervention to be successful, it is first necessary that parents be able to cope with pre-procedure instructions and the care of the child after treatment. Parents must also be willing partners and have agreed to day treatment following the giving of adequate information and an opportunity to discuss any anxieties.

Parents and Guardians must be available to stay, throughout the child's stay, in the day unit and be able to make arrangements for the care of the child at home. The effects of poor home conditions or homes without adequate facilities should be borne strongly in mind before deciding on day case intervention.

Standards for Children admitted as Day Cases (Thomas, 1991)

1. The admission is planned in an integrated way to cover pre-admission, day of admission and post-admission care, and incorporates the concept of planned transfer of care.

2. The responsible role of the parents is recognised by means of preparation and the provision of specific written information for day admission.

3. The child is neither admitted nor treated alongside adults.

4. The child is admitted to an area designated for day cases and is not mixed with acutely ill patients.
5. The child is cared for by identified staff specifically designated to the day case area.

6. Medical, nursing and all other staff are trained for, and skilled in, work with children and their families, in addition to the expertise needed for day care.

7. The patient management system is designed for ambulatory care so that every child is likely to be discharged within the day.

8. The environment is suitable for a child and in particular provides a pleasant area where the child can be active pre-operatively and pre-discharge, without annoyance to other patients.

9. The building, equipment and furnishings comply with safety standards for children.

10. The administrative and clerical system is able to handle large amounts of diverse material, so that essential documentation is completed before each child goes home and follow-up consultations are not delayed.

**Conclusion**

The wheel has turned nearly full circle and the principle that children have a right to the care and comfort of their principal care givers is enshrined in many government recommendations. The latest Department of Health publication "The Welfare of Children and Young People in Hospital" (1991) combines all previous reports and crystallises them into a robust series of guidelines covering all aspects of a child's life in hospital. The aim of this publication is to alert purchasing authorities to define explicitly in contracts with provider units, the standard they require for a high quality child health service. The guidelines include the standard that there will be access for parents to anaesthetic rooms to facilitate the calming and comforting of their children.
J. Ross Mackenzie (1927) in discussing the psychic element in patients about to undergo anaesthetic induction, highlights the dread that most people (children and adults) have related to losing consciousness. This fear may often be underestimated by anaesthetists and concealed by patients. The fear arises from the anxiety that they may not wake out of the anaesthetic. Thus the mental condition of the patient may be detrimental to the safe induction and maintenance of anaesthesia. The emotional trauma associated with anaesthesia induction has long been recognised and a reasonable assumption may be made that any procedure that will reduce a child's fear of anaesthesia is worth pursuing.

Smith (1968), has stated: "In children (who are) old enough to have fear or apprehension (during surgery), the emotional factor may be an even greater source of concern than the child's physical condition; (it is often) in fact the greatest problem of the entire operative course." The belief that emotional factors are just as important as physical parameters is not universal and as a consequence such factors may take a back seat in the overall management of children undergoing surgery. There is a continuing debate among researchers regarding the effects of a hospital admission during childhood. Vernon and Schulman's work (Vernon, Schulman, 1964), for example provides some empirical evidence that some psychological trauma is actually beneficial for emotional growth. It is certainly true that not all children react adversely to their hospital admission, anaesthesia induction and surgery. Most in fact survive unscathed from their ordeal. It must be emphasised that although most children do survive their hospital admission without apparent ill effect, it is the pre-school child who is most at risk from these effects. Vernon and Schulman's study confirms that pre-school children are the least stable in their response to hospitalisation and therefore require a greater degree of emotional support. Just as adults may vary in their ability to cope, so do children vary enormously. Miller (Miller, Brody, Summerton, 1988) has explored individuals abilities to cope with stress. They describe the individuals who scan for threat-relevant information as high monitors i.e. information seekers and those who avoid the acquisition of information as low monitors. They further describe those individuals who are able to distract threats as high blasters and those who are less able to do so as low blasters. This model assumes that individuals fall into the category of
monitors and bluters. Miller has further indicated (1987) that individuals who are high monitors and low bluters have sustained levels of high anxiety and arousal, whereas low monitors and high bluters are able to relax themselves over time. These findings have important ramifications for hospital personnel when dealing with parents of children and if children themselves fall into the same model they need differing strategies of preparation for stressful events. Studies such as these confirm that as children vary in their ability to cope so do parents. The concept of the family as an indivisible unit gives impetus to strategies of preparation/involvement which are multi faceted.

Preparation that involves parents is vital, as frightened parents are unable to provide emotional support for children, who in turn may be frightened or become frightened by the prospect of anaesthesia and surgery.

Smith (1961) highlights the importance of controlling the child's emotions and fears in preparation for surgery. The reasons for apprehension should be sought for and attempts made to deal with it. Although Smith writing in 1961 presents strategies to overcome emotional upset in children, he also discusses heavier types of sedation but not without an accompanying caveat i.e. that large doses of some sedatives in children can produce the opposite desired effect of making them wild and unmanageable. There exists then, a general principle that any procedure that will reduce a child's fear of anaesthesia and surgery will in turn reduce the traumatic effect. Pharmacological preparation typically consists of the use of sedatives, whereas psychological preparation uses a variety of strategies many of which it must be stated, have been used by anaesthetists for many years, but have never appeared in textbooks or journals. Katherine Jackson writing in 1951 (1951) described some of these techniques and highlights the serious side effects of drugs used as premedicants. The benefits of close interactions between the child and anaesthetist are explored and surprisingly mention is given to the wearing of street clothes for the initial interview with the child, as is the involvement of mother in the interview (if present). The method employed by Jackson details the following:

1. Learn whether the child has previous anaesthesia experience and determine its present influence.

2. Learn what preparation he has had at home - planned or accidental, positive or negative.
3. Explain that he is to be asleep and will feel no pain during the entire procedure, except for a sore throat after it is over.

4. Let him handle the mask (Yankauer) and explain that breathing the medicine will make him fall asleep.

5. Describe simply but realistically the dizzy, queer or sinking feeling that he may have as he goes to sleep.

6. Describe the operating suite and the dress of the personnel, including the anaesthetist.

7. Most important of all, do and say whatever is necessary to get him to accept the anaesthetist as a person whom he will be willing to trust.

Following this strategy, Jackson's evaluation showed:

1. Reduction of the undesirable side effects of heavy premedication.

2. Reduction in the amount of anaesthetic agent used.

3. Reduction in time for induction.

4. Reduction in excitement stages.

5. That operating rooms were relieved of the noise and confusion of stormy incidents.

Although the subject of parental contagion will be addressed in Chapter 3, it is worth reiterating comments attributed to Mellish (1969) when he indicates that parents come in all sorts of shapes and sizes, some good, some bad and some indifferent. Being unable to choose parents for patients, one must deal with those that come with the child. Mellish has clearly stated that the criteria for surgical success should be measured not only by intact wounds but also by intact emotions in children and their families.

Parental involvement, hospital policies and practice, anaesthetic staff and anaesthetic technique all have a bearing on how well a child may cope with an
anaesthetic induction. Some of these issues will be addressed throughout this text. "Where there's pus let it out" is as valid a maxim emotionally as surgically.

Deutsch (1942) indicated that memories associated with anaesthesia and surgery are enduring, remaining intense even many years after the event. She described the most important problem to be the state and behaviour of the patient before the operation, as this directly affected the later behaviour during the post operative stage. The factor of greatest importance for the successful conquest of preoperative anxiety, was the amount of preparation given during that period. This applied equally with adults and children and was not dependent on purely elective surgery, as preparation can be given even in emergency situations. The development of "fright neurosis" and associated sleeplessness, anxiety dreams, nightmares, general irritability is associated with patients who have poor preparation for surgery and the more unprepared a patient is, the greater the possibility of these symptoms appearing. The possibility of negative physiological symptoms is also high in unprepared patients for surgery and are unwelcome for the anaesthetist and surgeon.

The more prepared a patient is, the less is the chance of an anxiety reaction following surgery. It is important to realise that there are paradoxical situations where the amount of fear exhibited by patients may be out of all proportion to the situation at hand. Hence it is frequently found that the patient's fear is not commensurate with the stressor. The narcosis or anaesthetic may present the biggest threat to the patient and it has been reported by Deutsch that any loss of consciousness may be associated with dying. Indeed, she described patients recovering from general anaesthesia as having feelings of returning to life. Fascinating is the example of a child undergoing anaesthesia who suffered privation when his mother left him to go on a trip sometime before the operation and afterwards he described the operation as feeling separated from his mother, the world and life.

Eckenhoff (1953) has further described the deleterious effects of anaesthesia induction and has suggested a relationship between induction and personality changes.

In a study on 1008 paediatric patients, a questionnaire was mailed to the parents two months after otolaryngeal surgery. Replies were obtained from 61% of respondents and in 17% of cases the replies indicated a personality alteration in
the child which may have been attributable to anaesthesia induction and/or the hospital experience. Eckenhoff describes the incidence of personality change as being highest among the younger children and included night cries or terrors, temper tantrums, fear phenomena, for example afraid of the dark, unaccustomed odours, strangers or having the face covered. Bedwetting whilst a feature of the personality changes, also correlated to the administration of vinyl ether as an induction agent. The study emphasised the need for psychological preparation and suggested that the better the child's home preparation for the experience of hospitalisation and operation, the lower should be the incidence of postoperative personality changes. The use of written material is given prominence as is the dangers of relying on memory alone when giving verbal instructions to families.

Francis and Cutler (1957) describe the ages of 2½ years to 7 years as particularly critical when considering operative procedures as is the period of adolescence. They describe this period as one in which emotionally traumatic experiences, such as an operation, are particularly damaging. They attribute this to the tremendous physical and emotional changes occurring during these years where the children are less able to cope with traumatic situations. Children's fears of anaesthesia induction and related surgery are real and can, for the child, be unresolvable. It is therefore important to address these fears during the preoperative period. Francis and Cutler likewise address the issue of parental fear, supporting the contention that they sometimes overact to the event at hand and in the process transmit that fear to the child thereby exacerbating the situation. Written in 1957 the paper argues for parental, in addition to child preparation, during the preoperative period, giving examples of how this might be achieved. Despite specific references to separation anxiety in child subjects, the paper puts forward a strong case for the administration of suitable doses of premedicant to ensure the child is amnesic when he arrives at theatre, the aim being that he should remember little or nothing of his care there. Parents are recognised as important but their role is clearly delineated to the preoperative and postoperative periods only.

The reality that most children undergoing anaesthesia and surgery appear to tolerate the emotional stresses involved with these procedures is indicative of the resilience of their developing personalities. Although it is reported that most children are amnesic for episodes of agitated behaviour either during induction or recovery, this may be a symptom of repression generated by the child's
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inability to cope with the degree of stress. Bothe and Galdston (1972) conducted a study on 50 healthy children undergoing anaesthetic induction for minor surgery. The children were interviewed the night prior to surgery and observed on their journey through the operating suite i.e. before, during and after anaesthesia induction including recovery. The findings covered the four observational areas (the first being during the admission or preoperative period).

In the immediate preoperative period, two thirds of the children showed obvious signs of apprehension during their wait in the theatre ante room. These signs varied from overt crying to actual statements of being afraid. During the actual induction of anaesthesia, seven children were classified as being difficult to induce i.e. open crying, and shouting objections or the use of physical restraint. During the emergence from anaesthesia, five children exhibited obvious agitated physical behaviour. During the first post operative day the children were asked to describe the events before and after their operation. The recall of information up to the point entering the theatre proved accurate, but few could describe the operating room itself and of the period after surgery, they could recall very little of the events which took place. This apparent amnesia extended for the remainder of the operative day. A questionnaire mailed to parents after discharge of the children revealed little post hospital change in behaviour patterns. Given the small sample number (n=50) and the 60% response rate, it is difficult to judge the accuracy of these reports. Some behavioural changes were reported which varied from nightmares to a return of nocturnal enuresis in a previously toilet trained boy. The study revealed that 11 children out of 50 in total showed different behaviour patterns suggestive of high levels of anxiety. The authors conclude that children who remain silent during the preoperative stage should be carefully monitored and the sign should serve as a warning signal concerning the ease with which children accept induced unconsciousness.

The recognition that anaesthesia induction during childhood causes stress has led to a variety of strategies to overcome or mitigate this. One such method has been to try to induce the child while sleeping. This "steal" or "asleep anaesthetic method" hypothesises that there is less harm to the developing psychic of the child and that there is less likelihood of postoperative behavioural upset. Despite the many variables involved, Meyers and Muravchick (1977) studied the behavioural consequences following admission of 122 children of whom 85 had anaesthesia induction. The study was designed to establish the relationship
between anaesthetic induction techniques and subsequent behavioural changes. The experimental steal (asleep) induction group (n=24) and the awake group (n=24) were premedicated intramuscularly with droperidol and atropine. The children in the experimental group were seen preoperatively by the authors and personal contact established with the family unit. A full explanation was given of the forthcoming events. The 37 children in the control group were not visited preoperatively or post operatively by a member of the anaesthetic staff and were premedicated by the surgeons. A month following discharge, a questionnaire was mailed to the parents. Although the study failed to demonstrate a significant decrease in the total number of behavioural problems in a group of well prepared gently anaesthetised children, compared to the control group, it did show that the sleep induction technique was associated with fewer stressed children.

Allowing a parent to accompany a child to the anaesthetic room as a method of reducing stress, failed to be addressed in the literature until 1967 (Schulman, Foley, Vernon, Allan, 1967). This is not surprising given that there were still many hospitals not allowing open visiting at that time. Rutter (1981), cites Emanuel Miller (1938) with the quotation, "Environmental influences do not really write like a pen upon the clear sheet of the child's innocence, but they play upon and are engaged in a sort of battle with the instinctual forces with which the child is endowed..... it is the battle between the influence of environment and these instinctual forces that victories and defeats of life are first written in the earliest chronicles of the child's experience." Miller goes on to indicate that although these chronicles are carried into adult life, they degrade and become difficult to "read". However, despite the "missing chapters" they still exert an influence on the ultimate meaning of adult behaviour. It is estimated that 60% of psychiatric patients compared to 20% of a control group (i.e. members of the general population free of psychiatric disorder) have experienced a "severe" life event in the weeks prior to the onset of the disorder. Whilst indicative for adults, there remains a paucity of evidence linking childhood stressful events with psychiatric disorders in childhood. The long term effects of transient acute stressful episodes in childhood are much less clear than those associated with longer term maternal deprivation, prolonged family disharmony, institutional upbringing and neglect. Rutter indicated that a single hospital admission with its associated stressful events is rarely associated with long lasting sequelae. Despite the lack of strong empirical evidence linking stressful childhood hospital admission events with later childhood psychiatric disorders, there remain questions
unanswered as to what it is specifically which occurs in hospital that children find frightening and therefore stressful.

The development of children's concepts of illness vis a vis their stage of development is an important consideration when assessing the likely effect of a hospital admission and surgery in particular. The physician working with children is faced with an array of children's beliefs and explanations of illness. Cognizance of just what children perceive is worth knowing in order to plan their progress through the admission. Bibace and Walsh 1980 (1980) have examined the development of children's concepts of illness in relation to psychological stages of development. They show that strategies used by physicians may either credit the child with too much understanding or more commonly, the child is totally excluded with the physician concentrating on only the parent. This flawed strategy assumes that children are unable to take any responsibility for the management of their own illness. Children dread hospital procedures. Needles, tests, anaesthetics and the like may all be associated in the mind of a child with hospital. Pre-school children are especially frightened of noises, strange persons and events. Inanimate objects can be given animate powers by pre-school children, some with the ability to hurt or maim. The machines in an anaesthetic room may promote fear in such children and this may be further exacerbated by the usual accoutrements of anaesthetic rooms such as needles and syringes. Miller (1979) emphasises the importance of being aware of such childhood fantasies in order to plan any preparatory techniques that may be necessary.
CHAPTER 3
The effect of parental anxiety on young children in hospital - contagion

It is believed that children may be affected as much by the attitude and mental state of their parents as by any hospital procedures perpetrated on them during admission. Numerous studies suggest that allaying parental anxiety will have benefits for children in hospital. Most children are dependant on their parent's emotional support for help in coping with anxieties. Adults are normally more competent at dealing with external stressors more adequately than children and can conceal internal problems more effectively. The simplest type of anxiety is that produced by contagion. This is exemplified by children who become frightened when they are in close contact with frightened adults. Van der Veer (1949) describes the response of children to disturbed adults who would normally function as protectors and likens the assimilation of uneasiness from them to the development of a highly infectious disease. This communicated anxiety can be seen in other situations e.g. fire, war and civil disturbances where large volumes of individuals become frightened of real or imagined stressful stimuli. In such circumstances, it is almost possible to see the transmission of fear from one person to another. Children, providing they are in the company of calm, supportive adults can be exposed to extremely hazardous situations and yet remain calm. Conversely, if in the company of anxious adults, children will develop signs of stress out of all proportion to the stimulus. It is clearly important for those working with children to demonstrate an aura of calm and not be frightened of the child's illness. Strategies to overcome parental tendencies to become frightened can be pursued and will be considered separately under the auspices of preparatory techniques. It continues to be the subject of debate as to whether the phenomenon of parental fear is justification for prohibiting parental access to a child. Should emotional states be communicated from parent to child at an early age, the utilization of parents in stressful situations requires careful thought.

One researcher has experimentally tested the hypothesis, that maternal anxiety can be transmitted to infants and produce changes in infants behaviour. In this study, Campbell (1957) investigated the phenomenon in infants attending a well baby clinic for routine immunisation injections. Maternal anxiety was manipulated through neutral and fear provoking communications. The effects of the communications were measured by observing the behaviour of the infants
before, during and after the delivery of the communication. The experimental
group were given anxiety arousing instructions which emphasised the possible
hazards and difficulties that might be associated with the injection. The second
control group received neutral instructions. The results of this study showed
that significantly more infants of mothers who received anxiety arousing
instructions cried before the injections, than infants of mothers who received
neutral instructions. This study appears to collaborate the emotional contagion
hypothesis. How infants and children sense a parent's emotional state is not
fully understood. Subtle physical expressions, body tensions or other less
tangible stimuli may be implicated.

Some degree of anxious concern is common to all parents who have children in
hospital. Most parents blame poor communications for their anxiety and studies
have shown that they consistently request an improvement in this area (Ball,
Glasper and Yerrell, 1988). An improvement in parental briefing and extra
strategies to aid communication may keep parental anxieties under control and
should, therefore, be actively pursued. There have been arguments that
parents are insufficiently sophisticated, especially when stressed, to grasp what
is being explained to them and it is perhaps better not to bother at all in the
belief that information may make matters worse. Given that children's units
spend much time and energy preparing children for stressful procedures, it
should not be beyond their capabilities to prepare the parents through improved
communication however limited their learning capacity is rated. Parent's fears
may be based on unpleasant past experiences of their own, perhaps related to a
hospital admission. Failure to recognise and deal with this may perpetuate the
problem. After all, it is difficult for any parent to support their frightened child if
their own emotions are in turmoil.

Some professionals believe that it is preferable to exclude parents from
participating in care completely and there are probably some situations when
parents, by their own anxiety and their inability to control it, would make the child
worse rather than better. On the whole parents make good allies for professional
practitioners and their co-operation should be courted at all times. Children
being part of a family unit should not, therefore, be treated as a separate entity.

Francis and Cutler (1957) reiterate the deleterious effect that an anxious parent
can have on a child undergoing anaesthesia. They indicate that anaesthesia
induction can be difficult because of anxiety ridden parent-child relationships, but
state that if parents themselves are reassured, then this results in less anxiety being transmitted to the child. The importance of preparing the parents during the preoperative period, is emphasised and it is suggested that this be done in a quiet cheerful room away from the child. The authors go to great lengths to describe how they would prepare parents. Questions related to the child’s diagnosis, prognosis, and intended procedure are encouraged and fully dealt with, using pictorial depictions of the intended procedure where appropriate. That so much time and effort be given or suggested in describing the anaesthesia, the surgery, the degree of post operative pain etc. and then not to involve the parents in the actual procedure of induction is perhaps typical of the period. That attitudinal remnants of this era prevail in the 1990’s both in the UK and abroad, underlies the continuing debate surrounding the role of parents in hospital. The concept of treating the family as an indivisible unit is gaining momentum and family centred care now underpins modern strategies of child health. Followers of this philosophy would argue that parents should be allowed to accompany their child to the anaesthetic room and remain with them until they are unconscious.

It has been indicated by Hain (1980) that if the overall benefit to the child could be shown to accrue from a parent remaining until anaesthesia is induced, then all anaesthetists would, if necessary, modify their attitude and practice. However, there still exists confusion as to what reasons are put forward for parental presence during anaesthesia induction. The paucity of concrete empirical evidence supporting parental presence has created a whole spectrum of opinion among anaesthetists and others involved with the care of children during induction. Children when asked, consistently admit fear when faced with the prospect of being separated from their parents. Despite this, some parents even if offered the facility to stay with their children during stressful procedures, including anaesthetic induction, choose not to do so. That some parents do not wish to share this particular part of a child’s admission should come as no surprise to health care professionals, for these parents may be exhibiting a genuine appreciation of contagion. Such parents that have insight into their own psychological profile, would as parents, not wish to exacerbate their child’s actual or potential psychological trauma, preferring instead to trust in the professional staff involved with the procedure. One school of thought would have all parents attending all stressful procedures on the basis of the "greatest good for the greatest number". Forcing or over encouraging parents to stay against their will is ethically unjustifiable. Strategies to help parents help their
children, perhaps through preparatory programmes should be explored as a methodology to overcome the problems of emotional contagion. Some parents find it difficult to prepare their child for hospitalisation and this is often related to their own anxiety about hospitals and medical treatment, some of which may be related to a bad experience in their own childhood. Realistically, it should also be recognised that there are still some parents who threaten their child with hospital if they are naughty. It is small wonder that some children find hospital a frightening place to be. Likewise, some parents unable to summon sufficient strength to explain to their child about hospital, actually describe the forthcoming admission as a pleasant trip filled with fun and ice cream. Such parents feel that in suppressing the truth they are acting in the child's best interest. Conversely being aware of their own contagious effect, they simply opt out of any discussion related to hospital and hospital procedures.

The body of evidence which demonstrates that parental anxiety is mirrored in the child, augments the drive for positive interventions which are geared for the parent in addition to the child. La Montagne (1987) indicated that the more information children receive about hospital, the more active is the coping. The amelioration of stress in childhood generated through hospital admission must first address the issue of contagion and strategies designed to overcome the phenomenon implemented.

When a child is admitted to hospital the whole family may suffer stress and this will be independent of whatever precipitated the original cause of admission. Skipper and Leonard (1968) conducted a field experiment to test the effects on the behaviour of hospitalised children of nurses' interactions with the children's mothers. It was hoped through this experiment to facilitate a method of reducing the child's stress indirectly by reducing the stress of the mother. The mother may be the prime factor in determining whether changes in the child's emotions and behaviour will be detrimental to his treatment and recovery. Communication of stress between a parent and child can take place on the non-verbal plane, in addition to verbal planes and this may be beyond the parents' locus of control. Should a parent be able to manage and control their own anxiety and display a calm, relaxed and confident manner, this might in turn be communicated to the children and in turn ease their distress. A relaxed and informed parent is likely to be an asset to hospital personnel. Such a parent will be more capable of making rational decisions based on informed choice and thus facilitate the child's adaptation to the events at hand including some stressful procedures. The
parent can, therefore, be conceived as the gate keeper of the child's emotions. This is not to say that the child is without the innate capability to reach spontaneous decisions regarding hospital admission, but preparing the parent is an effective way of reducing stress from the potentially threatening events of childhood. The key to success is apparently communicating with the family at every step of the admission process. Despite this, however, the relevant literature contains a wealth of citations of parental dissatisfaction with the hospital care of their children during admission.

From the parents point of view, lack of information and lack of emotional warmth from doctors, nurses and others, are among the most criticised aspects of patient care. Skipper and Leonard's methodology consisted of giving parents much information and although the child was present, it was the mother who received the extra attention. The nurses concentrated on the mother's feelings about the admission and in each individual case the nurse tried to help the mother meet her own individual problems. The findings of the study are interesting in that the data indicated that a change in the quality of interaction between an authoritative person such as the experimental special nurse and the hospitalised child's mother can lower the mother's level of stress and produce changes in the mother's perception of the situation. Because of the mother's unique intimate relationship with the child, a reduction in her level of stress altered the child's total experience of hospital. The data supported the hypothesis that this special attention to the mother would result in less stress for the child and as a consequence a change in his social, psychological and even physiological behaviour. This type of research suggests that health professionals can have a major effect on the life experiences of children and their families in hospital.

Active interventions by hospital staff in reducing parental stress are worthwhile and should be considered as part of the arsenal of methodologies that health professionals have at their disposal for combating the stress of hospitalisation. Changes in parental behaviour may have a profound effect on the child's behaviour and time spent in the preoperative period may give dividends later in the admission. An awareness of the futility of endeavouring to mitigate a child's stress without considering the emotional stress of the parents should be recognised.

A study by Wolfer and Visintainer (1975) partially replicates Skipper's work and provides a further reminder of the folly of ignoring the contagious effect of
anxious parents. Despite this, child health workers must accept that parental
presence alone during hospital admission is insufficient to change outcomes.
Indeed, Lee and Greene (1969) have demonstrated that no favourable effects on
the preoperative emotional state of children were observed when parents were
present. Indeed, there was more reported crying among children whose parents
were resident with them in hospital than among children who had no parental
contact. Whatever strategies are developed to give parents new and innovative
roles during childhood admission, the phenomenon of contagion must be
addressed first and foremost.
The psychological effects of a hospital admission have traditionally been ignored when considering the negative effects of hospital. Until the advent of antibiotics, infection was the only contender in "the effects of admission stakes". The often irrational fear of infection made the question of visiting hours a thorny issue. In the Southampton Children's Hospital, for example, at least up until the outbreak of World War I, visiting was allowed from 2 - 4 p.m. daily, except Sundays (Williamson, 1990). As the century progressed, it became confined to 1 hour on Wednesday and Sunday afternoons and then in 1947 was banned completely. Visiting was recommenced in 1950 on a limited basis and parents had to wear face masks!

The strict visiting regimes of the pre-Platt era where nurses took over care completely during a child's admission, undermined the role of the parent. This left parents to feel helpless and inadequate. This unhappy state of affairs did not improve substantially following the publication of "Welfare of Children in Hospital" and the role of parents continued to be denigrated. The creation of the National Association for the Welfare of Children in Hospital (NAWCH) in 1961 accelerated the pace of change and must take much of the credit for the reforms which subsequently took place. This pressure group became the champion of families as consumers of health care. The emancipation of families with children in hospital has been slow and this is regrettable but the concept of family centred care is now beginning to gain universal approval.

**Common questions asked by children when they go to hospital**

- What happens when I get to hospital?
- Can Mummy and Daddy come too?
- Can Mummy and Daddy stay with me?
- Can I bring teddy?
- Where will I sleep?
Preparing children for stressful hospital procedures and evaluating a preadmission program

• What happens if I wake up during the operation?

• Does it hurt?

• When can I go home?

Preparatory programmes attempt to answer these and other questions and are aimed at both children and their parents.

Preparing Children for Hospital

Modern child health care services require integration between hospital and community. The service should provide for the child as a whole. The service should meet the social, emotional and spiritual needs of children and their families. The growth of paediatric preadmission programmes throughout the UK. represents one facet only of this integrated service. Since the publication of the Platt report, paediatric nurses have developed a reputation for endeavouring to improve the care of their patients and families. Attempting to inoculate children against the stresses of hospital admission may be partially facilitated through the provision of preadmission programmes.

Parents of children about to be admitted to hospital hunger for information but Miller and colleagues (1988) suggest that people have different coping styles and some seek information whilst other avoid it. Maddison (1977) among others, has highlighted the importance of seeking the opinion of consumers. Such consumer surveys will invariably demonstrate that parents are in favour of further information. Such information may be transmitted under the auspices of a preadmission programme. Rodin (1983) has indicated that children who are prepared for hospital procedures, cope better than children who have not been prepared. There are still many procedures to which children are subject to in hospital which may cause anxiety. Children dread hospital procedures. Needles, tests, anaesthetics and even death may all be associated in the mind of a child with hospital. The benefits of parents may be incalculable when considering methods of reducing anxiety in children about to undergo stressful procedures. Mellish (1969) has pointed out that successful preparation for surgery depends on the attitude of the surgeon, anaesthetists, nurses and ward clerks etc. He has given credibility to the statement that surgical success
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cannot be measured alone through intact wounds but must also include intact emotions. It is intact emotions which are the prime motivating force behind the development of preparatory programmes for children and parents. It must be emphasised that the child is part of an indivisible unit that is the family. Any preparatory techniques employed to prepare a child for hospital must include the other members of the family, but in particular the parents. All parents suffer from anxiety when their child is admitted to hospital. Even medical and paramedical personnel and their spouses have been found to be no less anxious despite all their accumulated knowledge when their children are admitted to hospital. Parental preparation is extremely important and may perhaps be the most important component of any family preparatory programme. Parental reaction to childhood admission crosses socio-economic barriers and it has been suggested that a child’s psychological sequelae to hospitalisation is directly related to the parents’ emotional state. Parental contagion is a major source of concern to those individuals planning any form of supportive programme.

Paediatric nurses must learn to recognise the natural resource they have at their disposal in the form of parents and guardians. They must be perceived as equal partners in the traditional nurse-doctor-patient relationship. To this end the National Association for the Welfare of Children in Hospital has committed much of its energies. (Action for Sick Children)

If, as has been suggested, a child’s psychological sequelae to hospital are related to the parents’ emotional reactions, rather than the severity of the trauma suffered, this must be considered when planning any interaction. Mahaffy (1965) demonstrated the benefits of having one nurse attached to a family unit in the pre and post-operative periods. This early account of primary nursing is interesting in that it highlights the benefits of improved communication between a family unit and a professional.

How can Children be Prepared for Hospital Admission

Smith (1986) believes that the emotional factor may be an even greater source of concern than the child’s physical condition during a hospital admission. On the premise that this may be true, a number of different strategies have been developed to help children and their families cope with hospital admission.
Preparation in the community

By the age of 5 years, 25% of children will have had a stay in hospital and one third of these admissions will be caused by accidents. Hospitalisation is, therefore, not an uncommon childhood experience. Brett (1983) has indicated that preparation should begin in the classroom and feature as a component of general education. The needs of children vary with age. It has been suggested that children's' fears change with age and cognitive development. Miller (1979) indicates that pre-school children are especially frightened of noises, strange persons or events. School children are fearful of bodily injury, disease and separation, among others.

Vernon and colleagues (1960) collected data which confirmed the hypothesis that children between the ages of 6 months and 4 years of age were most likely to be upset following hospitalisation. This would suggest that preparation might begin in Nursery School or Play Group. Families come in all shapes and sizes, good, bad and indifferent. All appear to profit from a modicum of preparation. Any preparation will be intimately concerned with stress inoculation. Meng and Zastowny (1981) have likened stress inoculation to medical inoculations and indicate that any preparatory programmes should try to protect children from the stresses of hospitalisation. Stress inoculation may be successfully carried out in school classroom situations and the benefits of this type of approach is that all children can be prepared for the eventuality of being admitted to hospital. The school age child has a potential greater than his pre-school colleagues for coping positively with hospitalisation. This arises because such children are more able to reason, describe and verbalise their feelings than younger children. The school classroom may, therefore, be an excellent environment in which to teach children the skills necessary to cope with hospitalisation. Universal preparation for all children facilitated through pre-school or school based programmes may not be the universal panacea imagined. Young children are susceptible to fantasy and misunderstanding. Anxiety may even be provoked if ideas of separation from home and family are introduced unnecessarily. Any preparation for hospital must be accurately and sensitively carried out with due prominence being given to the age and level of cognitive development of the child. The role of the primary health care team should also be considered when planning preparatory programmes for children and families. Seventy five percent of children under 16 years of age see their General
Practitioner four or five times in any one year. It is obvious, therefore, that GP's and health visitors are in a good position to supply information about hospitals, especially for elective admissions.

Preparing Children And Their Families For Hospital Admission Using Written and Visual Material

Rodin (1983) among others, has shown that written and illustrated material can be highly effective in relieving the stresses of hospitalisation. Such authors use very specific information and they suggest that specificity is required in order to produce accurate expectations. There are a number of books written for children about hospital. They can be read as part of a general educational strategy or can be used by parents and others prior to a child's admission - as always some are good and some are bad. At best they can be perceived as an aide only, but they do fulfil a role as part of an overall preparatory package.

More specifically, it has become custom and practice for many children's units to send out written material in the mail usually with the letter of admission, naturally to save on postage. Such written material in common with the books may be good, bad or indifferent. Some attempt to communicate with the parent and some with the child, some do both. The objective is to provide information and studies which have investigated this (Ball, Glasper, and Yerrell, 1988) reveal much dissatisfaction. Lack of information is the prime cause of anxiety. Anxious parents are less capable of providing support and security for a child during a stressful event. Clearly, attempts to prepare parents and thus children are worthwhile and this explains the growth of mailed information for families.

Parents know their children better than anyone else and should be involved where possible in preparing children for hospital. In the absence of information, some parents say nothing to their children and the first the child knows of his admission is when he walks through the portals of the hospital.

Preadmission leaflets sent by the hospital for elective admissions as mentioned vary tremendously in quality. Many are not specifically written for children and their parents and few give concrete information which help parents prepare their child for hospital.
Harris (1981) has revealed a desire among parents for more information. She has suggested that specific information sheets about individual operations be included in the 'mail out' to parents. In this way the children could be prepared for surgery through the parents who are best placed to achieve this. The children's unit at the University Hospital, Southampton has produced a number of such leaflets.

Preparing Information Leaflets for Families

Health care clients hunger for information and the results of satisfaction surveys demonstrate consistently that there is a need for an improvement in the area. Patient or family handouts/leaflets can enhance the usefulness of spoken instructions (Glasper, Burge, 1992). Spoken messages degrade quickly in completeness and accuracy. Facts are omitted, diluted, embellished or condensed. During times of stress nurses and doctors cannot and should not rely on the spoken word. Miller and colleagues (Miller, Brody, Summerton, 1988) have indicated that some people avoid information as part of a coping style during stressful events and nurses should, therefore, be cognisant of this phenomenon.

Despite the problems associated with verbal communiqués e.g. The Classic World War 1 trench communiqué "send reinforcements we are going to advance" which became by the end of the trench system "send three and four pence we are going to a dance", handouts alone seldom meet the needs of the audience completely. Although better than the spoken word alone, written handouts cannot completely do the job intended for them. Some readers will not understand, apply or locate the information embodied with the text. Despite these difficulties the value of augmenting verbal instructions with written materials may be invaluable in promoting family centred care.

The recent department of health publication "The Welfare of Children and Young People in Hospital" - the latest version of the "Platt Report", highlights in no uncertain terms that families have a right to information appropriate to their age, understanding and differing circumstances. If nurses are to be true advocates they must endeavour to empower patients and/or families. Empowerment cannot occur in ignorance and, therefore, the nurse must endeavour to provide clients with information which will mitigate against this.
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The contagion hypothesis would argue that an anxious parent would produce an anxious child (Skipper, Leonard, 1968). Should this be true, it could be argued that in some circumstances to prepare the parent is to prepare the child. If parental anxiety is mirrored in children, it is surely prudent to prepare strategies to address this phenomenon. Family Information leaflets may help achieve this (Thornes, 1991). Skipper highlights the value of written information and suggest that specific written information is provided to ensure parents understand their responsibilities prior to, during and following admission.

Family Information Leaflets should be:

1. Comprehensible (Does the reader understand the text)?
2. Usable/Readable (Can the reader apply the information)?
3. Referenceable (Can the reader find the information easily)?

The Department of Medical Publications at the Hospital for Sick Children, Toronto, produce guidelines for writing parent/patient materials and they emphasis that any leaflet should be in clear familiar language, in a readable style and format that can be easily understood by a diverse audience. Nurses who are considering writing for families should actively seek the help of a librarian. They are often highly skilled and can assist the novice writer in a number of ways. They can help gather the information, organise it in a logical order and advise on readability formulae and their application. Prior to embarking on the mission to produce patient/parent education leaflets, it is advisable to:

1. Know your purpose (What are you trying to achieve?).
2. Know your audience (Whom do you want to affect?).
3. Know your subject (What do you need to say?).
4. Know the setting (Under what conditions will your audience read the text?).
The Child Health Unit at the University Hospital, Southampton has recently embarked on a programme of producing parent information leaflets. The aim of the leaflets was to give parents specific information to parents from a wide socio-economic spectrum. No attempt at this stage was taken to address families from different minority ethnic groups. A fourth year medical student was commissioned to undertake the project as part of a summative assessment assignment. After a review of the surgical admission statistics, it was decided to produce a number of information sheets covering the commonest causes of admission. These included circumcision, inguinal hernia and pyloric stenosis among others. A selection of leaflets were subsequently produced (Creagh, 1990) and piloted. It was found that parents appreciated the extra information they were given and steps were taken to produce better quality versions using monies donated by the Children's league of Friends.

When writing leaflets for parents, it should be taken into consideration that information may resolve uncertainty. Attempts should be made to identify the families questions about their child's health and treatment. Endeavours should be aimed at the provision of:-

1. **Awareness information** - i.e. providing information that immediately allows the reader to relate to that contained in the leaflet, i.e. How does this relate to me?

2. **"How to" information** - i.e. providing information that allows the reader to ascertain quickly what needs doing to optimise the purpose of the leaflets, i.e. How do I make the product work for me?

3. **Principles information:** Why does the product do what it does?

**Before starting writing parent/client information sheets**

Doctors and nurses are not omnipotent and it can come as a shock to them to discover that their belief that they know everything a reader needs or wants to know is flawed (Cox, 1989). A needs assessment is probably a prudent
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exercise to undertake and involves finding out what the experts think the client group should know, followed by finding out what the client group think they should be told. Tape recorded interviews using a structured format will facilitate the gathering of appropriate information and avoid the perennial dilemma of all writers, i.e. relying on other people to produce written material to a deadline, e.g. a busy surgeon may not have time to write down what he wants a family to know about a certain condition, but he will probably agree to a 15 minute talk over coffee. Sufficient subjects from the professional group and the targeted client group should be used to avoid bias.

Guidelines for writing leaflets (After Lang T.A.)

1. Use informative (not descriptive) headings. (Organise around actions not terms).

What do you want the client group to do.

| Not so good | "Writers disease" |
| Good | "What is Writer's disease?" |
| Better | "Living with Writer's disease". |

2. Try to personalise the leaflet by using personal pronouns, e.g: I, We, us, you.

3. Avoid forms of the verb "to be", e.g:

| Not so good | "There are many people that we treat". |
| Good | "We treat many people". |

4. Use strong verbs where possible, e.g:

| Not so good | The surgery we used entailed an exploration of the abdomen. |
| Better | We used exploratory abdominal surgery. |
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5. Avoid double negatives and qualifiers, e.g:

   Not good          Do not give unless the patient is wheezing.
   Better            Give only when the patient wheezes.

6. Use familiar words where possible, e.g:

   Not good          - Syncope, fractured.
   Better            - Faint, "broken".

7. Use short paragraphs with strong topic sentences.

8. Use simple visuals - don't include extraneous details.

9. Use at least 12 point type - larger for older and younger readers, with lots of "white space".

Readability Formulas

There are often assumptions made by the writers of client information sheets that all will read and understand. In recent years readability formulas have been employed by writers to assess patient education materials. Pichert and Elam (1985) point out that such readability formulas are not in themselves a universal panacea to correct the ills of a badly written piece of information. The growth in the use of readability formulas stems from health workers' concerns about patients ability to comprehend instruction leaflets. The possibility that clients may comprehend, but because of the design never attempt to read leaflets, can never be addressed by readability formulae. The fear that such leaflets may be too complex for much of the targeted clientele, encourages the use of such formulae.

The readability formulae were originally designed to rank the difficulty of books used by differing grades of school children. They involve counting the number of words in texts, sentences etc., and the number of polysyllabic words contained therein.
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The objective of the exercise is to produce instructional leaflets or other patient educational products which are as easy to read as daily tabloid newspapers. This, however, is not always possible and the polysyllabic nature of medical terms adds to the difficulty. Providing the writers of patient education leaflets test them in the field and modify them accordingly, there is no reason why they should not be successful with their client group without resort to readability formulae. Should health care professionals wish to promote parental participation in care, it is incumbent upon them to promote sufficient information to parents to enable them to fulfil the role.

Family Information Centres

It is hoped to set up a comprehensive centre for health information and promotion for children and families, within the children's out-patient department at the Southampton University Hospital. The production of family information leaflets is envisaged to be at the forefront of this development.

Corporate Identity

The use of corporate logos can bring together often disparate materials and create a sense of belonging and ownership. This small low cost concept can help in many ways, e.g. fund raising, raising awareness of health care units in the local community, providing other messages, e.g. phone number etc.

Nurses who are involved in setting standards as a component of purchaser/provider contracts should actively consider the production of family information leaflets as a component of this exercise.

Visual Material

Some hospitals have produced video films or tape slide programmes which can be shown to parents and children. The effectiveness of such programmes is such that they are increasingly being developed and used throughout the United Kingdom. Films produced for television may have a general effect in raising the awareness of preparing children for hospital. The cost of producing professionally edited video tapes is prohibitively expensive for most units and they date very quickly. Tape slide programmes are easier and cheaper to
produce with the added advantage that they can be updated periodically with little difficulty.

**Preadmission Programmes**

In recent years the various forms of preadmission preparation for children have concentrated on the development of the so called "preadmission programmes". Such programmes are conducted in either outpatients departments when children come with their families for an initial consultation prior to admission, or in the hospital at a set time usually a week prior to admission, but following the outpatient consultation. The changes found in children's' behaviour after hospitalisation, underpin the growth of such formal preadmission programmes. There are few national health service hospitals who provide routine minor surgery who have the financial resources to run preadmission programmes, but the number is growing. The commonest type of programme in the UK. is that which is conducted in hospital and often at weekends. Jones (1988) found that Saturday mornings were the primary choice of parents in the Southampton area when considering the most suitable day for attending a preadmission programme. This led to the formation of the Saturday Morning Club based within the paediatric unit at Southampton General Hospital (Giasper, Thompson, 1993) In this respect the club resembled the Saturday Morning Project based at the Queens Medical Centre in Nottingham.

The project at Nottingham was the first in the UK being formed in 1982. The format established by Nottingham has been emulated in a number of children's units including Southampton. Invitations to the programmes are often sent out in the mail with all the other information usually one week prior to admission. The programmes often consist of a tape/slide presentation followed by a visit to the ward to which the child will be admitted. Therapeutic play programmes and biscuits and juice for the children, complete the morning's programme. While the children are playing the parents have coffee and some units have produced video recordings which portray the lives of children as they pass through hospital. Such recordings may be detailed and include sections on pre and post operative management, but they date very quickly. A major benefit of the programmes is that they facilitate interaction between hospital staff and parents who are encouraged to ask programme workers about their child's admission. In Nottingham the children are given a play pack at the end of the programme.
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consisting of a paper theatre hat, paints, mask and badge, plus a cotton theatre gown which parents are asked to return on admission. The programme at Southampton now includes details related to parental roles in the anaesthetic room.

A factor of great importance for the successful conquest of pre-operation anxiety is the amount of pre-operative preparation given to patients and their families. This is especially true of parents if a reduction in the contagion effect is sought. The preadmission programmes attempt to achieve this but they have yet to be critically evaluated. The hospital based preadmission programmes are not without marginal costs and this may explain their relatively slow growth in the United Kingdom.

The use of volunteer staff should not be overlooked especially in the light of raised parental awareness and expectations. Such volunteers may provide the key for accelerated growth especially in times of financial austerity.

Admitting children to hospital prior to surgery in an attempt to prepare them for what may be a stressful experience has shown results. Fassler (1980) has demonstrated that a combination of emotional support and information related to the admission appears to be an effective method of reducing pre-operative anxiety.

The role of theatre personnel in the preparation of children has only recently been given prominence. The growing awareness of the need for infection control practices, following the emergence of antibiotic resistant bacteria resulted in the decision to build new district general hospitals with operating theatres well away from the main hospital traffic with clearly defined clean and dirty areas and restricted entry. The consequences of these strategies were far reaching and in many ways isolated theatre staff from their patients. The difficulties of getting changed to visit patients and their families in the clinical areas effectively prohibits coming and going. The recognition that post-operative anxiety is reduced by better preparation for the ensuing stressful situation has been addressed by some theatre personnel. Bonner (1986) has demonstrated the value of pre-operative visits by theatre nurses and the use of pre-operative therapeutic play programmes in overcoming operation anxiety.
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It is apparent that the stress of hospital can be ameliorated by giving children and their families adequate information before, during and after anxiety provoking experiences. Clearly different preparatory strategies must be employed if one is able to prepare all children and their families for such events. The differing stages of child development must be addressed if any degree of success is anticipated. Young children especially, require more than just verbal explanations. Appropriate child centred methods such as therapeutic play, story books, games, role play and puppet shows can be successfully employed.

Planning a preadmission programme

Although the role of parents has increased in recent years, for various reasons parents have not taken or have not been allowed to take full advantage of what appears to be new opportunities to become involved in the care of their child during a hospital stay. Preadmission programmes attempt to exploit that natural resource that exists within all families which is a desire to help children cope with anxiety provoking situations.

Utilising the skill of parents in this way helps to establish the trend of perceiving parents as partners in the traditional nurse-doctor-patient relationship. Inspired by the preadmission programmes at The Hospital for Sick Children, Toronto, Canada and Nottingham, England, the staff of the paediatric unit in Southampton established a working party to plan and initiate a similar programme. The working party included the course leader of the nursery nurse programme at the local College of Further Education. She not only wanted to include the concept of preadmission programmes in her teaching syllabus, but also offered the use of two student nursery nurses per week during term time to act as helpers on Saturday mornings during the period of the preadmission visit which was scheduled to run from 10.00 a.m. to 12 midday. The group identified three stages that should be included in any preadmission programme.

1. Therapeutic Play
There are considerable difference between adult and child cognitive processes. Many adults use inappropriate language when explaining aspects of treatment to children. This is especially true of hospital staff who are often confronted by a variety of children's explanations of illness. What may be an appropriate explanation for an eight year old child may be wholly inappropriate for a four
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year old. Because children's thought processes and understanding are not just miniature versions of adults' thought and comprehension, child health care workers should be able to offer a variety of explanations that are consistent with the child's level of cognitive development. The 2-7 year old child often gives life to inanimate objects and this animistic trait can be usefully adopted when discussing aspects of illness with this age group.

Preparation that involves only verbal explanations is insufficient for those children who have immature verbal and comprehension skills. Clearly, methods of preparation which operate at a child's cognitive level may be much more suitable.

Swayed by this argument, the working party decided that a range of therapeutic play material was essential to the success of the enterprise. The acquisition of specialist toys was augmented by the purchase of two Zaadie Dolls, one male and the other female. These dolls, one of a new generation of anatomical models developed specifically for children in hospital are cloth covered rag dolls. The dolls have three layers which peel apart using velcro fastenings to expose the vital organs. The dolls have several faces and the sleeping face must always be in place before they are opened. The simple yet effective design facilitates their use among a wide range of children admitted for a variety of surgical and non-surgical procedures. It is believed that children are able to express fear and anxiety through play and a commitment to this belief is manifested through the increasing number of play specialists who are employed in children's wards. Children have a paucity of information about their internal organs. It is widely believed that children's perceptions of their anatomical structures parallels the stages of intellectual development. Any preparatory programme should take this into account. The programme at Southampton utilises Zaadie Dolls, but it must be pointed out that the use of such dolls has yet to be fully evaluated. Nevertheless, when discussing with a child certain procedures involving part of his anatomy, especially if he cannot normally see, touch or hear it, it is necessary to use things he can see, touch, hear and relate to concretely.

The dolls can be catheterised and the female doll is equipped with an injection site on the left thigh and is recommended for use with diabetic children. The female doll also has a removable wig and is, therefore, useful to illustrate hair
loss in children receiving chemotherapy. Further information regarding the Zaadie Dolls may be obtained from the Zaadie Company, 836 Chelmsford Street, Lowell, M.A., 018851, U.S.A.

Toys that encourage interactive play are now freely available and some have been designed for medico-nursing type play. The "play people" hospital toys are excellent as are the traditional doctors sets which contain stethoscope, auroscope and fake syringes.

During the early stages of the programme, a number of old condemned nurses uniforms and doctors white coats were transformed into new miniature versions for children. The resulting dressing up game component of the programme has proved most successful with the children. Through such play, it is believed that children are able to express fear and anxiety. The medium of play knows no boundaries and if it allows children to act out their fears and fantasies, it will only be constrained by their imagination. It is interesting that dressing up play continues to be popular despite the fact that nursing and medical staff no longer wear traditional uniforms at Southampton Children's Unit.

2. Narrative Slide Presentation
The flexibility of a narrative slide presentation was considered the most effective method of addressing parental concerns about their child's forthcoming hospital admission. Slides are easy to produce and have the added advantage of being cheap and simple to update. A simple format was adopted consisting of sequential slides covering the hospital stay from admission to discharge. Ideally, a set script should be followed by all participants but the writing of such proved difficult. An agreed informal approach covering all aspects of hospital admissions was adopted. It was believed that this would ensure full child/parental participation and augment the information mailed to the families in the post.

3. Tour of Relevant Clinical Areas
Tours of clinical areas by prospective patients and their families generate mixed responses among professionals. After careful consideration the members of the working party agreed that one component of the preadmission programme should take the form of a conducted tour. The differing needs of the groups (in patients and day cases) dictated that there should be two tours, prospective
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inpatients and their families being conducted around the unit, while the prospective day patients and their families watched the appropriate slide presentation and vice versa. The tour was planned to incorporate a visit to the theatre complex where patients could ascertain their role if they wished to accompany their children to the anaesthetic room. This component of the tour remains popular and parents and children appear to enjoy the visit to the operating theatre.

Funding

Resource management and income generation leave little room for altruism. The harsh economic climate which prevails in the health service today presents special difficulties for nurses planning innovative programmes for specific client groups. Despite severe cuts, it is sometimes possible to present a cogent case to managers for increases in funding linked to quality of care. If it can be argued that such programmes increase quality of care, then the small amounts of money necessary to fund such innovations can be made available. The amount of staff required was deemed to be two paediatric nurses and one play specialist. This level of staffing was considered to be the minimum number to ensure the viability of the programme. The use of volunteer workers in such programmes is extremely valuable and children's 'League of Friends' departments are always worth approaching. Other volunteers may be recruited from within clinical units. Maintaining a steady supply of staff to run programmes, especially on Saturday mornings is not easy and is a constant source of worry to programme organisers.

Evaluating A Pre-Admission Programme

Under the auspices of an award from the Consumer Association, a formal evaluation of the pre-admission programme at Southampton was undertaken (Glasper, Venn, Roberts, 1991). The study was conducted following the completion of the anaesthetic project, when it became apparent that parents would need information relating to their role in hospital. In situations such as that of the anaesthetic room, parents need precise clarification as to what they should or should not do when their child is undergoing anaesthesia. Although information given to parents accompanying children to the anaesthetic room was considered as a variable it was not possible to offer a preadmission
Preparing children for stressful hospital procedures and evaluating a preadmission programme to those parents at that time. The rapid introduction of the Saturday morning programme was partially facilitated because of the anaesthetic room project and provided a vehicle through which parents could be prepared for differing hospital procedures.

Aim of the study

Evaluate the Southampton Saturday Morning Pre-admission Programme and its efficacy in preparing families for day surgery, compared with a similar control group.

Methodology

An experimental approach was used and the ethical aspects given careful consideration. Without specific evidence to support the Saturday Morning Club programme, this approach was deemed appropriate and ethical approval was sought from the joint ethical committee and obtained.

Attempts to control for age, sex and socio-economic group proved impossible and was quickly abandoned shortly after commencement of the project.

A major problem in evaluating the effectiveness of a pre-admission programme is that attendance cannot be guaranteed. Despite careful advertising and the production of well designed attractive invitations and explanatory leaflets, it proved difficult to ensure good attendance (Glasper, Thompson, 1993).

A number of questionnaires were used, to collect data related to the project. Copies of the questionnaires and data analysis can be found in Appendix II.

Questionnaire 1
Telephone consent/interview. This questionnaire was designed firstly to ascertain attendance for the experimental group and secondly to gather data appertaining to non-attendees. This questionnaire was piloted and found to be of little value for a number of reasons, principally because of the difficulty and time expended in contacting potential clients. Many clients did not have telephones and of those that did, chance would have it that no answer was obtained at whatever time a decision was made to contact them.
Questionnaire 2
This questionnaire was designed to be completed by both experimental and control groups. The aim of this questionnaire was to obtain factual information relating to the two groups. In addition, the amount of preparation for hospital undertaken before admission for the control group and prior to the Saturday Morning Club for the experimental group was assessed.

Questionnaire 3
This questionnaire was designed for the experimental control group only and related to the experience of the Saturday Morning Club itself.

Questionnaire 4.
This questionnaire was designed to elicit information relating to parents perceptions of the day of admission and utilised a four point forced choice Likert type scale.

Speilberger self-evaluation questionnaire
This questionnaire was administered to both groups of parents to elicit a measurement of state and trait anxiety ratings on the day of admission.

Questionnaire 5
This questionnaire was designed to gather data from both groups related to the experiences of parents with their children at home following discharge.

Post Hospital Behaviour Check List
This questionnaire was administered to all parents one week after discharge and was utilised to ascertain potential behavioural differences between the control and experimental group children.

Face Rating Scales
These were utilised prior to and after surgery with both experimental and control groups in an attempt to measure degrees of child anxiety.
RESULTS

TELEPHONE SOLICITATION - QUESTIONNAIRE 1

A number of families meeting the criteria for attendance were telephoned to ascertain attendance or non-attendance. 51 families were successfully approached by phone with 29 families agreeing to attend. The remaining 22 families offered a variety of reasons for non-attendance including:

A. Away for weekend x 5
   or holiday

B. No transport x 3

C. Public transport too expensive x 2

D. Other family commitment x 1

E. Previous admission - not necessary x 3

F. Minority ethnic group - language problem x 1

G. No excuse offered x 1

H. Out for day x 1

I. Parent working (Mother) x 3

J. Husband works shifts x 1

K. Child too young x 1

N.B. All parents contacted by phone during the period of the trial had received the invitations to the club and the explanatory leaflet which accompanied it. All
the parents agreed that they had read the mailed invitation and the accompanying explanatory leaflet.

Discussion
During the pilot stage of the programme it had been noted that attendance to the club was poor except during times of media coverage and because of this improvements to the invitation and the production of an explanatory leaflet were undertaken. Despite this, the desired effect of increasing attendance was not fully met:

PRE-HOSPITAL DATA - QUESTIONNAIRE 2

A questionnaire (self-completing) was administered to all parents. For the control group this was administered at the point of admission. For the experimental group the questionnaire was administered at the commencement of the Saturday Morning Club. The aim of this questionnaire was firstly to obtain basic factual information from parents, i.e. age, sex, etc., and secondly, to ascertain prior preparation for hospital.

With sixty children in the experimental group and forty five in the control group, the mean ages of the children were 5.052 years and 4.188 years respectively. A greater proportion of the experimental children had no previous admissions. All cases were admitted for day surgery only and no attempt was made to control for type of operation.

Siblings
Siblings were encouraged to attend the Saturday Morning Club with their brothers or sisters and it was felt important to make the whole thing a family affair. The philosophy of the family as an indivisible unit made this decision mandatory and from the outset, all family members were invited. Although not significant, it is interesting to note that 15 from a total of 47 siblings had a previous hospital admission in the experimental group and 14 from a total of 35 in the control group.

Conversations about hospital to the children
When asked who other than themselves had spoken to the child, the experimental group revealed that 38 from a total of 60 had been spoken to by
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among others, G.P's, teachers and health visitors. A total of 21 from 46 of the control group had similar explanations. For children who were given an explanation of their forthcoming hospital visit by some person other than the parents, all the experimental group reported that the explanation was useful, but 7 of the controls (33%) did not think it useful. The age range of these children ranged from 2 years to 6 years and children of similar age were also in the experimental group. Attendees at pre-admission programmes may be self-selecting and highly motivated to seek out health information.

Parental anxiety
Emotional contagion has been previously described, but it is widely believed that parental anxiety can be mirrored in children. When asked how they felt about their child's admission to hospital, 46% of the experimental group parents reported being anxious or very anxious and 52% of the control group.

In ascertaining whether any of the children had participated in school or nursery based hospital play sessions, 85% of the experimental families reported not and 91% of the control group.

The majority of parents in both the experimental and control groups (i.e. 93% and 89% respectively) explained to their children the forthcoming hospital admission. 27% of the experimental group found the explanation difficult to give and 16% of the control group. However, the majority of both groups of parents felt sufficiently informed themselves to given an explanation to their children.

Day surgery booklet
The questionnaire results revealed that 71% of the experimental families used the mailed day surgery booklet, compared with 34% of the control group. The fact that so few families used the mailed booklet is worrying. The mailed out colouring book was similarly poorly used by only 50% of the experimental group and 31% of the control group. This should be seriously addressed, but the fact that the majority of the parents (94%) felt no alteration to the book was necessary raises other issues as to the appropriateness of mailed information.

Books to prepare children for hospitalisation
Only 54% of parents were aware that books were available to prepare children for hospital. Of the remainder who were aware of this facility, approximately
50% found them very helpful. This raises questions of the usefulness of such books. Perhaps children's units should think of writing their own and possibly include an annotated bibliography of other published preparatory books in the mailed out information. Action For Sick Children already do this, but it should be made more widely available.

Despite this a third of the experimental group had purchased books prior to arrival at the Saturday Morning Club suggesting that there is a ready market for such books.

EVALUATION OF THE PRE-ADMISSION PROGRAMME DAY - QUESTIONNAIRE 3

71% of the experimental cohort of children (n=60) were coming to hospital for their first admission. 63% of the families brought siblings with them and agreed that this made it easier for them to attend. This added advantage of allowing sibling accompaniment may indirectly help in their own preparation for a potential hospital admission.

91% of pre-admission programme attendees arrived by car. The problems associated with travel to and from the hospital may prohibit attendance at the club in the absence of private transport and this is a serious problem for some families which is yet to be fully addressed.

Parental employment
50% of the experimental cohort mothers worked and 88% of fathers. 50% of parents (one or both) worked on Saturdays but 97% of parents, primarily mothers, did not have to take time off work to attend.

Invitations
All the parents attending the club found the invitation and explanation leaflet useful in making it clear what was involved in the programme. Despite this the poor attendance at the club remains worrying.

Every parent found the programme very useful in preparing their child for the forthcoming hospital admission. The vast majority of parents (81%) found the club markedly beneficial for themselves and their children.
Toys
All the children bar one played with the toys provided at the club. The majority of children enjoyed dressing up in the cut down uniforms (doctors and nurses) and playing with the doctors’ play sets. This is interesting given the current move away from traditional uniforms. Perhaps the stereotype image of the nurse and doctor will remain long after the traditional uniform has disappeared. A high percentage of the children (41%) enjoyed playing with the "Play Mobil" figures. "Play Mobil" make a variety of hospital play sets which children appear to enjoy playing with. 95% of parents reported that the therapeutic play component of the club was well organised and enjoyable.

Slide presentation
The slide presentation and its accompanying nurse led narrative covering all aspects of a child's progress through the day unit was deemed useful and informative by all parents.

Visit to the Theatre Suite
The visit to the operating theatre was equally appreciated but by only 83% of the parents i.e. 10 parents found it not useful. It must be stressed that in the context of allowing parents into the anaesthetic room, it appears that not all parents wish to avail themselves of this facility. For the vast majority, however, the opportunity to rehearse a future role was deemed useful.

EVALUATION OF THE SURGICAL DAY - QUESTIONNAIRE 4

This questionnaire was administered to both the control and experimental groups on the day of surgery prior to discharge.

There was no significant differences between the experimental and control groups, except for item 10 appertaining to information. A statistically significant number of (43%) the control group agreed that they had no information given to them that might have applied to them and their families.

38% of all subjects reported that the nurses on the day did not discuss the children's operations and how they would affect families. 37% of families reported that nurses did not check if they had understood what the doctors had told them.
POST-OPERATIVE DATA ANALYSIS - QUESTIONNAIRE 5

All parents felt prepared for the first post-operative day following discharge, but 40% of the control group (compared to 25% of the experimental group) did not find the child as they had expected on the first day after operation. Whilst not statistically significant on the numbers used for the study, it is nevertheless worrying that so many reported this. 37% of the experimental group and 47% of the control group reported being concerned about their child in the post-operative period. Whilst not in itself alarming and many would say natural, it does question the quantity and quality of post-operative information given to families at discharge.

Despite worries, very few families in either group felt it necessary to contact anyone for advice following discharge.

Pain control
22% of the experimental group described their children as being in a lot of pain on arrival home, compared with 30% of the control group. The utilisation of pain control methods should be reassessed in some instances. Only 16% of the combined total were described as being in a lot of pain during the first night following discharge and 13% on the day after.

75% of the combined group equally distributed among both groups used analgesics during the 24 hours after returning home.

Sleep
14% of the experimental group slept badly the night following the operation compared with 38% of the control group.

Referral to G.P.
No parent from either group felt it necessary to contact their G.P. in the post-operative period.

Community Nurse Unit
All of the control group were visited by a community nurse the day after operation and 88% of the experimental group. This differing level of service
reflects the availability of community nurses throughout the catchment area of the health region.

ANXIETY OF PARENTS - QUESTIONNAIRE 6

A Spielberger self evaluation questionnaire designed to measure state and trait anxiety was administered to parents on admission prior to the child going to theatre. There were no statistically significant differences between the two groups.

POST HOSPITAL BEHAVIOUR - QUESTIONNAIRE 7

A post hospital behaviour check list was administered to all families one week after discharge.

Although there were no significant differences between the control and experimental groups, there were points of interest. 16% of the total group became upset (more than or much more than before) at the mention of hospitals and doctors. 11% of the children followed mother around the house more and 10% had bad dreams and difficulty in getting to sleep. 14% of all children were described by their parents as being more disobedient.

Estimates of urinary cortisol levels

Urine samples for routine testing are brought to the day ward by all parents on the day of admission. Urinary cortisol levels were measured on samples from the experimental and control groups. (Experimental n=40) (control n=27).

There were no significant differences between the groups.

Facial Recognition Scales

The face rating scale demonstrated that children were able to use it to a satisfactory standard i.e. the scale measured what it set out to measure. However, there were no differences between the experimental and control groups. The use of such scales requires further work but may prove of substantial interest to child health workers.
DISCUSSION OF RESULTS

The Department of Health's Welfare of Children and Young People in Hospital (HMSO 1991) aims to publicise best practice given to children and families. A cardinal principle embodied within the document is that children and families have a right to information appropriate to their age, understanding and specific circumstances. Furthermore the document highlights the need for families to be given all relevant information appertaining to admission, including written information. Examples of good practice e.g. pre-admission programmes which allow a family to visit a ward/clinical areas prior to admission to familiarise themselves with the environment and procedures, are encouraged. The report also emphasises the need for discharge planning and discusses the necessity of meeting families prior to admission if possible.

Such recommendations should cause a steady growth in the pre-admission programme movement throughout UK children's units, especially during the drawing up of contracts between the purchasers and providers of health care. Purchasers of health care may well include such innovations within the standard setting protocols.

Attendance

Attendance at the Saturday Morning pre-admission programme at Southampton remains poor but has improved following discussions with the medical staff who have agreed to promote the idea further. Involvement of local radio is probably an extra organ of communication if this can be arranged. Some radio stations provide free of charge air time for local charities, events etc., and this should be explored whenever possible. The telephone solicitation revealed evidence that parents could not attend on the basis of financial restraint. The cost of bus fares and the problem of journey times should be investigated further and it might be possible for fares to be refunded. The question of moving the pre-admission programme to the out-patient department to ensure better attendance is very promising, but complex. The argument that all routine admissions attend out-patients prior to admission, whilst true, does not necessarily imply full compliance with any programme that may be running at that time.
Preparation in Out-patient Departments

The evaluation of the Saturday Morning pre-admission programme currently running at Southampton's University Hospital has shown that despite improved attendance, there are still large numbers of children who escape the net and receive little or no preparation prior to admission. This has particular ramifications for parents who wish to be involved with their children during stressful procedures such as anaesthesia induction.

Some parents feel their children do not need preparation, some dislike hospitals themselves and the thought of an extra trip is abhorrent to them. Some families are unable to attend because of employment practices which make Saturdays non-viable.

Preparing families during the initial out-patient visit may appear sensible, but has nevertheless disadvantages. If one accepts that any preparation is better than none whatsoever, then out-patient preparation should be carefully considered. A large majority of children awaiting elective medical/surgical admission are seen prior to admission in the out-patient department. The physicians and surgeons who work in out-patient departments are often hard pressed dealing with the sheer volume of attending families. Such doctors may, therefore, have little time themselves to dedicate to preparing children and their families for hospital. The potential for preparing families for hospital in the out-patient department remains, but requires harnessing if it is to be successful.

A facet of many out-patient departments is the waiting time that most clients have to endure. For many this wait can extend up to several hours. Many departments are endeavouring to cut down on this waiting time as a component of their standard setting exercises, for such improvements are easily measurable and pro rata give high status when achievable. However, on the basis that most families will spend some considerable time in the out-patient department, could not this time be usefully utilised? Recent skills mix exercises conducted under the auspices of the Department of Health, have indicated that the skills of many out-patient nurses are under utilised. Highly trained children's nurses should, and can provide more than a traditional out-patient service. With suitable play specialist support it might be possible to emulate on a daily basis that which occurs on Saturday mornings, thus ensuring
at least better preparation for the majority of families awaiting childhood admission.

It might not be possible to run something as complex as the Saturday Morning club, but with the use of audio visual material in the out-patient department, it would be possible to make a valuable contribution. Should parents have a role in the anaesthetic room and other areas of the hospital, the initial outpatient department visit may provide the opportunity to rehearse such roles.

**Preparation prior to hospital admission**

Few children have the advantage of school or play group/nursery based hospital preparation. Given the large numbers of children admitted to hospital every year, the majority of which are admitted as emergencies, this situation is lamentable. Schools and play groups could and can do more to address this situation. With little effort this could become part of the National Curriculum.

**CONCLUSIONS**

Despite the lack of hard empirical evidence to demonstrate the efficacy of pre-admission programmes, they are appreciated by the client group who continue to seek information related to childhood hospital admission. The failure of some groups to attend the programme suggests that other strategies be employed to ensure a minimal universal preparation for children attending hospital, either as emergencies or for routine admission.

This strategy will allow hospital staff to fully explore parental roles in sensitive areas of the hospital such as the anaesthetic room before admission.

The quality standards of care embodied within the NAWCH recommendations (Thomes, 1991) highlights the benefits of preparatory programmes and it should be possible for purchasing authorities to insist on their incorporation into any provider unit contract. Children's units actively considering increased roles for parents on children in hospital may wish to seriously consider pre-admission programmes as part of their overall strategy.
CHAPTER 5
Parents in the anaesthetic room - A review of the literature

Until recently there have been relatively few reports in the anaesthetic literature that discuss the presence of parents in the anaesthetic room. The paucity of research based journal articles prior to the 1980's reflected the position of parents and their role in hospital during their child's admission. Parents were perceived as passive by-standers having little part to play in the complex web of procedures that constituted a hospital admission. The enfranchisement of parents facilitated under the auspices of the Platt report (1959) was not universal and the formation of the National Association for the Welfare of Sick Children (NAWCH) in 1961 to further this work was timely. NAWCH promoted a change in the traditional model where hospital personnel acted "in loco parentis" and developed the concept of partnership. Under this new model, parents are seen as equal partners in the delivery of care with a diminution of the patriarchal influence of health care professionals. Also accompanying this change in attitude among hospital personnel was a greater access to areas of the hospital that had traditionally been closed to parents. Probably the last domain to deny access to parents is the anaesthetic room.

Why have parents not been welcome in anaesthetic rooms?

Parents have been traditionally "persona non grata" in anaesthetic rooms for a number of reasons:-

1. Local customs, red lines and transfer zones.
2. Fear of increased risk of infection.
3. Problems of coping with 2 patients (the parent and child).
4. Training experiences may be hampered by parental presence.
5. Fear of having a potential critic in the anaesthetic room.
6. Fears that parental presence may exacerbate a child's anxiety.
1. Local customs - red lines and transfer zones

Many of the current district general hospitals were planned during the 1950's when prevailing dogma sited operating suites far from the inpatient areas. This sound underlying philosophy was based on genuine principles of asepsis and prevention of cross infection. The elaborate procedures developed over a number of years and still used by many operating departments highlight the concerns that theatre personnel have for the safety of their patients. This must not be lightly dismissed and hospital acquired infection is not to be underestimated. Despite the obvious truth in such statements the sheer complexity of some operating department rules and regulations are confusing.

2. Fear of increased risk of infection

Parents and other lay visitors to operating departments are thought to be harbingers of infection. Theatre personnel overtly use the departmental rules to control the flow of itinerant traffic. The red lines and transfer zones exist to prohibit traffic and act as "sleeping policemen" for operating department staff themselves. The belief that clothes may carry fomites has led to the introduction of specialised theatre clothing or "greens". Theatre staff routinely change into greens when they commence duty and are encouraged to shower beforehand. The spectrum of personal hygiene and clothing standards throughout the population is sufficient reason for theatre personnel to justify the continuation of specialised clothing.

Although it is believed that a link exists between stress and the risk of acquiring infection, there is no evidence in the scientific literature which suggests that parents entering anaesthetic rooms not wearing protective clothing are an infection hazard, providing they do not engage in procedures. Given the earlier mentioned fears of fomites, there is no reason why mothers could not be told in advance to bring a clean laundered cotton dress to wear when taking their child to the anaesthetic room. Likewise the provision of one piece jump suits overcomes criticisms. Should parents have an existing infective condition or an exfoliative skin disease which is active, it should be advised that the other parent accompany the child. Should a child wish to take a toy or comforter to the
anaesthetic room, provided it is clean there is no reason why this should not be allowed and removed after anaesthesia induction.

3. Problems of coping with two patients

The primary concern of the anaesthetist is to the child undergoing anaesthesia. It is widely accepted that the process of anaesthesia induction may be stressful and not without complications. This is especially true during childhood and many anaesthetists worry that their full attention which should be on the child may be unnecessarily diverted to a parent who may need attention. Some parents find the atmosphere of the operating department frightening and unsubstantiated anecdotal evidence purports that some parents become disruptive or faint, thus compromising the anaesthetists exclusive attention to the child. Some parents in recognising their own fears do not wish to share this aspect of their child's admission (Hain, 1985) preferring to be reassured that their child will receive all the care and attention necessary from the staff. There is no evidence in the literature that parents are in any way disruptive when they accompany their child to the anaesthetic room.

4. Training experiences may be hampered by parental presence

Compromised training of junior anaesthetists is sometimes quoted as a reason for excluding parents from anaesthetic rooms. It should be emphasised that junior medical and nursing staff have successfully participated in ward based training programmes in the presence of parents and other members of the family. Hannallah and colleagues (1984) conducted a study which examined junior anaesthetists attitudes toward parent's presence during anaesthesia induction. The results of the study which involved 22 junior anaesthetists acting as their own controls, demonstrated that 100% of the sample agreed that there were real advantages to children and parents in having parents present during induction, compared to 90% at the beginning of the study. As expected the trainee anaesthetists expressed a certain level of anxiety related to parental presence. This anxiety and concern decreased significantly over time. The concerns related to compromising the safety of the child did not subside significantly with experience even if concerns related to training did. This small study acknowledges the possibility of bias in that the numbers used...
were small and the host institutions policy was traditionally "pro parental presence".

5. Fear of having a potential critic in the anaesthetic room

The growing incidence of medical litigation in the United Kingdom is indicative of the growing consumerism of patients. Some anaesthetists have concerns that parents may be critical if something goes wrong during anaesthesia induction. This was reflected in the Hannallah study although it did not prevent parental access to the anaesthetic room. Measures to communicate with parents during the pre-operative period regarding their role in the anaesthetic room may mitigate against this.

6. Fears that parental presence may exacerbate a child's anxiety

A review of the literature would tend to refute this particular hypothesis.

Early Studies

The first study of the effect of a parents presence (mother) during anaesthesia induction appeared in the English Language literature in 1967. It has been suggested, although unconfirmed, that some smaller children's hospitals throughout the UK, especially those smaller units with operating theatres adjacent to the ward areas, routinely allowed parental presence prior to this date. Apparently such colloquial local practices, unreported as they are in the literature, diminished with the transfer of those small units into district general hospitals. Schulman and colleagues (1967) investigated 32 children between the ages of 2 and 6 years of age who were admitted for tonsillectomies. Half of the children were randomly assigned to be accompanied to the anaesthetic room by their mothers. The research questions posed by this initial study were (1) How are children influenced by their mothers presence during medical procedures i.e. anaesthesia induction and (2) Do mothers become upset, critical, interfering, or anxiety provoking if they are present. The groups were balanced for age and sex and significantly no mother turned down the opportunity of being present during the induction. Of interest is that a special room was set up to anaesthetise the children to allow parents to be present without being gownned up. The children's mood during induction (experimental and control group) and changes in behaviour following hospitalisation were investigated. Mood was
rated in several phases using a 7 point scale, which ranged from happy and contented to screaming full blast without paying attention to anything. The reliability of judges using the scale was good. The pre-threat phase was a play session occupying the first 15 minutes after the child's arrival in hospital. The threat stage was designated as the time the mother left the child on the way to the anaesthetic room (or the time she would have normally left for the experimental group) up until the start of the administration of anaesthesia. The third phase designated the impact phase was divided into two parts a) the first minute of induction and b) the remaining time up to the point of surgical anaesthesia.

A post hospitalisation questionnaire consisting of 26 items of behaviour was mailed to the mother 6 days after surgery.

The results of the data analysis demonstrated significant differences between the control and experimental groups. This was especially significant during the threat and impact phases where parental presence was judged helpful. The experience of anaesthesia was perceived to be less stressful for the accompanied group of children. The mothers who were present were enthusiastic about being with their children and were co-operative and behaved appropriately even when anxious. There were no significant differences in the post hospital behaviours of the two groups of children.

Smith (1968), a respected Boston paediatric anaesthetist states, "in children who are old enough to have fear or apprehension during surgery, the emotional factor may be an even greater source of concern than the child's physical condition, it is often in fact, the greater problem of the entire operative course."

Hannallah (1985) conducted a similar study in Canada involving the parents of 50 unpremedicated children who were allowed to accompany their children to the anaesthetic room. A comparable group of 50 children in whom anaesthesia induction was performed in the same manner but without parent's presence served as a control group. The methods used in this study included the use of a 5 point child mood scale in four distinct areas i.e. the waiting room, preinduction whilst being escorted to the induction area, during anaesthesia induction and post operatively in the recovery room. Two weeks following surgery, the parents were mailed a questionnaire to complete based on that designed by Vernon in the Schulman study. The children were induced initially by a sleep dose of
intravenous thiopental (N.B. This study was conducted before the widespread use of EMLA cream became popular). Successful anaesthesia induction was judged on the number of venepuncture attempts. Induction was judged to be technically easy if venepuncture was achieved at one attempt, difficult at 2 and very difficult if more than two attempts. It was recognised by the authors that the ease of venepuncture could be related to the skill of the anaesthetist or the lack of struggle by the children. In any event there were no reported differences between the experimental and control groups. Of considerable interest is that the mood of the children was comparable for both groups in the waiting area and recovery room, but there was a significant decrease in the number of very upset or turbulent children in the group accompanied by parents. This was manifest during the pre induction and induction periods when compared to the control group. Although no parent was very upset, or hysterical, 24% did become anxious or cry during the procedure. There were no significant differences between the two groups when the post hospital questionnaires were analysed. This result mirrors that found in the earlier Schulman study and appears to confirm that there are no longer term beneficial results in having a parent present during the anaesthesia induction. There may be short term benefits, but only anecdotal evidence exists to support long term benefits. Balbernie (1985) and Wislicki (1964) have described the trip to the anaesthetic room for unaccompanied children as harrowing and for one child in particular as psychologically damaging. Such case studies give examples of children who were adversely affected by the experience of anaesthesia induction in the absence of parents.

Although the Hannallah study has similarities to that of the earlier Schulman study, it is worthy of note that they allowed either parent and in six cases both parents to be present during the anaesthesia induction.

Skeie (1983) investigated parental presence during the anaesthesia induction of 129 children and utilised questionnaires which were administered to anaesthetic staff and parents/guardians. The results (response rate 71%) revealed that most children wanted their parents to be present during anaesthesia induction. Slightly fewer parents wished to take part in advance but slightly more thought afterwards that their presence had been significant for the child.

The questionnaire to the anaesthetic staff was completed for only 45 consecutive cases out of the cohort of 129 children. In 28 cases the mother was present at
the anaesthesia induction, and in 14 cases the father, while in 4 cases the parents did not wish to be present. The reaction of the children to anaesthesia induction was in 30 cases calm, moderate adverse reaction in 7, and in 5 cases there was reported strong adverse reaction including weeping. In one case gentle force had to be used. The anaesthetic staff concluded that the parent/guardians presence during the anaesthesia induction was helpful in 31 cases, immaterial in 7 and a little harmful in one case and markedly harmful in 1 case. The staff thought that parental presence had a beneficial influence on the child's anaesthetic experience in 33 cases but not in 6, thus confirming their participation. This study also focused on the value of preparing children and their parents for forthcoming surgery and parental accompaniment during anaesthesia induction is seen in the context of a total family centred day.

Hain (1980) poses the question, "Is it not time anaesthetists sought ways to avoid rather than encourage, any unnecessary prohibition of parents?" William Hain, a senior consultant paediatric anaesthetist from the Queen's Medical Centre Nottingham, must be credited for raising awareness of parental presence at the induction of anaesthesia throughout the UK at a time when such sentiments were the subject of much debate. He recognises that there are objectors to parental presence especially from among that group of anaesthetists whose training and experience have not prepared them for performing their accustomed tasks in the presence of relatively uninformed, fearful and sometimes antagonistic observers. Naturally they fear that in such situations, they may themselves not perform at their optimum level thus compromising the safety of the child.

It has been suggested that the personality of anaesthetists may be different from that of other medical practitioners (Reeve, 1980). Whether this has any bearing on the issue of parental presence during anaesthesia is purely speculative. In the study conducted by Reeve, the results of a personality questionnaire demonstrated that a sample of anaesthetists differed from the general population in a number of dimensions. He showed that anaesthetists were more reserved, intelligent, assertive, serious, conscientious, self sufficient but were more tense and less socially bold and self assured. The same sample of anaesthetists also differed from a sample of general practitioners in that they were more intelligent and self sufficient but more tense and introverted. The self sufficiency status valued by anaesthetists may be a factor in the parental accompaniment debate. However, any suggestion that personality profiles be
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included as part of an overall study investigating parental presence is likely to be denied.

Hickmott and colleagues (1989) conducted a study in Manchester with 49 children. An experimental group with mother present during induction was compared to a control group with no parent present. This study utilised an analysis of mood and a pre and post hospital behaviour check list.

Mood was assessed by a recovery room nurse or a specially seconded ward nurse who took no part in the anaesthetic procedure. It is not clear from the discussion exactly how many observers were used or whether the reliability between judges was assessed. This study cites Schulman's study as providing evidence of a reduction in post operative behaviour disturbance after hospital discharge in children whose mothers were present at induction. Although Schulmann reports significant differences in mood, no analysis of variance of post hospital behaviour provides evidence to support this claim. There were no significant differences between the two groups of children and mood and cooperation during waiting and induction did not differ. Analysis of the behaviour ratings post operatively showed no significant differences between the two groups. Despite this, however, the Hickmott study reported that no mother was critical or interfering and when present during induction, were calm and supportive to their children.

One effect of maternal presence on technical factors during induction was demonstrated in induction timings. The duration of the induction period was longer in the accompanied group with this group taking 1.2 minutes longer to achieve a state of surgical anaesthesia. However, this study highlights the negative correlation between the age of the child and the time taken for induction. As a consequence part of the differences in induction timings can be explained by the fact that the accompanied experimental group were younger. When corrected for this variable the time difference due to maternal presence is reduced to 48 seconds. The authors conclude that accompanied children take longer to induce than non accompanied children.

Hickmott's study was designed to answer four questions related to parental presence namely: 1) Are children less disturbed or more co-operative when accompanied? 2) Does maternal presence influence the anaesthetic procedure? 3) Does maternal presence influence post hospital behaviour? and 4) How do
mothers feel about being present at induction? The study in addressing question four demonstrated that a majority of mothers were in favour of being present during induction and that all the mothers who accompanied their children would wish to again. The study in addressing questions 1 to 3 showed that maternal presence did not appear to influence children's mood or co-operation at anaesthetic induction or their subsequent post hospital behavioural responses. This small study concluded overall that there was little justification for excluding parents who wish to be present during their child's anaesthetic induction.

A similar Montreal Children's Hospital study conducted by Johnston and colleagues (1988) examined the effect of parental presence during anaesthesia induction and augmented the work of Hannallah and Rosales. This replication was justified because of the shift towards day surgery which had occurred following the Hannallah study. The results of the study were surprising compared to the previous Montreal study in that they suggest that some parents have difficulty in coping with the stress of their child's induction. The means for all measures for each group were almost identical, yielding no differences between those parents and children who had been together during the anaesthesia induction and those who had been separated at the theatre doors. Johnston concludes her study by suggesting that parents should not be forced into accompanying their children and by highlighting the need for pre-operative instruction. This study is highly innovative in that it is the first to report the use of videotape in the judgement of the children's mood during induction.

A further report of this Montreal based research project appeared in the Canadian Journal of Anaesthesia (1990) which highlighted the concerns of allowing reportedly anxious parents to accompany their children to the anaesthetic room. The presence of calm parents appeared to make no difference to the children's experience of anaesthesia induction. Nearly fifty percent of the parents used in the study were judged to be extremely anxious and their presence at induction therefore contra indicated. This report reiterates the message of the previous publication in that highly anxious parents should be excluded from anaesthetic rooms and offered additional counselling and support.

Deep interest in the subject of parental accompaniment in the UK was kindled following the publication of a letter in the British Medical Journal in 1985 (While, 1985). Adrian While, a physician himself, described his family's experience during his 3½ year old daughter's admission for insertion of grommets at a
London Children's' Hospital. According to Mr While the duty anaesthetist was apparently adamant that there was no benefit in a parent being present during the anaesthesia induction. Furthermore, the anaesthetist stated that he would not anaesthetise the child if the parent insisted in attending. The resulting reported psychological trauma, described as harrowing, may have been avoided, according to the father if he had been allowed to accompany his daughter. In any event Mr While felt that whatever the anaesthetist's misgivings, the presence of a parent could not possibly have made things worse. The publication of this letter in the BMJ stimulated much correspondence (see Chapter 6) and demonstrated the dichotomy of opinion which existed at that time in relation to parental presence.

With this background Schofield and White (1989) conducted an Oxfordshire based study with the primary objective of investigating the incidence of difficulties associated with parental presence during anaesthesia induction. The study also examined the influence of premedication with special reference to vomiting after papaveretum. This study is interesting in that it was prompted by difficulties that arose when newly appointed anaesthetists tried to prevent parents accompanying their children to the anaesthetic room. This was because the new appointees found the presence of parents concerning, despite the fact that it was a long established tradition within the department to allow parental access. The subjects in this study were day case surgical children for whom this was the first admission for surgery. None of the parents involved had ever accompanied a child to an anaesthetic room. The children were not seen by an anaesthetist prior to induction except when warranted if there was concern about the fitness of an individual child for anaesthesia. All the children in the study were allowed to have a parent accompany them to the anaesthetic room. Ten children were unaccompanied by either a parent or relative in the anaesthetic room. Only 5 of the 141 parents who came to the anaesthetic room were obviously anxious. It was unnecessary to ask any parent to leave although 10 parents in total were judged to be less than helpful and only one was disruptive as she was very distressed. All the participative parents thought their child wanted them to be present. Of note is that 25% of the parents thought they had also responded to outside influences such as television, magazines or relatives opinions. (A leader in the Guardian on Friday the 6th October 1989 is an example of such outside influences. See Appendices).
Data was collected by questionnaires which involved the participative anaesthetists and other theatre personnel. This complex study attempted to control a number of variables to investigate the relationship of premedication and parental presence. The low incidence of difficulties with parents in the anaesthetic room and the fact that pre-operative visits by anaesthetists were not routinely undertaken is at odds with the claims of some professionals that pre-operative visits reduce the necessity of accompaniment (Kilpatrick, 1985). In addition to ratifying the position of parents in the anaesthetic room, the study confirmed that premedication provided pre-operative sedation and that papaveretum improved the immediate post-operative course but led to an increase of nausea and vomiting. Although no specific measurement of the benefits of parents could be made by Schofield and White, they conclude by stating that their study should reassure anaesthetists that a parents presence does not generate many problems in the anaesthetic room.

At the height of the parental accompaniment debate, a study conducted at a London Children's Hospital was published (Braude, Ridley, Sumner, 1990) which suggested that, "in circumstances where parents are to be excluded from induction, adequate pre-operative explanation and sedative premedication would contribute to allaying parental anxiety, but that a flexible policy may be most appropriate". The policy of the investigative unit was not to actively encourage parents to accompany their children except in special circumstances. This policy was made clear to the participants of this study which consisted of the parents of 117 consecutive children scheduled for elective inpatient surgery. The authors acknowledge that bias may have been introduced by mentioning the hospitals policy of not encouraging parental presence during the anaesthesia induction. This is justified by the authors who point out that a substantial number of the children had undergone a previous anaesthetic at the hospital and conclude therefore that many of the parents would have been implicitly familiar with the policy. Data was collected through a pre-operative questionnaire which was completed by the parents following the routine assessment and premedication of the child by the anaesthetist. The questionnaire was explained to the parents and it covered four main areas: 1) Parental wishes regarding their presence at induction. 2) Factors influencing that decision. 3) Compliance with requests to leave the anaesthetic room in the event of an emergency. 4) The influence of sedative premedicants (i.e. child asleep before trip to the theatre) on parental decision to accompany children to the anaesthetic room.
Despite the acknowledged bias, 50% of the respondents revealed a desire to be present at their child’s induction and the most commonly cited reasons for this were the child’s anxiety or the parents sense of duty. Only one parent indicated that they would not accept the preconditions for attendance in the anaesthetic room. The survey demonstrated that 32% of those parents expressing a desire to attend changed their preference if their child was to be adequately sedated pre-operatively. The perennial problem associated with adequate premedication in childhood is exemplified in Johnson and Young's Bristol based study (1986) which indicated that placebo was considerably more effective as a premedicant than trimeprazine.

Antagonism to parental presence at the anaesthesia induction stems partly from the logistic difficulties of housing parents in operating suites, some of which are old, archaic and space restricted. The Braude, Ridley and Sumner study concludes by reiterating the truism that rigid policies concerning parents in the anaesthetic room may increase hospital efficiency but are unlikely to be universally acceptable.

Vessey, Caserza and Bogetz cite their own unpublished research (1990) in highlighting the discrepancy between parents verbal reports and non verbal behaviours. When asked to identify aspects of the procedure which were upsetting, 83% of the parents studied by the authors indicated that they were disturbed by at least several factors. The rapid sequence of events witnessed by parents during induction, especially the children becoming limp were especially troublesome. The question asked is, “when parents find themselves facing surgery in later years, will the experience serve as stress inoculation and allay fears of induction or will it sensitise them making it more stressful?” Given the contagion debate, this question is particularly pertinent as producing a more stressed parent is contrary to current philosophies of family centred care.

What parents think about the issue of accompaniment is important if the recent trend towards consumerism is to be credible. Sherwood (1990) in conducting a small informal study in Brighton, found that 81% of parents in two surgical wards would have liked to have accompanied their child to the anaesthetic room. Of great interest giving due cognisance to the Vessey, Caserza and Bogetz study, is Sherwood’s claim that 96% of her cohort (25 parents) stated that they would not be frightened of going into the anaesthetic room or be intimidated by the
equipment. One parent summed up this feeling, stating, "We're tougher than you think, you know."

Smerling, Lieberman and Rothstein (1988) in surveying 150 parents who accompanied their children to the anaesthetic room, found that parental presence significantly eased induction and reduced the need for sedative premedication. The majority of the surveyed parents (82%) believed their presence had been valuable and the majority of anaesthetists (70%) thought likewise that the parents presence had helped the children.

The wide variety of practice and opinion related to the issue of parental accompaniment prompted an in-depth study which commenced with a survey of paediatric anaesthetists. (See Chapter 6).
CHAPTER 6
A survey of Paediatric Anaesthetists related to the role of parents in the anaesthetic room

Despite the fact that many professional and lay groups now believe that children facing operations benefit from having their parents with them, anaesthetists themselves remain deeply divided (Glasper, Dewar, 1987).

The correspondence from anaesthetists which appeared in the medical press following the publication of a letter by Adrian While (1985) demonstrates this dichotomy of opinion. G.W. Black, then President of the Association of British Paediatric Anaesthetists, G.H. Bush, Vice President and P. Morris, The Honorary Secretary in replying to Mr While's Personal View state in a letter to the British Medical Journal (1985) "if the anaesthetist for whatever reason feels that having a parent present might interfere with the overall conduct of anaesthesia and the safety of the child then this view point should prevail". Kilpatrick (1985) writes in a similar vein when he describes the benefits of adequate premedication via the intramuscular route and asking the parents to leave the ward once this has been given. He goes on to indicate that he prefers parents not to be present at induction. This letter contrasts with that written by Gatling, Linsay, Radford and Rooms (1985) who agree that in most cases parental presence at anaesthesia induction is of benefit to all. This flurry of correspondence was called to a halt by the editor after several weeks and at this stage it was decided by the investigator to ascertain the views of the Association of British Paediatric Anaesthetists to parental presence in anaesthetic rooms. A postal survey questionnaire was used.

Although the journal correspondence was timely, the precursor to the study was, in fact, precipitated by events within the operating suites at Southampton University Hospital. During 1985, one consultant anaesthetist who mainly specialised in anaesthetising children requiring ENT surgery, began to allow parents into the anaesthetic room. This caused considerable discussion and heated debate among all grades of theatre staff who at that time were generally not in favour of allowing parental access. It should be pointed out that the children's hospital had relocated into a wing of the new district general hospital some years earlier. It is reported anecdotally that parental presence during induction was condoned in the old children's hospital but prohibited following the move to new premises. Presumably, this follows the scenario outlined in
previous chapters and impacts on the validity of the operating department as a separate infection free clean zone. Concern was such that a member of the operating theatre management team was asked to approach the staff of the children's unit in an attempt to curtail the growing trend. It was widely believed that parental presence exacerbated the stress of anaesthesia induction and there was unequivocal support for its curtailment. At that preliminary meeting, it was suggested by the investigator that an evaluation of parental presence be undertaken before implementing any change in policy, either for or against. After negotiation with the Professor of Anaesthetics, it was agreed that a pilot study be undertaken preceded by a survey of the members of the Association of British Paediatric Anaesthetists to determine current attitudes and practices related to parental presence throughout the UK.

A questionnaire was designed and mailed to all sixty seven members of the association during the early months of 1986 (See Appendix III). Obviously, this group represented but a small proportion of those anaesthetists who delivered anaesthetics to children. Through this methodology, however, it was hoped to obtain a "weather gauge" of the practices of anaesthetists given the positions of authority held by the members of the association within the major children's units of the UK. It is interesting to note that an editorial in a Canadian Anaesthetic Journal (Hannallah, 1994) reports that 50% of those anaesthetists attending the annual North American Society of Paediatric Anaesthesia meeting allowed parents to be present during anaesthesia induction.

A total of 35 responses were returned (52%). The views of the anaesthetists who did not return the questionnaire must remain speculative, but the results confirmed the BMJ correspondence in that they revealed differences of opinion among paediatric anaesthetists regarding parental presence and highlighted the need for further United Kingdom based research.

Of the 35 questionnaires returned, 31 yielded useful data. The questionnaire addressed three main areas which corresponded to the issues raised in the journals by anaesthetists throughout the UK:

1. Policy relating to parental presence.

2. Practices regarding the use of premedication.
3. Attitudes and opinions related to parental presence.

1. POLICY

Twelve respondents had written policies regarding parental presence at the anaesthesia induction and eighteen gave parents the choice of accompanying their children to the anaesthetic room and remaining there during induction. In all cases where parental presence at the anaesthesia induction was accepted, twenty six of the respondents allowed one parent only but three did allow both parents to stay. Where a policy on parental presence existed, its implementation in 12 out of 14 cases was at the discretion of the duty anaesthetists. There was no incidence where a nurse could make this decision.

Discussion
The implementation of written policies regarding parental presence has been fraught with difficulties and this is reflected in the low numbers of anaesthetic departments who have such declared policies. One of the difficulties has been the common statement by anaesthetists that their responsibility lies with the child and not the parent. As discussed previously, there are perennial fears that during the stressful period of induction, some anaesthetists will end up with extra patients in the form of parents especially as it is widely believed that some faint. A straw poll of any group of paediatric anaesthetists would reveal much subjective anecdotal evidence related to parental presence during anaesthesia induction. Such reports have traditionally reinforced the somewhat negative stereotype image of the parent in the anaesthetic room as someone who is a hindrance rather than an asset. This attitude is not confined to anaesthetic or theatre staff and is reflected in those practices which led to the formation of Action For Sick Children (formerly the National Association For The Welfare Of Sick Children - NAWCH) in 1961. The slow but sustained proliferation of the concept of family centred care and partnership in care has effectively left the anaesthetic room as one of the last places to deny access to parents, at least on a comprehensive national level.

The reluctance of anaesthetic departments to issue written policies is also related to fears that parents may be coerced into accompanying their child to the anaesthetic room (doing so perhaps from a sense of guilt or duty). It is widely believed that such written policies will exacerbate the perceived problem and this in turn fuels fears of overwhelming numbers of parents demanding access to the
theatre suites. It is of considerable interest to compare parental presence during anaesthesia induction to the presence of partners during caesarean section deliveries. In this situation, access by partners to the theatre suites has been available for a number of years with written guidelines in place covering a range of issues.

Similar dilemmas face anaesthetists and theatre personnel when dealing with the partners of women requiring caesarean section. The draft policy from the Princess Anne Maternity Hospital at Southampton relating to the presence of a partner is shown in Figure 6-1. An interesting feature of this policy is that it includes a consent form which clearly outlines the role of the partner and protects the health authority from potential litigation. The draft policy paper prepared by NAWCH which details the role of parents in the anaesthetic room is likewise shown in Figure 6-2.
THE PRINCESS ANNE HOSPITAL

MANAGEMENT OF FATHERS WHO WISH TO BE PRESENT IN THEATRE WITH THEIR PARTNERS WHO ARE UNDERGOING CAESAREAN SECTION

AIM

There must always be agreement by the Obstetric, Anaesthetic and Operating team for the father to be present in the Operating Theatre, when:-

1. There is a planned Elective Caesarean Section.
2. A caesarean Section is planned during Labour for "Failure to Progress".
3. A woman is booked for a planned Caesarean Section, who then goes into labour before the planned date.

However, fathers will not normally be allowed into the theatre during a Caesarean Section under General Anaesthesia.

GUIDELINES

1. The Theatre Staff must always be informed that a father wishes to be present.

2. The Medical or Midwifery Staff must discuss the guidelines for fathers carefully with him, so that he is fully aware of what to expect and what is required of him.

3. The overall supervision of the father in theatre will fall to the member of staff who has been designated to escort him.

4. The father will be asked to leave if:-
   a. The woman subsequently requires General Anaesthesia.
   b. If the Surgeon, Anaesthetist or Paediatrician experience any difficulties with the operational care of either the woman or baby.
   c. If the father fails to adhere to the guidelines and becomes a nuisance.

5. The escort will accompany the father in and out of the theatre at the appropriate times.

6. The changing room for fathers to use is Room D97 and is situated between the Delivery Suite and the Theatre Reception Area. Theatre clothes are supplied by the Theatres Department.

Figure 6-1 (Part1)
THE PRINCESS ANNE HOSPITAL

GUIDELINES FOR FATHERS WISHING TO ACCOMPANY THEIR PARTNERS INTO THE OPERATING THEATRE FOR CAESAREAN SECTION UNDER EPIDURAL/SPINAL BLOCK

PLEASE REMEMBER:-

THAT YOUR PARTNER AND BABY'S SAFETY IS OUR PRIME CONSIDERATION

We are happy for you to be able to accompany your partner during her ELECTIVE Caesarean Section.

All we ask, is that you follow the GUIDELINES below for the safety of your partner and baby.

GUIDELINES

1. You should be accompanied by a member of staff at all times. We regret that you cannot stay with your partner unless a member of staff is available to escort you.

2. You will be asked to change into theatre clothing before being escorted into the operating department. Please sit outside the operating theatre until a member of staff is ready to show you in. We regret that cameras and tape recorders cannot be taken into the operating theatre.

3. Please remain seated at your partner's head and do not move around the theatre where you could get in the way of the theatre team. Following delivery of your baby, he/she will be given a quick check over and given to you for a cuddle as soon as possible.

4. If at any time during the operation you feel unwell, inform your escort who will help you.

5. If there is an emergency, you will be asked to leave the theatre and go to a waiting area. Please remain there so that we can keep you informed about what is happening.

6. The Recovery area is used by patients other than your partner. In order to respect their privacy, you will not be able to accompany your partner into the Recovery Unit. Your escort will show you back to the changing room where you can change back into your own clothes. Please wait in the Waiting Room where you will be informed as soon as possible, when your partner and baby are ready to be returned to the ward.
FATHER'S CONSENT

I ..................................................the partner of..................................................

agree to comply with the above guidelines and in the event of any physical or mental injury occurring to me during the course of my partner's operation, I declare that I will not hold any employee of the Health Authority legally responsible for any such injury.

Figure 6 - 1 (Part3)
NATIONAL ASSOCIATION FOR THE WELFARE OF CHILDREN IN HOSPITAL

DRAFT POLICY PAPER

THE EMOTIONAL NEEDS OF CHILDREN UNDERGOING SURGERY

NAWCH BELIEVES THAT

1. Children need the support of their parents on the day of operation.

2. Parents and children need preparation for a stay in hospital and need to understand what is happening on the day of operation.

3. Children should be able to be accompanied from the ward by a parent who would then remain with them until they are anaesthetised.

4. Hospital routines should be adapted to avoid unnecessary distress to children.

5. Children should be returned to the ward as soon as possible after the operation.

HOW TO ACHIEVE THIS

Preparation

6. All parents need to know that their child will particularly need their support on the day of operation. Hospital staff should be encouraged to welcome parents. If informed early that they will be welcome and needed on that day, parents who have to do so may be able to arrange time off work or substitute care for children at home.

7. Advance preparation will help parents and children to cope better with the events of operating day. Admission leaflets with specific information about operating day routines and invitations to visit the ward and meet the staff are invaluable. Specific preparation for procedures and operations by means of videos, photographs and play techniques is helpful. Parents must be told and shown what to expect and what their role will be.

8. It is helpful if an anaesthetist can meet parents to inform them of the methods to be used to premedicate and anaesthetise their child. It might be possible for parents or children to indicate a preference for a particular method.

Figure 6-2 (Part 1)
Anaesthetic Room

9. A parent should be enabled to accompany a child to the Anaesthetic Room. "Barriers" created by red lines, protective clothing and other procedures used to control entry to the Anaesthetic Suite can be overcome by staff who understand the needs of children. Protective clothing might for example be kept at the entrance to the Theatre Suite so that a parent need not leave the child to put this on. Parents should always leave the A.R. as soon as the child is unconscious or earlier if asked to do so.

10. When a parent is not available someone familiar to the child should take the parent's place and accompany the child to the A.R. Children must not be pushed across the red lines to the care of strange staff.

11. The surroundings in the A.R. should be adapted to make it less threatening to children. Attractive pictures on the walls and ceiling and toys for babies and children who are awake would help to do this.

Hospital routines

12. The day of operation can be unnecessarily traumatic for many children. Distress can be minimised by sensitive attention to certain points.

13. Children should only be starved for the minimum time necessary for safety.

14. Conflict over the wearing of gowns is to be avoided if possible. Gowns should be in attractive colours likely to appeal to a child. Children may like to choose and try on their gowns in advance. If a child refuses to wear one he should be able to go to theatre in his own clothes - loose-fitting cotton night-clothes if available. Children should be allowed to wear underpants.

15. Many children are terrified of injections. If at all possible intra-muscular injections should not be used as these can be particularly painful.

16. There seems to be very wide variation in the methods used to induce anaesthesia, not always explained by the medical needs of the child. This matter needs to be considered further and account taken of the possible effect on the child.

17. Staff should discuss with those parents not going to the anaesthetic room when might be the best moment to leave their child. Tearful separations at lift or theatre doors are to be avoided and yet the child needs his parent's support for as long as possible. A suggested plan is for the parent to leave the child in his own bed (after the pre-medication has taken effect) and wait out of sight in case the child does not settle.
18. Young children may be frightened by being placed on a trolley. If possible they should be carried or wheeled to theatre in their own beds.

19. Children who are already asleep should not be disturbed. Alternative ways of checking identity need to be found.

Post-operative care

20. Children should be returned to the ward as soon as medically possible. If this can be done there will be no need for parents to be in the recovery room, but it is often helpful for a parent to accompany the ward nurse escorting the child back to the ward. If for some reason the child is kept in the recovery area for any length of time, the parents should be sent for to soothe the child as he regains consciousness. Parents should in any case be kept informed of their child's progress.

21. All children need the support of their parents as soon as they gain consciousness. Parents must be told that their role is to keep the child calm and asleep as long as possible.

22. Parents should not need to be sent away while procedures are carried out.

23. More attention needs to be paid to pain relief for post-operative children of all ages.

Accepted Executive 23rd March, 1985

Figure 6 - 2 (Part 3)
In 1985 the NAWCH produced an internal policy paper related to parental presence during the anaesthesia induction. This was, however, not widely circulated and the first policy statement was not included in a major report until 1991 (Thornes, 1991). The 1985 policy paper had been precipitated by growing parental concerns expressed through letters of complaint to NAWCH headquarters, local and national. An example of a letter which appeared in the National Association of Hospital Play Staff News in the Summer of 1984 is given in Figure 6-3.

Dear Editors,

I returned from lunch one day recently and met a student nurse on her way to theatre with a struggling, distraught 3 year old in her arms whom I knew to be going for circumcision. The porter was following behind with the empty cot. I was more than a little concerned as I knew the mother had chosen to be with her child. I went straight to see the mother who was very distressed at being told she was not allowed to go with her son. As I was sure this was not ward policy I approached Sister about the matter. She said that she did allow people to go with their children, in fact preferred them to do so - I asked if the mother could go up to be there when the child came out. This, she said, was not acceptable because it would upset the theatre Sister, one of the disadvantages of being a child in a general hospital. I had provided the mother with the relevant NAWCH leaflets and the fact that our practice had been contradictory was cause for concern to me.

The next child on the list was 2 years old, also for circumcision. The student nurse began to go through the same procedure and this time I saw that her reason for carrying the child was because he was determined to climb over the cot bars to his mother.

Sister intervened in the corridor and said, "Let the mother carry the child up." The porter interrupted to say, "it's better to leave the mother out of it." Sister overruled this and the child went with his mother.

This scene is difficult to describe. There was Sister, mother and father, porter, me and a frantic child in the student's arms, trying to reach his mother. I began to wish I had not raised the subject.

The student returned and came straight to see me. She was nearly in tears. She said the experience of the second child had been just as bad, to have to leave his mother at the lift, go to the student nurse and, at the theatre get handed over to a nurse with a mask at which he went berserk. He was then presumably put under anaesthetic in this state.
This then was the situation:

**Ward Sister** - unaware of problem in this instance but always careful not to upset colleagues in other departments.

**Mother** - vaguely aware of her rights but not enough on seeing Sister.

**3rd year Student** - upset and confused at no general policy, wanting to do the right thing.

**Theatre Sister/Anaesthetist** - reportedly did not see that there was a problem, no contact or discussion had taken place between staff.

**Porter** - convinced that old method is best, perplexed and angry at situation.

**Child** - totally bewildered and petrified.

**Playworker** - aware of research results and damage being done - unsure of how to approach situation. Obviously the child's emotional welfare is very important but also ward management makes this a delicate situation to step into.

How do other playworkers cope with the knowledge they have but without the status to implement it? Also how has it evolved that a mother can accompany her child to the anaesthetic room and then be waiting in the recovery room as I know is accepted practice in some hospitals? HELP PLEASE.

(Editor's note. For obvious reasons we feel that we cannot print the playworker's name in this instance. Replies and comments sent to the Newsletter on this topic will be forwarded on request).

Figure 6 - 3 (Part 2)
Written Policies at Southampton
Following the initial pilot study at Southampton, a small working party under the chairmanship of the then head of the anaesthetic department, was convened to draw up guidelines for staff and parents related to parental access. The working party met on several occasions and did produce a draft policy statement as shown in Figure 6-4.

DRAFT SOUTHAMPTON POLICY DOCUMENT

GUIDELINES FOR MEDICAL AND NURSING STAFF
PARENTS IN ANAESTHETIC ROOMS ACCOMPANYING THEIR CHILDREN FOR INDUCTION OF ANAESTHESIA

1. Parents should be allowed to accompany their children to the anaesthetic room as the discretion of the anaesthetist.

2. Parents should be present only at their own request.

3. The parent's outdoor clothing and valuables must be kept in the safe custody of the ward staff.

4. Only one parent will be allowed to accompany their child.

5. Ward staff will inform recovery staff at the beginning of each session which parents wish to be accompanying their children.

6. Recovery staff will inform the ward if the anaesthetist concerned is agreeable.

7. On leaving the anaesthetic room the parent must leave theatre immediately and await the arrival of their children on the ward.

8. Confidentiality - the parent is not allowed in the operating room, theatre rest rooms, office or recovery. Admittance is only into the reception area and anaesthetic room of the theatre in which the child's operation is taking place.

9. It is not advised that parents with babies under 6 months of age will accompany their children.

Figure 6 - 4 (Part 1)
DRAFT SOUTHAMPTON POLICY DOCUMENT

GUIDELINES FOR PARENTS/GUARDIANS
ACCOMPANYING THEIR CHILDREN TO THEATRE

It may be possible at the discretion of the anaesthetist for you to be with your child during anaesthesia induction for surgery. We would ask that you observe certain procedures so that your child and other parents are not placed at risk.

DO REMEMBER:

YOUR CHILD’S SAFETY MUST BE OUR FIRST CONSIDERATION

1. One parent only allowed to accompany their child.

2. Please ensure that all your outdoor clothing and valuables are left in the safe custody of the ward staff.

3. You will be provided with a 'Coverall' suit, overshoes and cap which you must put on before entering the theatre reception area, with the help of the reception staff.

4. Please remain with your child in reception and you will then both be escorted to the anaesthetic room by a member of staff.

5. In the anaesthetic room, you may be asked to sit with your child on your lap or to stand by the trolley. You will greatly help your child, and the anaesthetist, by following the anaesthetist’s instructions carefully.

6. If asked to leave, move out promptly with the minimum of disturbance.

7. If at any time you feel unwell in the anaesthetic room leave immediately and return to reception.

8. When you leave the anaesthetic room, return to reception where the staff will give you further guidance.

Figure 6 - 4 (Part 2)

Following production of the draft document it was circulated to all interested parties. No universal mandate was obtained and the working party was disbanded. The policy, therefore, continued "by word of mouth" for some years until 1992 when an admission booklet for parents, produced by the child health
clinical directorate, included a brief mention of parental access during the anaesthesia induction. Of particular concern to anaesthetists, surgeons and theatre staff was the potential for an increased risk of infection. The results of the postal questionnaire demonstrated that where parents did accompany their children to the anaesthetic room, the majority of institutions insisted on the parents wearing some form of protective clothing, ranging from overclothes to complete changes of clothing. In four situations, parents were asked to wear masks and this is interesting as only one respondent agreed that the presence of parents in the anaesthetic room represented an infection hazard. This result was unexpected as a frequently quoted reason for excluding parents from anaesthetic rooms is "fear of infection". The debate as to what parents should or should not wear continues with a wide variety of practices and clothing in vogue throughout the United Kingdom.

The model used in Southampton is of interest in that it utilises one size green "all in one" jump suits with velcro fastenings. Complemented with "J" cloth helmets and overshoes the attired parent is usually perceived by the child to be funny and is carried off with aplomb by most parents. This policy was suggested by the orthopaedic team who continue to have doubts as to the wisdom of parental access to theatre. The degree of cleanliness and personal hygiene of members of the general public cannot be a matter that can be policed by health care professionals. There are certain items of clothing such as shoes which will obviously carry fomites and these can be effectively dealt with by the use of overshoes. It is believed that clean clothing equates to the use of overclothes and some institutions in issuing guidelines to parents intending to accompany their children to the anaesthetic room recommend the wearing of clean clothing on the day of surgery. The difficulties in ensuring this, however, make it likely that many hospitals will continue to use overclothing despite the somewhat "belt and braces" criticisms of such policies.

The results of the survey demonstrated a small bias of parental accompaniment towards day surgery and a marked bias against parental accompaniment during emergency surgery.

Given the difficulties of a low response rate of 52% which is not atypical with the use of postal questionnaires, despite stringent measures to improve compliance, it remains of interest that 38% of that group stated that the anaesthesia induction in children where parents are present is easier. Less than 10% of respondents
believed the process to be more difficult in the presence of parents. This supports the results of the Smerling, Lieberman and Rothstein study (1988) which compared the views of 150 parents with the 7 anaesthetists of their children. After the operation and during the recovery stage anaesthetists and parents were asked to complete a simple questionnaire. Both parents and anaesthetists thought the parents presence helped the child, though the parents perceptions of their role was significantly higher than the anaesthetists. The study concludes with a recommendation that parents be given access to anaesthetic rooms.

Despite areas of compliance, the results of the questionnaire about parental policy revealed contrasting practices throughout the UK and confirmed that operating departments continue to have strong reservations related to access to what are perceived to be sensitive low level traffic areas. The results of the questionnaire also revealed some discrimination by anaesthetists against certain childhood age groups with children under a year and children over 7 years as not recommended to have their parents present during induction. The mode of the respondents was for the 2-5 year age bracket or the pre-school child to have their parents present during induction. This would appear to collaborate the vast amount of literature related to children's fears which emphasises this age group as being the most vulnerable. Children under 2 years of age are small and easier to hold in comparison to a struggling 4 or 5 year old. By contrast children over 7 years can usually be negotiated with.

The question of who cares for the parent is perceived by some to be a real issue, given the amount of anecdotal evidence related to parental fainting. In 45% of respondent replies there was a clear indication that a member of the theatre staff took responsibility for their welfare. In 20% of cases, this was indicated to be a ward nurse. The use of ward nurses for this task is fraught with difficulties and there is a real danger that during times of delayed theatre lists, busy ward nurses might be unnecessarily delayed in theatre thus jeopardising inpatient clinical care.

2. PRACTICES REGARDING THE USE OF PREMEDICATION

Premedication has always been the traditional method of dealing with pre-operative anxiety and the inclusion of a sedative with other pharmacologically
active agents has ensured at least for many patients, that they are virtually asleep before reaching the operating theatre department.

There are several flaws with this time honoured predictable scenario. Firstly, modern theatre suites are notoriously susceptible to time fluctuations with the result that it is often difficult to give the prescribed premedicant at the correct time to ensure the full desired effect. Even if the drug is given at the correct time, a delay which can often be of several hours duration ensures that its effects are considerably reduced by the time the patient actually arrives at theatre. Secondly, has been the growth of surgical day care for children. Day admission is perceived to be appropriate for many surgical procedures and is growing in popularity with a strong economic argument acting as a precursor to change in many areas. Its popularity cannot be justified on economic grounds alone, however, and there are considerable benefits for the family not least being the psychological well being of the affected child. The multi disciplinary group "Caring for Children in the Health Services" whose parent organisations are the Royal College of Nursing, The British Paediatric Association, The National Association of Health Authorities and Trusts and Action for Sick Children have produced guidelines for paediatric day care surgery (Thomes, 1991). One guideline states that "every attempt should be made to eliminate or reduce the number of painful or frightening procedures and routines while the child is conscious and to keep the admission as pleasant as possible".

Irrespective of the emotional needs of the child and family is the reality that the day may begin for them at 6 a.m. as some have to travel considerable distances to reach the hospital. Some day care units operate a morning and afternoon theatre list. Coupled with distance and the need to see the child safely home following surgery and recovery, it is not desirable to have a child who is heavily sedated. At the time of the anaesthetists' survey the use of topical local anaesthetic creams had not become popular. Since their introduction, the use of such creams has become widespread and they are perceived by all to be generally beneficial as an aid to painless venepuncture. The success of day care surgery is manifest through an increase in the number of child day patients who arrive in theatre on foot, on trolleys, drive themselves in battery powered cars, motorcycles etc. who are in an extremely alert state. There are inferences that parental accompaniment might therefore be helpful and be another reason for the avoidance of sedative premedicants.
When asked if premedication was generally unnecessary when children were accompanied to the anaesthetic room by a parent, only six of the respondent anaesthetists agreed, with an equal number being uncertain (See Figure 6-5). The survey revealed that over 40% of respondents premedicated children for surgery with a similar percentage having a mixed policy. This is interesting given the results of Johnson and Young's study (1986) which indicated that placebo was considerably more effective as a premedicant than was trimetrazine. The use of atropine in very young children is undeniably essential due to the relatively small size of their airways and the risk of bradycardia. The optimum method of atropine administration remains unclear and there are still many children's units who continue to favour the intramuscular route despite the reality that children the world over hate and fear "shots". The rapid utilisation of topical local anaesthetic creams since the distribution of the survey questionnaires belies the negative response to the use of such creams when the survey was conducted during the early part of 1986.

3. ATTITUDES AND OPINIONS RELATED TO PARENTAL PRESENCE

When asked if parents should accompany their children to the anaesthetic room and remain with them during the anaesthesia induction whenever possible, 17 respondents agreed or strongly agreed (See Figure 6 - 6).

16 anaesthetists agreed that children are less anxious during the anaesthesia induction when accompanied by a parent (See Figure 6 - 7) with 12 respondents agreeing that the anaesthesia induction when parents are present is generally easier. 14 respondents agreed that parental presence should be encouraged in the recovery area with an equal number in disagreement.

The dichotomy of opinion expressed through the results of this survey as shown in the subsequent pages provided the impetus for further detailed studies.
Figure 6 - Anaesthetists’ response to the need for premedication

- Mean = 3.47
- SD = 0.94
Strongly Agree | Agree | Disagree | Strongly Disagree | Uncertain

Mean = 2.77
SD = 1.33

Figure 6-6  Anaesthetists' response to parental presence
Figure 6 - 7  Anaesthetists’ opinions on the effect of parental presence on children’s anxiety

Mean = 2.61
SD = 0.95
Where parental presence at the induction of anaesthesia is accepted is it policy to allow

a. One parent only 27
b. Both parents 3

N/A = 1

\( \chi^2 = 18.2 \)
\( P = < 0.1\% \)

Is it the policy of your unit to give parents the choice of accompanying their children to the Anaesthetic Room and to remain with them during induction?

Yes 18
No 10
Mixed policy 3

\( \chi^2 = 2.28 \)
\( P = > 5\% \)

Does your unit have a specific written policy regarding the presence of parents at the induction of anaesthesia?

Yes 12
No 19

\( \chi^2 = 1.58 \)
\( P = > 5\% \)
Parental presence during the second stage of recovery from anaesthetic should be encouraged. i.e. that period when the child is transferred from the operating room to the recovery area.

Do you

a. Strongly agree 4
b. Agree 10
c. Uncertain 0
d. Disagree 9
e. Strongly disagree 4

Mean = 2.96 (with a = score of 1 and e = score of 5)
SD = 1.4

The presence of parents in the Anaesthetic Room represents an infection hazard.

Do you

a. Strongly agree 0
b. Agree 1

c. Uncertain 4
d. Disagree 18
e. Strongly Disagree 8

Mean = 4.06 (with a = score of 1 and e = score of 5)
SD = 0.72
The anaesthesia induction in children where parents are present is generally

a. Easier 12
b. More difficult 3
c. No different 12

1 person thought it was neither different nor more difficult.

Where the intravenous method of induction is used, do you generally use a local anaesthetic to site the cannulae?

Yes 1
No 29
N/A 1

Premedication is administered to children undergoing anaesthesia via

a. Injection 1
b. Oral route 13
c. No set policy 7

Combinations

a) + b) =10
Where children are accompanied to the Anaesthetic Room by a parent, are the children

a. Premedicated 13
b. Unpremedicated 2
c. No set policy 16

N/A = 1

Where such a policy exists, is its implementation at the discretion of

a. Ward Sister 0
b. Theatre Sister 0
c. The Anaesthetist 12
d. The Surgeon 0

N/A = 17

Mixed policy

a) + c) = 1

a) + b) + c) + d) = 1
Where parents accompany their children to the Anaesthetic Room, do they

a. Wear overshoes 22
b. Put on overclothes 17
c. Wear head gear 9
d. Not change 5
e. Wear a mask 4
f. Change clothing 3

in a variety of combinations

Of the hospitals which allowed parental presence:

1. All allowed 2 - 5 year olds (100%)
2. 88% allowed 0 - 2 year olds
3. 92% allowed 5 - 7 year olds
4. 48% allowed children over 7 years
In view of the paucity of empirical data related to the subject of parental accompaniment of children undergoing anaesthesia, it was decided to undertake an experimental research pilot study based on a judgement study methodology.

Research Aim

The primary aim of the pilot study was to test the hypothesis that "day case children are less upset during the anaesthesia induction when accompanied by a parent" through an evaluation of parental presence.

Judgement Studies

Such studies focus on non-verbal behaviour with regard to independent and dependent variables. Judgement studies may employ physical units of measurement e.g. the movement of the lips when subjects under review smile, can be measured in millimetres from an established base line. Non physical units of measurement may also be employed e.g. ratings of happiness can be given on a seven point scale, ranging from "not at all happy" to "very happy." Judgements employed in judgement studies may vary in their reliability owing in part to the fact that this type of research requires the use of observers or judges. Physical units of measurement are generally more reliable than those judgements based on psychological units of measurement (Rosenthal, 1987). This may be indicative of the lower level of ambiguity attached to physical units of measurement compared to the variations in social meaning which are inherent in the more complex psychological units of measurement.

A simple model of judgement studies

(Rosenthal)
A simple judgement model has encoder attributes e.g. states (A), manifested behaviourally (B), and decoded by judges (C). The encoder states (A) then generate both non verbal behaviours expressed as (B) and the decoders judgements.

The primary objective of a judgement study is thus to explore the relationship between an encoder state or other attribute (A), the encoders non verbal behaviour (B), and the decoders judgement itself (C). This in turn can be focused at several points in the model including C, The AB, AC and BC arrows on the ABC chain.

A Judgement Study may be employed to establish parameters e.g. mean states of happiness in child subjects rather than the specific establishment of relationships. Judgement studies may be employed to establish judges ratings and therefore, definitions of encoder states and encoder non verbal behaviour. Such methods are useful in descriptive studies. The interpretation of non verbal behaviours may depend heavily on the personal characteristics of the judges themselves. One of the earliest uses of decoder judgements was to help establish that non-verbal behaviour could be accurately decoded.

At the commencement of the pilot study towards the end of 1986, Thornes' study of the same year (1986) which consisted of an audit of children's wards that had caused concern in 1982, demonstrated that 47% of the departments surveyed did not allow parents into the anaesthetic room.

Once encoders, in this case children undergoing anaesthesia, are selected for a judgement study, further selection must be made of precisely which aspects of the child's non-verbal behaviour will serve as the stimulus materials for the judges. Considerable thought and discussion took place to decide the format of the study.

The Theatre Suite

The theatre suite at Southampton was completed during the late 1970's and as theatre suites go, is considered modern. The main suite (there is a separate cardiac theatre) consists of two separate reception areas, one for children and the other for adults. The recovery areas are integral with the reception and this has been cited as a reason for prohibiting parental accompaniment. The
recovery portion of the children's reception waiting area is separated by a curtain screen. Noise is easily transmitted, however, and the design of the suite does not facilitate alterations, at least in the short term.

The reception area is accessed through two double sets of doors, the inner set has a red line painted on the floor over which none may pass unless suitably clothed. Theatre trolleys which collect children from the ward are so designed to enable the top to slide from one base to another at the red line intersection. Thus portering staff are able to transfer patients from the outer to inner sanctum of the theatres with moderate ease. The sophisticated procedures utilised within the theatre complex are clearly designed to reduce infection hazards and as clothing etc. is considered by some to harbour fomites, such policies are justified on these grounds.

**Video Recording**

The decision to use Video Recordings of children in the anaesthetic room was taken after a detailed contemplation of how to facilitate a judgement study. One criticism of previous studies were that they involved small numbers of judges often fully involved with the process of anaesthesia induction at the time of the judgement itself. The anaesthetic rooms within the theatre complex at Southampton are extremely small and adjoin the operating rooms directly. It was considered pertinent to have independent judges not involved with the induction of the child, but there was clearly no method of achieving this given the space constraints within the complex. It was, therefore, considered appropriate to film the children whilst undergoing anaesthesia induction in order to facilitate a judgement study which would at least resemble the "real life" experiences of judges in the anaesthetic rooms without actually being there.

**The Anaesthetic Room And Reception/Waiting Areas**

The paediatric reception area of the theatre complex has been decorated by the nursing staff and is both welcoming and comforting. There are many toys and most adults would describe the room as non-threatening. Despite the presence of the adjoining recovery area, the room is child friendly. However, in the absence of a parent, no amount of decor can apparently act as a substitute and prior to the commencement of the parental accompaniment project many children required the constant attention of a member of the theatre nursing staff. Given
the difficulties in maintaining the time schedules of theatre lists, it is not uncommon for some children to wait in the reception area for periods of up to one hour.

The children's anaesthetic room itself, although small, is clearly a room designed for children. The ceiling is painted with vivid murals as all children who enter are normally in the recumbent position. The central inspection lamp is decorated with a toy and the children are encouraged to look up. Most children look intently at the anaesthetist or nurse/theatre technician (ODA) with interest and possibly trepidation.

**Position Of The Video Camera**

Although the JVC video camera comes complete with a tripod stand, this was thought to be too obtrusive. Some thought was given to placing the camera in the ceiling but after consultation with engineers, this was deemed too complex and too dangerous.

After considerable trial and error, it was decided to use a hand held camera with the operator (the researcher) dressed in regular theatre greens. It was initially thought that this would detract from the spontaneity of the situation and encourage the children to act. It was further considered that the presence of a video camera in the room would create an artificial scenario which would not accurately reflect the real life situations of the anaesthetist at work. The experimenter or Rosenthal effect where the experimenter modifies the subjects behaviour is a real and constant problem of this type of research (Oldham, 1994).

A number of "dummy runs" were undertaken and the fears of the researcher were proved groundless as the children appeared completely unaware that they were being filmed. Fears relating to the spontaneity of staff were likewise groundless and after several weeks of "dummy runs" without film in the camera, the researcher became just another "fly on the wall". To place this into context, one must appreciate that the average anaesthetic room is full of strange (through a child's eye) equipment, ranging from anaesthetic Boyles machines, to various fibre optic endoscopy units. A decision at the commencement of the study to utilise limited members of the anaesthetic staff during filming necessitated the obtaining of early informed consent. This was readily given. Consent for the full
study was obtained from the joint hospital ethical committee. The familiarity of children with video cameras at that time was thought to be minimal. This would certainly be different today.

**Judges**

It was anticipated for the pilot study to utilise judges from the following groups.

1. Junior Nurses (no paediatric experience).
2. Junior Nurses (following paediatric experience).
3. Post Registration, Registered Sick Children's Nursing Students (RSCN) (i.e. trained nurses undergoing specialist 13 month training).
4. Qualified paediatric nurses (RSCN staff nurses).
5. Senior paediatric nurses (paediatric ward sisters).
6. Trained Theatre Nurses.
7. Consultant Paediatric Anaesthetists.

It was recognised that there might be differences in the way differing groups of professionals perceived children and their behaviour while undergoing anaesthesia. It was further recognised that this would be commensurate with experience but also influenced by the considerable controversy associated with the subject fuelled by conflicting journal reports prevalent at the time of the pilot study.

It was, however, anticipated that the groups of health care professionals might after viewing edited video tapes of children undergoing anaesthesia, with and without parents, be able to ascertain behavioural differences which could be measured quantitatively.
An Experimental Design

Much innovation within health care practice has not been subjected to systematic and rigorous evaluation. Roe (1994) discusses the strengths of randomised controlled trials and it was decided in view of the controversy surrounding the issue of parental accompaniment, to use an experimental design methodology. The utilisation of a control group of unaccompanied children and an experimental group of accompanied children allowed for adequate testing of the independent variable i.e. maternal presence and its effect on the dependent variable i.e. judgmental responses to video recording of children undergoing anaesthesia.

Post Test Only Control Group Design

In a simple experiment, subjects are randomly assigned to one of two groups i.e. experimental and control (Oldham, 1994). At this stage it would be customary to pretest measures of the dependent variable, in this case judgmental responses to children in a ward environment. Because of the difficulty in controlling for extraneous variables, but in particular the video camera, it was decided to utilize a post test only control group design in which neither the accompanied experimental group or unaccompanied control group were subjected to pretesting. The post test only design group allowed children to be placed in randomised groups and be filmed with or without parents in the anaesthetic room thus facilitating a range of post test judgements.

Contagion and Post Hospital Behaviour

In order to address this complex phenomenon fully, it was decided to utilise a well used previously validated anxiety rating scale namely The Spielberger state and trait anxiety rating test (Spielberger, 1970). The study also sought to address whether or not differences in behaviour between the accompanied and unaccompanied group were present and observable by parents on the child's return home. A well used validated tool - The Vernon Post Hospital Behaviour Checklist was utilised (Vernon, 1966).
Informed Consent

Although consent was obtained from the hospital's joint ethical committee, it was necessary to have detailed consultations with all grades of theatre personnel and nursing staff from the paediatric surgical day unit. A number of meetings took place with nursing, medical and paramedical staff to explain briefly the pilot study. The majority of staff were able to sanction a limited 3 month trial period of parental accompaniment.

Clothing

It was originally intended simply to allow parents (mothers for the pilot study) to wear overshoes, but negotiations with the orthopaedic surgeons proved difficult and they were insistent over their claims that all visitors to the theatre suite should change clothing. After some discussion, a compromise was reached whereby the directorate purchased a number of green all-in-one over clothes "jumpsuits" for parents to wear. In addition, parents were mandated to wear caps in addition to overshoes. Although the researcher had some reservations concerning this insistence by the orthopaedic surgeons on the necessity for parents to wear over clothes (given the paucity of empirical evidence related to clothing and infection) in practice it proved uncomplicated and untroublesome. Indeed, the children often found it amusing and the many staff found it an icebreaker on first acquaintance with the parents. The supply of clean jumpsuits (all of a large size) were placed with the theatre vestibule just forward of the redline Junction. Trial runs with the outfits demonstrated that the inconvenience for parents and staff was minimal.

In addition the subsequent editing of video tapes was easier because all the figures in camera view were dressed alike and therefore more difficult to differentiate thus maintaining objectivity.

The Day Ward

The paediatric surgical day ward is a purpose built unit named after its founder John Atwell, a paediatric surgical consultant. The day unit at Southampton University Hospital caters for children within a wide range of surgical specialities (Atwell, 1985). The success of the day surgical unit in developing a complementary community paediatric nursing service allows the majority of
children to be admitted either in the morning or early afternoon and be discharged by 6.30 p.m. Children who have had a general anaesthetic are visited at home the following day by a nurse and appropriate advice, care and support given. Given the wide range of conditions amenable to day surgery, a number of operations including orchidopexies, herniotomies, circumcisions, endoscopies and some minor orthopaedic procedures are performed. The day ward and its infrastructure has been emulated in many parts of the UK as has its associated community nursing service.

The decision to use only children from the day unit for the anaesthetic study was taken for a number of reasons but the greatest being that an overnight stay by the child was removed as an extraneous variable. Given the great difficulty in controlling variables in clinical situations, the removal of one of such importance was seen as sensible. The main aim of the study and the primary research question related to the effect of parental presence only during anaesthesia induction. The sheer volume of research based literature related to the effects of an inpatient stay for a child made it necessary to focus on day case children (Robertson, 1962). The anaesthetic staff were also more comfortable with the perceived less complicated day case children as were the theatre nursing staff. The debate related to parental presence during induction was less heated with day case children than that generated by inpatient children.

The children's day ward is adjacent to the main children's unit which occupies the top floor of the east wing of the hospital. The main theatre suite is situated on the floor below in the centre block of the hospital. This necessitates a short journey to the lift bay and a subsequent journey to the theatre by children (and their parents) attending for surgery. Anecdotal evidence from staff who had worked in the old children's hospital prior to 1974 supported the contention that the journey to the theatre compounded the labile anxiety state of the children. Elliot (1991), conducted a small study examining the "theatre trolley trip" and the relative head first or feet first position of the child and the trolley. Old wives tales of head first for the living and feet first for the dead may indirectly contribute to the anxiety state of the parents or some children. In addition, the theatre suite in the old children's hospital was adjacent to the surgical ward area as it is still in some children's hospitals e.g. The Royal Edinburgh Hospital For Sick Children. This was thought to make matters easier. However, one has to give due consideration to other factors which produced compliant children in the past. The principal factor then was the almost universal use of sedative premedicants...
which ensured that most children were asleep before they ever got to the theatre doors. In effect, the process of anaesthesia induction was commenced in the ward. Nevertheless, the view of those staff who had experienced both the old and the new system tended to remember the former through "rose tinted spectacles".

The decline in the use of sedative premedicants particularly for day case children has ensured that the vast majority are awake when they are taken from the ward to the operating theatre. The greater emphasis on parental involvement with day case children necessitated by the whole philosophy of this type of care has created a situation where parents perceive themselves as equal partners. As partners in care, some parents have indicated a strong wish to remain with their children until they are fully anaesthetised. That these wishes have been influenced by the press, the media, Action For Sick Children (formerly NAWCH) and others, only exacerbates the dilemma that some parents find themselves in during a child's stay in hospital. There is no doubt that some professionals believe that some parents are made to feel guilty if they do not participate in every last detail of the child's admission. The decision to utilise only day case admissions was thus taken to explore some of these issues.

**Parental Consent And Information**

All parents were seen by the researcher at the beginning of the surgical day following the admission procedure. Parents normally arrive for the morning session at 8 a.m. with the theatre list commencing at approximately 9 a.m. Given the tight time schedules, the surgeons normally plan at least one inpatient case before commencing the minor day cases. Despite this, the parents are faced with a barrage of questions from many people, all in a short space of time. It should be remembered that the children for admission have usually been fasted from the previous night and are hungry and thirsty. The parents in sympathy with the children often choose not to eat themselves for fear of upsetting the child. In addition, some parents from further afield may have left home at 6 a.m. often with fractious younger siblings in tow. The end result is often a far from happy family who find the day tiring and stressful. The researcher was sensitive to this and endeavoured to approach parents for consent in a relaxed and non threatening manner. The parents were informed that the paediatric unit were planning a preadmission programme (See Chapter 4) and as part of that work were investigating how children responded to
different environments to which they were subjected including the anaesthetic room. The children were randomly selected from the operating list on random days and as part of the explanation of the project the mothers were invited to accompany their children to the anaesthetic room and remain with them until they were asleep. Only one mother turned down the invitation to accompany her child to the anaesthetic room. The researcher was careful to give very little emphasis to the anaesthetic room experience of the parent. It was clearly important for the parent to feel as relaxed as possible.

In order to prevent a Hawthorn effect, whereby the mother might act the part desired of her (and the child) no mention was made of the true aim of the study. All mothers were fully debriefed afterwards of the true nature of the study.

The parents who accepted the invitation to participate in the study were given a brief explanation of what to expect. The researcher was insistent on speaking to the parents whilst the children were playing and was at great pains to wear normal clothing (to minimise recognition in the anaesthetic room). During this period while the children were playing in the day ward, the parents were told (singularly) of the clothing they would have to wear i.e. a one piece coverall over their clothes, special overshoes and a paper hat prior to entering the operating theatre department. It was explained that they would have to wait for a short period in the theatre reception area/recovery before going into the anaesthetic room itself. All parents were informed that they could hold their child’s hand until he went to sleep and that the anaesthetist might ask them to sit the child on their knee where a gaseous induction was necessary. N.B. early experience modified the explanation after several parents admitted feeling alarmed after the gaseous induction of their children.

It was realised by the researcher that a further explanation would have to be given to explain why the children would suddenly feel heavier and lifeless. In a Canadian study (Vessey, Bogetz, Caserza and colleagues, 1994) of parental upset associated with participation during the induction of anaesthesia, the most upsetting factor for both mothers and fathers was separation from the child after induction, seeing the child upset before induction and watching or feeling the child go limp during induction. All parents were informed that they could return to the day ward where they could wait until their child’s return from the theatre. N.B. This study included the role of parents in the anaesthetic room only. Some attempt at the commencement of the study was made to include the recovery
There was and remains no mandate to introduce this. A subsequent study will be necessary to evaluate this aspect of parental participation in care.

The parents were given some information regarding the methodology of the research project and gave their consent to be videotaped with their child freely. They were instructed to ignore the video camera operator following the initial interview in the day surgical unit. When they met the operator again he was dressed in theatre greens and cap. Throughout the interviews the researcher avoided contact with the child and only concerned himself with the mother. Mothers were specifically asked not to discuss the project with the children and the importance of the children appearing natural on video tape was stressed. The mothers appeared to fully appreciate the necessity of the children remaining ignorant of the project to avoid acting and all were co-operative and helpful. A decision to use only mothers for the pilot study was taken after due consideration of the other variables and it was deemed prudent to only include fathers in the larger main study where appropriate.

The Subjects Of The Pilot Sample

A total of 23 boys were filmed. Boys were chosen for the pilot study as they represent the largest cohort of children entering the day surgical unit.

![Pilot sample distribution diagram]

10 boys accompanied

10 boys mean age 2:10 yrs
range 0:6 - 5:10 yrs
with mother present

13 boys unaccompanied

13 boys mean age 3:5 yrs
range 2:0 - 5:0 yrs
without mother present

Total 23 boys
For the pilot study, it was further decided to use only boys undergoing minor genito-urinary surgery including inguinal hernia repair as this group represented the largest sub group attending the day ward for surgery. The surgical unit at the University Hospital is a regional referral unit and therefore takes cases from across the length and breadth of the regional health authority. There were 13 boys filmed without parents and 10 with. All children with or without their parents were filmed on entry to the anaesthetic room until the point of surgical anaesthesia when accompanying mothers were routinely asked to leave and return to the ward by the anaesthetic personnel. The parents were given help to remove their over clothes at the door to theatres by the member of the nursing team on duty in the reception area.

**Filming**

After experimentation the researcher was able to stand in the left hand rear corner of the anaesthetic room and using the zoom lens facility was able to focus clearly on the face of the child as he entered the room feet first on the trolley followed by the anaesthetist and the parent. From the corner position it was then possible to focus on the child during a variety of operator techniques commensurate with the age of the child and the method of anaesthetic administration. The camera operator endeavoured to concentrate the filming on the child and not the parent or anaesthetist. Only on few video clips could the researcher identify a parent specifically and only if one knew would a subsequent observer identify a parent. The green oversuits of the parents ensured uniformity of personnel for the subsequent judges asked to view the video clips.

**Controlling For Premedication**

Attempts to control for premedication failed during the pilot study. No attempt was made to control for the use of a EMLA CREAM, a topical local anaesthetic which was introduced during the same period as the pilot study. Greater rigour related to premedication and the use of EMLA cream was maintained throughout the main study. As a consequence, two children (under 1 year of age) received intramuscular atropine approximately one hour before attending theatre. It was not thought to be a major problem but clearly in older children with needle phobia it could be an important variable.
Video Tape Editing

A total of 23 video clips i.e. one for each child of varying lengths represented the raw material gained during the pilot study. At the commencement of the study it was decided to attempt where possible, to replicate the judgement areas of the earlier well quoted North American Studies i.e. The Schulman and colleagues study (1967) and the Hannallah and colleagues study (1983). In these studies judgements were made on children (accompanied and unaccompanied) in the waiting area, as they entered the anaesthetic room and as the anaesthetic procedure commenced. The former study assessed the mood of the child during a prethreat stage which was designated as the first 15 minutes after admission, where play occurred with the mother. The second stage known as the threat stage was designated as the period of time after the parent left the child on the way to the anaesthetic room (or time when she would normally have left) until the commencement of anaesthesia. The third stage designated as the impact phase was divided into two parts:

a) the first minute of induction

b) the remaining time until the occurrence of surgical anaesthesia.

The latter study similarly assessed mood in 1) the waiting room 2) pre induction while being escorted to the induction area 3) during the anaesthesia induction and 4) post operatively in the recovery area.

Given the lack of resources and the limited time of the researcher, it was decided at least for the pilot study, to test the methodology only on a stage designated as the pre-threat stage as the children were brought into the anaesthetic room and a stage designated as the impact stage at the commencement of induction either via the gaseous route or the intravenous route. It was conceded that for the main study some assessment of the mood of the children would be obligatory in the waiting area. As a consequence, the video tapes were edited into the two distinct stages each lasting 30 seconds in duration. Substantial thought was given to the ideal length of the edited video clips as the motive was to produce a usable master judgement tape that could be viewed by groups of judges. The first edit of the tapes produced uniform pre-threat and threat stage clips with extraneous material removed. A further edit motivated by the time constraints and motivation/attention span of the potential judges created clips of 30 seconds
duration i.e. stage 1 (pre-threat) 30 seconds of video tape prior to the commencement of induction distinguished by the absence of needles or anaesthetic masks/tubes and stage 2 (impact stage) 30 seconds of video tape after the commencement of anaesthesia induction distinguished by the cannulae touching the skin for an intravenous induction and the face mask or tube entering the child's line of vision for gaseous inductions. The following model was used:

![Diagram](image)

23 prethreat clips plus 23 impact clips = 46 clips

**Figure 7 - 2** Video Editing Model
Facial Recognition And Emotion

The human face is the most varied and reliable physical attribute of human beings. There is immense variation across and within the many different races of people. Thus it is hardly surprising that no two faces appear identical to the human eye. More remarkable is an individual's ability to perceive these aspects of a person's face that are unique, despite changes brought about through growth and ageing. This ability to discriminate the relative proportions and configuration of the bones and flesh of faces is part of the very important and seemingly limitless capacity for identifying other members of the species. In recent years there has been a great deal of psychological research into the way man perceives and recognises faces and facial expressions and the literature on the topic is vast. Carey (1981) has demonstrated that children as young as 7 months of age possess the ability to recognise faces correctly, but it is not until the age of 10 years that children achieve an adult level of competence in facial recognition. This is because children below this age do not have the memory capacity and the configurational strategy to recognise faces as adults do.

In addition to being an important source of information about the identity of a person, the face is also able to display a wide range of expressions which correspond to emotions such as fear, anger, surprise, happiness and sadness. Cross cultural studies conducted by Akman and Friesen (1985) show that these primary emotions are recognised consistently by people from all cultures, suggesting that the relationship between emotions and expressions is universal. For the very young child, facial expressions are an especially important source of information about the feelings and intentions of others and a number of researchers have investigated the categories of emotion that can be discriminated. Studies by Izzard (1971) and Green and Akman (1973) show that by 4 years of age children of both sexes can recognise most emotions from facial expressions and that by 5 years of age children can achieve almost adult levels of accuracy in the labelling of emotions. That such emotions can be discriminated by individuals from facial expressions is interesting and augments the decision to use video taped anaesthetic episodes of children with and without their parents. The decision to use 30 second clips of video film was taken despite the literature which shows that individual judges are able to make accurate judgements of emotion from a single frame facial photograph. Recognition of faces although potentially a reliable key to identify poses a far from trivial problem of visual pattern classification. Faces form an homogenous
set of patterns in which there may be very subtle differences between one individual face and the next. Recognition memory is the ability under experimental conditions to recognise facial photographs on the basis of limited exposure. Memory for faces under laboratory conditions is very accurate but white subjects are generally less good at discriminating black faces (Bahrick, Bahrick, Wittlinger, 1975). For this reason, children from black minority ethnic groups were excluded from the study. The pilot study was able to predict that 30 seconds of film exposure to a child's face should be sufficient to enable judges to make accurate judgements of the child's emotional state.

A final judgement tape consisting of 46 video clips (23 x 2) was created with the prethreat and threat clips randomly positioned on the tape. To differentiate the clips, a bell, spoken number and blank black tape were used. The edited judgement tape, therefore, consisted of 30 second video clips of children just about to be anaesthetised or undergoing anaesthesia in random order with and without parents. Each video clip was preceded by a bell and spoken voice - over number. A gap of 30 seconds of blank, black tape was utilised to allow judges to "score" each child and to differentiate each clip. The final tape was somewhat overlong at 40 minutes duration and represented the maximum time the investigator could expect the judges to concentrate for and be co-operative. It was conceded that tapes of shorter length would be necessary for the main study. The purpose of the bell and number was to alert the judges to carefully watch the TV monitor screen and to correspond to the number of the pages of the judgement booklets.

The Judgement Booklets And Scoring Grid

Schulman and colleagues study utilised a seven point scoring system with happy and contented children scoring 1 and upset full blast screaming children scoring 7. Hannallah and colleagues study assessed the children's mood on a 5 point scale. The pilot study was intended to ascertain whether differences in mood between accompanied children and unaccompanied children could be detected by judges and it was decided to use a seven point scoring system using a number of adjectives commonly utilised to describe emotional states in children. The production of the adjective list was thus taken after consultation with the available literature and specialist child care workers. A total of 12 adjectives were eventually selected for the pilot study. Six adjectives reflected a negative response to anaesthesia induction and six a positive response. All the judges
were asked to respond to the video clips by indicating on the scoring sheet their perception of the child in relation to the adjective and whether for example they believed an individual child to be sad on a scale of not at all to very much so. All respondents were encouraged to use the full range of the scale. To assist the judges with the scoring of the adjective sheets, 2 video clips of children not used in the pilot study were prepared to show judges the ranges of behavioural reactions exhibited by children to anaesthetic induction. Judges were asked to concentrate on the child and to ignore all others in the film frames. The judges were reassured at the commencement of viewing during the briefing stage that the study was concerned only with the children. The same explanation as that given to parents was reiterated and all judges were debriefed afterwards.

Although it must be acknowledged that at least some of the judges must have been aware of the main reason for the study, all confessed afterwards that the task in hand i.e. scoring the video clips focused their attention on the child.

The judgement booklets consisted of an instruction sheet and 46 numbered sheets, each sheet printed with the 12 adjectives and adjacent 7 point scoring grids.
<table>
<thead>
<tr>
<th>Adjective</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agitated</td>
<td>X.....X.....X.....X.....X.....X.....X</td>
</tr>
<tr>
<td>Timid</td>
<td>X.....X.....X.....X.....X.....X.....X</td>
</tr>
<tr>
<td>Fearful</td>
<td>X.....X.....X.....X.....X.....X.....X</td>
</tr>
<tr>
<td>Reassured</td>
<td>X.....X.....X.....X.....X.....X.....X</td>
</tr>
<tr>
<td>Curious</td>
<td>X.....X.....X.....X.....X.....X.....X</td>
</tr>
<tr>
<td>Wary</td>
<td>X.....X.....X.....X.....X.....X.....X</td>
</tr>
<tr>
<td>Contented</td>
<td>X.....X.....X.....X.....X.....X.....X</td>
</tr>
<tr>
<td>Co-operative</td>
<td>X.....X.....X.....X.....X.....X.....X</td>
</tr>
<tr>
<td>Serious</td>
<td>X.....X.....X.....X.....X.....X.....X</td>
</tr>
<tr>
<td>Sad</td>
<td>X.....X.....X.....X.....X.....X.....X</td>
</tr>
<tr>
<td>Easy-to-handle</td>
<td>X.....X.....X.....X.....X.....X.....X</td>
</tr>
<tr>
<td>Attentive</td>
<td>X.....X.....X.....X.....X.....X.....X</td>
</tr>
</tbody>
</table>

**Figure 7-3** Adjective list and scoring grid
The pilot study utilised a total of 35 judges who were co-ordinated into groups of five. The seven groups of judge types ranged from consultant paediatric anaesthetists to junior nurses with no experience of paediatric nursing. Judges were allowed to stop the tape using a hand held "remote control" if they required longer than the 30 seconds allowed to complete each scoring sheet. However, the vast majority of judges were able to complete the scoring in the time available, especially after the first few minutes. The judges were invited to view the tape in small groups or as individuals where time permitted. All were informed that the study related to a child’s total experience in hospital and were randomly invited to participate.

**List of Judges**

1. Junior Nurses (no paediatric experience).
2. Junior Nurses (following paediatric experience).
3. RSCN Students (trained nurses undertaking post-registration paediatric training).
4. Trained Paediatric Nurses (RGN/RSCN).
5. Senior Paediatric Nurses (paediatric nursing sisters).
6. Theatre trained nurses.
7. Consultant paediatric Anaesthetists.

Figure 7 - 4  List of Judges
The researcher was personally present throughout all the video screenings and all scoring booklets were carefully filed for later scoring, judge type by judge type.

**Scoring**

A total of 1,610 adjective sheets were subsequently scored using a simple overlay scoring grid. The use of the scoring grid produced 12 scores per judge, per video clip, a total of 24 scores per child per judge. A total of 19,320 judgements were recorded from the thirty five judges used for the pilot study.

![Table of Judgements](image)

19320 judgements made up from:

- 35 judges each making
- 12 judgements per sheet
- from 46 video clips

This produces 24 judgements for each of the 23 children per judge

**Figure 7 - 5  Table of Judgements**

When all the sheets were scored the adjective booklets were carefully dismembered into individual sheets. They were re-collated to represent total scores for each child before and after the commencement of anaesthesia, judge type by judge type. The scores for each child with and without parents, judge type by judge type were subsequently entered onto computer floppy disc. The resultant data was analysed on the university mainframe computer using an SPSS-X statistical computer package.
Pilot Study Results and Discussion of Results

1. The effect of maternal presence on the time of paediatric anaesthesia induction

<table>
<thead>
<tr>
<th>Time</th>
<th>Pre-entry</th>
<th>Calming etc</th>
<th>Entry to Room</th>
<th>Administration of Anaesthetic</th>
<th>Decreasing alertness</th>
<th>Sleep Onset</th>
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**Raw scores:**

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<tbody>
<tr>
<td></td>
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<td>(b)</td>
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</tr>
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**Mean scores:**

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**Figure 7-6** Results of maternal presence on time of paediatric anaesthesia induction
During the literature search related to the presence of parents in the anaesthetic room it was noted that one study by Hickmott and colleagues (1989) commented on differences in the timings of inductions between the two groups i.e. accompanied and unaccompanied. One effect of maternal presence on technical factors during induction was demonstrated in the induction timings. That study demonstrated that the induction period was longer in the accompanied group than the unaccompanied group. The group of children with parents (n = 25) took 1.2 minutes longer to achieve a state of surgical anaesthesia. However, it must be emphasised that the accompanied experimental group were younger than the control unaccompanied group. The
study may well highlight the negative correlation between the age of the child and the time taken for induction. As a consequence of this the authors corrected for age and this brought the mean difference caused by parental presence to 48 seconds. The authors therefore, concluded that accompanied children take longer to induce than non accompanied children. This aspect of maternal presence on time is a crucial issue in the debate. Were parents to unnecessarily prolong the whole procedure of anaesthesia induction their presence would become much more debatable.

In view of this it was decided where possible to replicate this aspect of the Hickmott study. The video recordings were carefully timed using a stop watch and it was possible to measure intravenous induction timings in 8 children who were accompanied and 11 who were unaccompanied. In addition, two children in each group had gaseous inductions. The overall difference in induction timings between the accompanied and unaccompanied group was 20.5 seconds. When the gaseous inductions were omitted from the mean calculations the difference between the accompanied and unaccompanied group rose to 45.5 seconds. This difference is of a similar magnitude to that of the Hickmott study, but in this instance the findings are reversed i.e. children with their parents take less time to anaesthetise than children without their parents. It is interesting to note that a fear expressed by the theatre staff prior to the implementation of the study, was that parental presence would prolong the process of anaesthetic induction. The logging of each procedure time was repeated in the main study. The effect of maternal presence on the duration of anaesthesia induction in the pilot study children, is considerable (as shown in Figures 7 - 6 and 7 - 7). The mean reductions in timing for both gaseous and intravenous inductions is noteworthy.

2. Analysis of the Speilberger results

An analysis of the completed Speilberger rating scales gave inconclusive support for the emotional contagion hypothesis. Despite this the contagion issue is not without substance. The main point here is not that a larger study be undertaken using Speilberger anxiety rating scales for parents but that parents should not be coerced into accompanying their children if they have any reservations about doing so. It is clearly neither feasible or desirable to test every parent before allowing them into an anaesthetic room. That some parents have an elevated recorded state anxiety level before accompanying their
children to the anaesthetic room, is neither remarkable or unexpected. Most individuals have some degree of trepidation when faced with the unknown especially if that involves a dependent loved one. The ramifications of contagion for the planned Southampton paediatric pre admission programme remained considerable. Given that a number of parents are likely to be anxious and yet at the same time wish to accompany their children during stressful events, it would appear reasonable to offer a modicum of preparatory information. Should information giving be the key to empowerment, such strategies are to be commended. It is duplicitous to encourage parental participation on the one hand and on the other to be critical when they fail to perform as expected. In the absence of some parental teaching this is likely to become a self fulfilling prophecy.

Although the findings of the Speilberger rating scales were inconclusive it can nevertheless be speculated that highly anxious parents will be contraindicated in an anaesthetic room and this issue must be addressed in the light of negative anecdotal evidence from anaesthetists and theatre personnel. However, it appears that a degree of parental anxiety may make no significant difference. One issue addressed in the main study was the effect of giving parents information about their role in the anaesthetic room in advance of the procedure. The subsequent implementation of the Southampton preadmission programme on completion of the main study did include information on this aspect of the parental role.

3. Judgement Analysis

The analysis of the data liberated through the judgement scores demonstrated that the mean ratings of the adjectives used to describe the children undergoing anaesthesia for all judge types gives some support to the research hypothesis i.e. that children are less upset when accompanied to the anaesthetic room by a parent. This support is evident through three adjectives in particular from the twelve used in the study, namely Contented, Reassured and Easy to Handle.
Figure 7 - 8  Mean judgmental ratings of all 23 children with and without parents for the adjectives contented, reassured and easy-to-handle

These show significant differences between the experimental group and the control group at the level indicated in the data. The criticisms of previous studies must lie in the small sample numbers and the objectivity of the judges making the judgements. The same degree of criticisms can be levelled at this the pilot study i.e. the small numbers of children involved and the objectivity of
the judges. For the main study both larger sample sizes and larger numbers of more objective judges were utilised.

**Judge Type Ratings**

![Bar chart showing mean judgmental ratings of all 23 children for each judge type. The x-axis represents different judge types including Junior pre-paed module, Junior post-paed modules, RSCN students, Trained paed. nurses (RSCN), Senior paed. nurses (Sisters), Theatre staff, Consultant Anaesthetists. The y-axis represents contentedness ratings on a scale from 4.00 to 5.40. The chart shows that Theatre staff has the highest mean rating of 5.07, followed by Consultant Anaesthetists with a rating of 4.75, and the lowest ratings are for RSCN students with a rating of 4.45. The chart also includes a statistical test result: $x^2 = 52.57; p < 0.01.$]

**Figure 7 - 9** Mean Judgmental ratings of all 23 children for each judge type
The mean Judgmental ratings of the combined adjective scores for each judge type indicate that RSCN students, trained paediatric nurses and junior nurses with some paediatric experience rated all the children as having a less positive experience than theatre staff who rated the children's experience in a more positive way. It can be hypothesised that the mental constructs used by the theatre staff in judging children undergoing anaesthesia differ from those staff who are paediatric ward based.

It can be postulated that paediatric nurses in using the adjectives to rate the children undergoing anaesthesia were using a "child centred" approach whereas theatre staff adopted a more "procedural" approach. This of course is purely speculative but has some degree of logic when the nature of the paediatric nursing educational philosophy is examined. Most paediatric nursing curricula are heavily dominated by the concept of partnership in care i.e. between parents and health care professionals. Such curricula lay great emphasis on the close proximity of parents to children and draw heavily on psychological theories of separation. In contrast the curricula of theatre nursing courses place great importance on technical procedures and individual patient safety. Little or no credence is given to the welfare of a third party and it is within the physiological domain that theatre nurses are highly skilled. This is not to suggest that patients themselves are viewed as procedural anomic items. However, the day to day problems of keeping an operating list on schedule tends to detract from the psychological welfare of patients in operating theatres. The difference between different judge types and their mean ratings of children with and without their parents will be addressed more fully in the discussion of the results of the larger main study. The anaesthetists who naturally work closely with their patients gave similar scores to that of the more senior paediatric nurses.

Mean Ratings

Figure 7 - 10 is of considerable interest in that the mean ratings of all judges for all 23 children with and without parents show that children without parents apparently become less happy as the process of anaesthesia progresses. In the analysis of the two stages identified during this project i.e. pre-threat and impact,
Very much contented

Very much agitated

Figure 7-10 Mean Judgmental ratings of the children with (n=10) and without (n=13) parents before and after commencement of induction.

*p = 0.051

the data suggests that the unaccompanied children become more upset during the impact phase and conversely the accompanied children were judged to become less upset.

The Post Hospital Questionnaire

This aspect of the study proved inconclusive with no statistical differences observed between the accompanied and unaccompanied children. A larger
sample may generate sufficient data to ascertain potential differences between the two groups. Claims that children can suffer long term behavioural consequences following an unaccompanied anaesthetic induction are spurious in the least, in the absence of empirical data.

Parental Opinions

The 10 parents who accompanied their children to the anaesthetic room were also sent a short questionnaire inviting comments on their experience. A total of 8 returned their questionnaires. All respondents stated that they would welcome the opportunity to accompany their child again if ever the occasion arose again. A 1993 Australian study (Henderson, Baines, Overton, 1993) conducted on 154 sets of parents was undertaken to specifically assess parent's attitudes to being present at the induction of their child's anaesthetic. The investigation revealed that there was a high desire by parents to be present at induction and a belief that their presence was of benefit to the child and possibly the anaesthetist.

In commenting on their experiences of accompanying their children to the anaesthetic room, four parents stated that the experience made them and their children less anxious. Five of the parents indicated that they had been given an explanation regarding their role in the anaesthetic room by staff. Three of the parents stated that they were very nervous, confused and upset at having to leave their child in the anaesthetic room although three respondents stated that they found the theatre staff and anaesthetist very helpful. One parent indicated that she felt upset at seeing her child "look so frightened". One parent commented that she had to wait too long in the waiting room. N.B. Careful records were kept of the time spent in the waiting area for the whole of the pilot cohort. The mean waiting time for accompanied children was 21 minutes and 30 seconds and 19 minutes for unaccompanied children (as shown in Figure 7 - 11).

Only one parent stated that her child was upset by the green coverall she wore before gaining access to the theatre suite. Only one parent commented on the presence of post operative children in the same geographical area as children waiting to be anaesthetised. This particular parent felt this to be upsetting for her child although it must be pointed out that this would be based on sound only as a room divider does separate the two areas preventing children and parents
The results of the pilot study provided further impetus to undertake a larger main study.
CHAPTER 8
The Main Study

Following the pilot study analysis, a larger study was planned and implemented. A small grant from the Wessex Medical School Trust was used to facilitate the initial part of the investigation which entailed six months of video filming in the design. It was recognised that a cohort of children of significant size would be necessary to study the extraneous variables associated with anaesthesia induction in children. In addition, the subject of information giving was addressed through the preparation of parental information sheets giving high or low information. Parents in the early stages of the project were given low information sheets and those in the later stages high information sheets.

Hypothesis

The main purpose of the study was to test the hypothesis that children attending for day case surgery are less likely to be judged, by health care professionals, to be upset during the anaesthesia induction when a parent is present.

In addition it was hoped to test the hypotheses that:

1. Children who are accompanied to the anaesthetic room by a parent take less time to induce than non-accompanied children.

2. Children are less upset when anaesthetised by the intravenous route.

3. Parents who are given higher levels of information pertaining to a child's visit to the anaesthetic room, are less likely to have children who are judged to be upset.

4. Younger children are more likely to be judged as upset during the anaesthesia induction in the absence of parents than older children.

5. Boys are more likely than girls to be judged as upset during the anaesthesia induction in the absence of parents.
6. Operating theatre based health care professionals are less likely to judge unaccompanied children as upset compared to non-theatre based health care professionals.

Consent

Ethical approval to complete the main study was obtained from the joint ethical committee of the hospital and consent forms prepared to augment the verbal consent utilised and obtained in each case. As in the previous case, parents were given the same verbal explanation as that given in the pilot study. The primary explanation for the study was couched in terms similar to that contained in the consent letters (Figures 8-1, -2, -3, -4). It was clearly important not to alert the child or parent to the reality that the primary focus of the study was parental accompaniment to avoid a Hawthorn effect. Consent was obtained as usual during the time that the children were engaged in free play after the initial "booking in" period following admission to the day ward. Parents were asked not to discuss the forthcoming video filming with their children and to the author's knowledge this request was complied with. The author is unaware of any parent who contravened this request and no child was observed to be overtly conscious of the camera during filming. A caveat must be included which recognises the huge increase in video camera ownership since this study was conducted in 1988. Were this study to be repeated today, there might be greater difficulty in controlling for camera awareness among the children. It should be noted that in a study conducted by Litman, Perkins and Dawson (1993) informed consent for anaesthesia included a discussion relating to parental knowledge and attitudes towards the risk of death from anaesthesia in childhood. The authors contend that properly obtained informed consent should include discussions with parents of any risk from anaesthesia to their children. This argument has ramifications for those seeking to prepare parents for a role in an anaesthetic room.
Dear Parent

We are currently investigating how the Paediatric Unit of Southampton General Hospital can provide the best possible service for children in hospital.

During your visit to the Day-Surgery Unit, your child will spend time in various areas of the Hospital: the Day Ward, the waiting area in the Theatre Suite, the Anaesthetic Room and the Operating Theatre.

In order to monitor how children respond to meeting, what is likely to be for the majority, new situations we are intending to video children in all of these areas except the Operating Theatre.

For this we seek your permission

The video tapes will remain confidential to the research team and will only be used for the purposes of research. In any presentation or publication of the findings no individual child will be named or personal details divulged in any way.

We believe that by carefully monitoring children during their visit to hospital we can improve the services for both parents and children. By participating in this study you will contribute to what, I'm sure you will agree, is a most worthwhile activity.

If for any reasons you do not wish to be part of this study, please inform the nurse on duty in the Day Surgery Unit in advance of your child's appointment or on arrival at the Ward.

Should you wish for any further details of the study, please do not hesitate to contact any member of the research team on Southampton (0703) 777222 extension 3468 or 4265.

Thanking you in anticipation for your help in the study.

Yours faithfully

Alan Glasper
Nursing Studies Department

Figure 8 - 1  Without Parent Consent (low information)
(Obtained on the day of admission)
Dear Parent

We are currently investigating how the Paediatric Unit of Southampton General Hospital can provide the best possible service for children in hospital.

During your visit to the Day-Surgery Unit, your child will spend time in various areas of the Hospital: the Day Ward, the waiting area in the Theatre Suite, the Anaesthetic Room and the Operating Theatre.

In order to monitor how children respond to meeting, what is likely to be for the majority, new situations we are intending to video children in all of these areas except the Operating Theatre.

For this we seek your permission

You may accompany your child to the doors of the operating theatre at which point you must leave your child and return to the day ward. Your child will be transferred to the waiting area where a member of the theatre staff will provide play materials suitable for your child's age group. After a short while the anaesthetist will collect your child and together they will transfer to the anaesthetic room. The anaesthetic room is brightly decorated and the nurse will hold your child's hand whilst the anaesthetic is administered.

The video tapes will remain confidential to the research team and will only be used for the purposes of research. In any presentation or publication of the findings no individual child will be named or personal details divulged in any way.

We believe that by carefully monitoring children during their visit to hospital we can improve the services for both parents and children. By participating in this study you will contribute to what, I'm sure you will agree, is a most worthwhile activity.

If for any reasons you do not wish to be part of this study, please inform the nurse on duty in the Day Surgery Unit in advance of your child's appointment or on arrival at the Ward.

Should you wish for any further details of the study, please do not hesitate to contact any member of the research team on Southampton (0703) 777222 extension 3468 or 4265.

Thanking you in anticipation for your help in the study.

Yours faithfully

Alan Glasper
Nursing Studies Department

Figure 8 - 2  Without Parent Consent (high information)
(Obtained on the day of admission)
Dear Parent

We are currently investigating how the Paediatric Unit of Southampton General Hospital can provide the best possible service for children in hospital.

During your visit to the Day-Surgery Unit, your child will spend time in various areas of the Hospital: the Day Ward, the waiting area in the Theatre Suite, the Anaesthetic Room and the Operating Theatre.

In order to monitor how children respond to meeting, what is likely to be for them, new situations we are intending to video children in all of these areas except the Operating Theatre.

For this we seek your permission

Occasionally, it may be possible, should you wish, for you to accompany your child into the Anaesthetic Room and remain with them until they are asleep. If this were to be the case you would be filmed with your child.

The video tapes will remain confidential to the research team and will only be used for purposes of research. In any presentation or publication of the findings no individual child will be named or personal details divulged in any way.

We believe that by carefully monitoring children during their visit to hospital we can improve the services for both parents and children. By participating in this study you will contribute to what, I'm sure you will agree, is a most worthwhile activity.

If for any reason you do not wish to be part of this study, please inform the nurse on duty in the Day Surgery Unit in advance of your child's appointment or on arrival at the Ward.

Should you wish for any further details of the study, please do not hesitate to contact any member of the research team on Southampton (0703) 777222 extension 3468 or 4265.

Thanking you in anticipation for your help in the study.

Yours faithfully,

Alan Glasper,
Nursing Studies Department

Figure 8-3 With Parent Consent (low information)
(Obtained on the day of admission)
Dear Parent

We are currently investigating how the Paediatric Unit of Southampton General Hospital can provide the best possible service for children in hospital.

During your visit to the Day-Surgery Unit, your child will spend time in various areas of the Hospital: the Day ward, the waiting area in the Theatre Suite, the Anaesthetic Room and the Operating Theatre.

In order to monitor how children respond to meeting, what is likely to be for them, new situations we are intending to video children in all of these areas except the Operating Theatre.

For this we seek your permission

Occasionally, it may be possible, should you wish, for you to accompany your child into the Anaesthetic Room and remain with them until they are asleep. If this were to be the case you would be filmed with your child.

If you accompany your child to the Theatre Suite you would be able to hold their hand and continue to talk to them as the porters take the trolley from the Day Ward, along the corridors of the Hospital, down in the lift and to theatre reception. Here, you would be expected to put on a theatre jump suit which covers all of your own clothing and a theatre cap. You would then wait with your child until the anaesthetist comes to examine your child and to explain what will happen in the Anaesthetic Room. In the Anaesthetic Room, if your child is very young, you will be asked to sit your child on your knee whilst the anaesthetic is administered. For older children you will, most likely, be asked to continue talking quietly to your child in a relaxed manner and to occupy your child with toys which may be their own or provided by the hospital. When your child is asleep you will be escorted back to the Day Ward to await your child’s return.

The video tapes will remain confidential to the research team and will only be used for purposes of research. In any presentation or publication of the findings no individual child will be named or personal details divulged in any way.

We believe that by carefully monitoring children during their visit to hospital we can improve the services for both parents and children. By participating in this study you will contribute to what, I'm sure you will agree, is a most worthwhile activity.

If for any reason you do not wish to be part of this study, please inform the nurse on duty in the Day Surgery Unit in advance of your child's appointment or on arrival at the Ward.

Should you wish for any further details of the study, please do not hesitate to contact any member of the research team on Southampton (0703) 777222 extension 3468 or 4265.

Thanking you in anticipation for your help in the study.

Yours faithfully,

Alan Glasper
Nursing Studies Department

Figure 8-4 With Parent (high information)
(Obtained on the day of admission)
Filming

The filming of children undergoing anaesthesia is both time consuming and complex. After discussion with nursing and medical staff, it was decided to identify Tuesdays as a day when parents would not be invited to accompany their child to the anaesthetic room. In order to avoid contamination and confusion, it was necessary to allocate a regular period when all staff would appreciate that this was a time when parents would not be invited to accompany their children. A strategy to deal with parents who asked to go with their children on Tuesdays had to be developed. It was agreed in such cases to exclude them from the study completely. The selection of a Tuesday was on the whole arbitrary and a careful consideration of the operating lists showed no extra uncontrolled for variables to be considered i.e. children attending on Tuesdays had similar operations and similar profiles to that of children attending on other days of the week (Figures 8 - 5 and 8 - 6).

The design of the study involved filming in two discrete areas of the operating department:

1. The waiting area.
2. The anaesthetic room.

The researcher was able to obtain consent from parents at the beginning of each operating list i.e. the morning and afternoon list. Following consent, the researcher was able to relocate to the operating department and change into theatre garments. The video camera utilised for the study was a lightweight JVC VHS camcorder with a battery life sufficient for several hours filming. The battery life of the rechargeable cells proved unpredictable and after considerable trial and error several spare cells were kept on constant charge in the operating department itself. The design of the video camera was such that a separate long life battery always recorded the date and time of the filming on the magnetic tape of the VHS cassette. In addition, a pre-formulated protocol was developed to facilitate the accurate recording of film data (Figure 8 - 7). A total of 205 children were filmed during the study in the waiting room and anaesthetic room, but only 204 filmed sequences proved usable. The filming technique used by the researcher was deliberately unobtrusive. During the filming of the waiting room scenarios the policy adopted was to stand in the utility room doorway some distance from the child with theatre personnel or parent.
<table>
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<td>15</td>
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<td>Cystoscopy</td>
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**Figure 8 - 5**  Typical operating list (Tuesday)

**N.B.** To guarantee anonymity, all names and dates of birth are fictitious
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<td>Umbilical hernia repair</td>
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<td>Johnson, George</td>
<td>Bilateral inguinal hernia</td>
<td>M</td>
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<td>18/11/88</td>
</tr>
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</tr>
<tr>
<td>Wigley, Daniel</td>
<td>Left inguinal hernia</td>
<td>M</td>
<td>1</td>
<td>29/09/92</td>
</tr>
<tr>
<td>Parsonage, Richard</td>
<td>Peputioplasty</td>
<td>M</td>
<td>5</td>
<td>15/07/88</td>
</tr>
<tr>
<td>Currie, Hannah</td>
<td>Sigmoidoscopy</td>
<td>F</td>
<td>13</td>
<td>29/06/80</td>
</tr>
<tr>
<td>Eames, Ondreas</td>
<td>Division of tongue tie</td>
<td>M</td>
<td>2</td>
<td>15/06/91</td>
</tr>
<tr>
<td>Games, Richard</td>
<td>Excision of preauricular</td>
<td>M</td>
<td>0</td>
<td>29/09/93</td>
</tr>
<tr>
<td>Craig, James</td>
<td>Circumcision</td>
<td>M</td>
<td>6</td>
<td>05/12/87</td>
</tr>
<tr>
<td>Cox, Robert</td>
<td>Circumcision</td>
<td>M</td>
<td>7</td>
<td>15/01/87</td>
</tr>
<tr>
<td>Allen, Hannah</td>
<td>EUA cystoscopy</td>
<td>F</td>
<td>14</td>
<td>13/11/79</td>
</tr>
<tr>
<td>Killeen, Adam</td>
<td>Left hydrocele</td>
<td>M</td>
<td>2</td>
<td>23/01/92</td>
</tr>
</tbody>
</table>

**Figure 8-6** Typical operating list (Wednesday)

**N.B.** To guarantee anonymity, all names and dates of birth are fictitious
<table>
<thead>
<tr>
<th>NAME</th>
<th>PATIENT CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE OF OPERATION</td>
<td>TIME PATIENT SENT FOR</td>
</tr>
<tr>
<td>AGE (D.O.B.)</td>
<td>TIME PATIENT ARRIVED</td>
</tr>
<tr>
<td>ADDRESS</td>
<td>TIME OF ARRIVAL IN ANAESTHETIC ROOM</td>
</tr>
<tr>
<td>CONSENT</td>
<td>TIME OF ARRIVAL IN RECOVERY</td>
</tr>
<tr>
<td>SPIELBERGER</td>
<td>TIME OF DEPARTURE FROM RECOVERY</td>
</tr>
<tr>
<td>OPERATION</td>
<td>BLOOD PRESSURE</td>
</tr>
<tr>
<td>POSTAL QUESTIONNAIRE DATE SENT</td>
<td>PULSE</td>
</tr>
<tr>
<td>UNACCOMPANIED (0) [WITHOUT]</td>
<td>BLOOD TEST</td>
</tr>
<tr>
<td>ACCOMPANIED (1) [WITH]</td>
<td>PREVIOUS ANAESTHETIC HISTORY</td>
</tr>
<tr>
<td>FATHER (F)</td>
<td>TAPE NO</td>
</tr>
<tr>
<td>SURROGATE S</td>
<td>TAPE COUNTER NO</td>
</tr>
</tbody>
</table>

Figure 8-7  Pro-forma
Although denied professional apparatus, the researcher was able to focus the camera through the zoom lens facility on the child despite being some distance away. It was important to primarily film the child during the phases of filming given that the focus of the study was essentially related to the children and their experience of the visit to the operating department. This detail assumes great importance and at no time was the camera allowed to concentrate on either the anaesthetist or the parents during filming although their inclusion in some sequences was inevitable. (Figure 8 - 8).

The Cohort

The successfully filmed cohort of 204 children were randomly selected from the population of children entering the day ward for surgery. Children from ethnic minorities were not included within the study. No attempt was made to control for social class. 93 children were filmed, without their parents on Tuesdays over a period of several months. 111 children were filmed with their parents on other days of the week over the same time period. Parents who asked spontaneously to be present during their child’s anaesthesia induction were planned not to be included in the study although this situation did not arise with the experimental group. It was likewise planned to exclude cases where an invitation to be present was declined by a parent and this occurred on one occasion only.

With regard to the control group of unaccompanied children, it was interesting to note that a number of parents spontaneously asked to accompany their children. This accounts for the lesser number of children included in the final control group cohort. It was apparent that despite no mention of parental accompaniment by staff, news of such a facility appeared to spread by "word of mouth". This situation may have been exacerbated by the publication of a number of articles related to the subject in contemporary women’s magazines. It should be noted that the situation today within the John Atwell day unit is that the vast majority of children are accompanied to the anaesthetic room by a parent. This is in stark contrast to the situation prevailing at the commencement of the study where very few parents were allowed to accompany their children.
Figure 8 - 8   Layout of the operating department
All children were accompanied to the waiting area of the theatre by a day ward nurse and porter. On arrival at the vestibule of the theatre suite, the child was handed over to the waiting room nurse on the other side of the red line via a "sliding top trolley system". This system ensures that the "dirty" wheels of the trolley used to collect the child from the ward are not allowed to come into contact with the "clean" areas of the theatre. It is at this stage that accompanying mothers don protective green coveralls, overshoes and theatre head dress and cross the red line with the child or in the case of non-accompanying mothers say good-bye to the child and return to the ward with the nurse. Parents who did not accompany their child to the anaesthetic room, therefore left their child at the doors of theatre. This in itself was and remains controversial as it has been suggested that leaving a child at the door of the operating theatre causes upset in a child (Lees, Green, 1969). It should be noted that children now walk or drive to theatre (where appropriate) and that the role of parents in the anaesthetic room is fully discussed during the Saturday morning preadmission programme which is offered to all families the week before admission. All children were allowed to take a favourite toy or item of clothing/comforter to theatre with them.

**Progress Through The Theatre Suite**

Following entry to the waiting area of theatres, parents accompanying their children were allowed to sit and play until the arrival of the anaesthetist. The arrival of the anaesthetist signals the transfer of the child to the anaesthetic room a short distance away. This transfer facilitates a brief introductory period where the anaesthetist greets the child (and mother where appropriate) for the first time. The rapid pace of the day surgery list precludes a routine visit to the child/family by the anaesthetist, a subject which in itself generates strong emotions in interested parties. Irrespective of expressed opinions related to the desirability of pre-operative visits by anaesthetists the reality of practice in Southampton does not facilitate this. The only opportunity for the anaesthetist to introduce himself to the child is at the point at which he/she comes to transfer the child to the anaesthetic room.

The anaesthesia induction begins shortly after the child's arrival in the anaesthetic room and parents where present, are asked to hold their child's hand or in the case of younger children to sit them on their knee. All children within the cohort were prepared for a possible intravenous induction through the
use of EMLA cream, a topical local anaesthetic which was applied to the backs of their hands during the admission procedure. The children were unpremedicated as is the custom with the vast majority of day case admissions at Southampton. The parents were warned by the anaesthetist that at the point of surgical anaesthesia the child would feel very heavy. Parents were assured that this was entirely normal. Following either gaseous or intravenous induction, the parents were politely requested to leave and were escorted to the doors of the inner vestibule where their protective clothing was removed for laundering. Some residual controversy persists related to the exit of parents from the anaesthetic room to the theatre entrance.

Study Design - An Overview

Although the main facet of the study was focused on the level of upset perceived by judges of children undergoing anaesthesia with and without parents, a number of other variables were considered as integral to the debate.

In essence, the study consisted of the scored responses of judges to short clips of film (30 seconds duration) contained in a collection of video tapes. A total of 21 video tapes were produced each one containing up to 16 film clips of children. Each clip represents a 30 second period of time in the life of a child as she/he progresses through the theatre to the anaesthetic room for induction. Each child on a given tape is in a given age group and each tape contains clips of film recorded in a specific area of the theatre/anaesthetic room. Each tape has been viewed by 25 different judges, there being five different judges in each of five different judge type categories. Each judge was requested to enter a score against five adjectives describing the mood and degree of upset of the child appearing in the individual video film clip.

The areas of the theatre suite in which filming took place were the waiting room and anaesthetic room, producing after editing three distinct scenarios:

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>The waiting room - pre threat stage</td>
</tr>
<tr>
<td>1</td>
<td>The pre inductive period - threat stage</td>
</tr>
<tr>
<td>2</td>
<td>The inductive period - impact stage</td>
</tr>
</tbody>
</table>
The judge type categories consisted of:

<table>
<thead>
<tr>
<th>Judge type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Theatre nurses</td>
</tr>
<tr>
<td>2</td>
<td>Anaesthetists</td>
</tr>
<tr>
<td>3</td>
<td>R.S.C.N.</td>
</tr>
<tr>
<td>4</td>
<td>R.G.N.</td>
</tr>
<tr>
<td>5</td>
<td>Student Nurses</td>
</tr>
</tbody>
</table>

NB The decision regarding the choice of the final judge type categories was made after careful consideration. Although discussions relating to the use of a parent group proved stimulating, a decision not to include them was made after consultation with the hospital ethical committee. It was originally planned to include paediatricians as a judge group but constraints on time prohibited this.

The adjectives used to describe the child’s mood/level of upset were:

<table>
<thead>
<tr>
<th>Adjective</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Wary</td>
</tr>
<tr>
<td>2</td>
<td>Contented</td>
</tr>
<tr>
<td>3</td>
<td>Easy to handle</td>
</tr>
<tr>
<td>4</td>
<td>Agitated</td>
</tr>
<tr>
<td>5</td>
<td>Attentive</td>
</tr>
</tbody>
</table>

NB The final choice of adjectives was based on the results of the pilot study which demonstrated good discrimination of those chosen for the main study.

Each adjective was scored using a seven point analogue scale.

The assigned parameters of the study include:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0 = &lt; 2 years old</td>
</tr>
<tr>
<td></td>
<td>1 = 2 - 5 years old</td>
</tr>
<tr>
<td></td>
<td>2 = &gt; 5 years old</td>
</tr>
<tr>
<td>Gender</td>
<td>0 = Female</td>
</tr>
<tr>
<td></td>
<td>1 = Male</td>
</tr>
<tr>
<td>Anaesthetic</td>
<td>0 = Inhalation/gaseous induction</td>
</tr>
<tr>
<td></td>
<td>1 = Intravenous induction</td>
</tr>
</tbody>
</table>
The volume of generated data anticipated by the study entailed the creation of 21 video tapes. The 21 judgement tapes were created from the raw video sequences of the final randomly selected cases (N = 81) from the original filmed cohort of 205 day case children. (204 successful)

Profile of original filmed cohort

Of the original 205 children filmed, 204 yielded usable filmed sequences (1 case was spoiled due to technical difficulties/camera failure). The sample is summarised in Figure 8 - 9 with details of the experimental and control groups in Figure 8 - 10 and 8 - 11 respectively.

<table>
<thead>
<tr>
<th>Total Children =204</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total With Parent = 111</td>
</tr>
<tr>
<td>Total Without Parent = 93</td>
</tr>
<tr>
<td>Age &lt; 2 = 53</td>
</tr>
<tr>
<td>Age 2 - 5 = 85</td>
</tr>
<tr>
<td>Age &gt; 5 = 66</td>
</tr>
<tr>
<td>Female = 52</td>
</tr>
<tr>
<td>Male = 152</td>
</tr>
<tr>
<td>Gaseous induction = 60</td>
</tr>
<tr>
<td>Intravenous induction = 144</td>
</tr>
<tr>
<td>Low Information Provided = 142</td>
</tr>
<tr>
<td>High Information Provided = 62</td>
</tr>
</tbody>
</table>

Figure 8 - 9 Analysis of all children originally allocated to the study group
### With Parents

<table>
<thead>
<tr>
<th>Age</th>
<th>Female</th>
<th>Male</th>
<th>Female</th>
<th>Male</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &lt; 2 years</td>
<td>9</td>
<td>17</td>
<td>13</td>
<td>41</td>
<td>11</td>
<td>20</td>
</tr>
<tr>
<td>Age 2 - 5 years</td>
<td>26</td>
<td>54</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age &gt; 5 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>31</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Method</th>
<th>Lo</th>
<th>Hi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>I/V</td>
<td>1</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Method</th>
<th>Lo</th>
<th>Hi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>I/V</td>
<td>9</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Method</th>
<th>Lo</th>
<th>Hi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>7</td>
<td>34</td>
</tr>
<tr>
<td>I/V</td>
<td>0</td>
<td>11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Method</th>
<th>Lo</th>
<th>Hi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I/V</td>
<td>11</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Method</th>
<th>Lo</th>
<th>Hi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>2</td>
<td>34</td>
</tr>
<tr>
<td>I/V</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Method</th>
<th>Lo</th>
<th>Hi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I/V</td>
<td>7</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Method</th>
<th>Lo</th>
<th>Hi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>I/V</td>
<td>8</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Method</th>
<th>Lo</th>
<th>Hi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>I/V</td>
<td>25</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Method</th>
<th>Lo</th>
<th>Hi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>I/V</td>
<td>0</td>
<td>14</td>
</tr>
</tbody>
</table>

### With Parents = 111

- Age < 2 years = 26
- Age 2 - 5 years = 54
- Age > 5 years = 31

- Female = 33
- Male = 78

- Gaseous = 29
- Intravenous = 82
- Low Information = 83
- High Information = 28

**Figure 8 - 10 All Children Analysis (Children with parents)**
<table>
<thead>
<tr>
<th>Age Group</th>
<th>Without Parents</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &lt; 2 years</td>
<td>27</td>
<td>7</td>
</tr>
<tr>
<td>Age 2 - 5 years</td>
<td>31</td>
<td>3</td>
</tr>
<tr>
<td>Age &gt; 5 years</td>
<td>35</td>
<td>9</td>
</tr>
<tr>
<td>Female</td>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>Age &lt; 2 years</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td>Age 2 - 5 years</td>
<td>3</td>
<td>28</td>
</tr>
<tr>
<td>Age &gt; 5 years</td>
<td>9</td>
<td>26</td>
</tr>
<tr>
<td>Gas</td>
<td>I/V</td>
<td></td>
</tr>
<tr>
<td>Age &lt; 2 years</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Age 2 - 5 years</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Age &gt; 5 years</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>Female</td>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>Age &lt; 2 years</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Age 2 - 5 years</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Age &gt; 5 years</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Gas</td>
<td>I/V</td>
<td></td>
</tr>
<tr>
<td>Age &lt; 2 years</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Age 2 - 5 years</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>Age &gt; 5 years</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td>Female</td>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>Age &lt; 2 years</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Age 2 - 5 years</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td>Age &gt; 5 years</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Gas</td>
<td>I/V</td>
<td></td>
</tr>
<tr>
<td>Age &lt; 2 years</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Age 2 - 5 years</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Age &gt; 5 years</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Female</td>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>Age &lt; 2 years</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Age 2 - 5 years</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Age &gt; 5 years</td>
<td>14</td>
<td>14</td>
</tr>
</tbody>
</table>

Without Parents = 93
Age < 2 years = 27
Age 2 - 5 years = 31
Age > 5 years = 35

Female = 19
Male = 74
Gaseous = 31
Intravenous = 62
Low Information = 59
High Information = 34

Figure 8-11 All children analysis (Children without parents)
Randomised Selection of Final Study Group

The raw video filmed sequences were held on a number of hour long standard VHS video tapes. A log book containing a sheet record of every child included the tape number and the date and time duration (in minutes and seconds) of each case. It was, therefore, possible to locate each child within the study to a considerable degree of accuracy. The time element involved in searching tapes to find individual children is probably false economy and today it is possible to buy, at much lower cost, short length video tapes (e.g. 15 minutes duration). There is no doubt that one video tape per child greatly eases the burden of final editing and researchers considering replication of this type of study would be advised to seriously consider this option. In any event the restricted budget entailed a maximum utilisation of each video tape.

In order to address the additional variables of interest to the study i.e. age, gender, type of induction, type of information, it was necessary to randomly select cases from the main group of 204 children. Randomised computer generated numbers were used to choose cases under the auspices of the other variables and 81 children were eventually selected. This number was necessary to create the requisite number of judgement tapes. The final study group profiles are summarised in Figures 8 - 12, - 13 and - 14.
<table>
<thead>
<tr>
<th>Total With Parent = 41</th>
<th>Total Without Parent = 40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &lt; 2 = 30</td>
<td>Age 2 - 5 = 28</td>
</tr>
<tr>
<td>Age &gt; 5 = 23</td>
<td></td>
</tr>
<tr>
<td>Female = 25</td>
<td>Male = 56</td>
</tr>
<tr>
<td>Gaseous induction = 28</td>
<td>Intravenous induction = 53</td>
</tr>
<tr>
<td>Low Information Provided = 37</td>
<td>High Information Provided = 44</td>
</tr>
</tbody>
</table>

**Figures 8 - 12** Analysis of randomly selected children from the original cohort of 204
## With Parents

<table>
<thead>
<tr>
<th>Age &lt; 2 years</th>
<th>Age 2 - 5 years</th>
<th>Age &gt; 5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>13</td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gas</th>
<th>I/V</th>
<th>Gas</th>
<th>I/V</th>
<th>Gas</th>
<th>I/V</th>
<th>Gas</th>
<th>I/V</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lo</td>
<td>Hi</td>
<td>Lo</td>
<td>Hi</td>
<td>Lo</td>
<td>Hi</td>
<td>Lo</td>
<td>Hi</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age &lt; 2 years = 16</th>
<th>Age 2 - 5 years = 13</th>
<th>Age &gt; 5 years = 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female = 11</td>
<td>Male = 30</td>
<td></td>
</tr>
<tr>
<td>Gaseous = 14</td>
<td>Intravenous = 27</td>
<td>Low Information = 17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High Information = 24</td>
</tr>
</tbody>
</table>

### Without Parents = 41

**Figure 8 - 13** Analysis of randomly selected children with parents
### Without Parents

<table>
<thead>
<tr>
<th></th>
<th>Age &lt; 2 years</th>
<th>Age 2 - 5 years</th>
<th>Age &gt; 5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Female</strong></td>
<td>6</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td>8</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td><strong>Gas</strong></td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>I/V</strong></td>
<td>3</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td><strong>Lo</strong></td>
<td>1</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td><strong>Hi</strong></td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Figure 8-14** Analysis of randomly selected children without parents

Without Parents = 40

Age < 2 years = 14  
Age 2 - 5 years = 15  
Age > 5 years = 11

Female = 14  
Male = 26

Gaseous = 14  Intravenous = 26  Low Information = 20  High Information = 20
Planning the Profiles of the Judgement Tapes

The random selection of 81 children, 40 without and 41 with their parents allowed planning of the subsequent judgement tapes. The design of the main study originally called for the creation of separate video judgement tapes with each tape/set of tapes concentrating on particular variables. The pragmatism of this approach in effect facilitated a number of smaller studies within the study as a whole. In order to consider the other variables of interest to the study, it was necessary to produce 21 video judgement tapes. The number of tapes also gave consideration to the attention span of the judges i.e. tapes of excessive length might reduce the compliance of the judge and their ability to score video clips accurately. The creation of the tapes necessitated the random allocation of "clips" of children with and without parents in set sequences depending upon the other variables under consideration.

NB Although it was recognised that a powerful data analysis package such as that used for the study i.e. SPSS is sufficiently robust to read across data files, it was nevertheless thought prudent to structure the tapes in such a way that individual analysis was possible. In order to give structure to the study the video clips of the children were assembled as shown in Figure 8 - 15.
<table>
<thead>
<tr>
<th>Tape No</th>
<th>Colour code</th>
<th>Variables (All tapes matched for with and without parent and one other variable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dark blue</td>
<td>&lt;2 years old, waiting room, high vs low information</td>
</tr>
<tr>
<td>2</td>
<td>Light blue</td>
<td>&lt;2 years old, pre-induction, high vs low information</td>
</tr>
<tr>
<td>3</td>
<td>White</td>
<td>&lt;2 years old, post-induction, high vs low information</td>
</tr>
<tr>
<td>4</td>
<td>Dark blue</td>
<td>&lt;2 years old, waiting room, Intravenous vs gaseous induction</td>
</tr>
<tr>
<td>5</td>
<td>Light blue</td>
<td>&lt;2 years old, pre-induction, Intravenous vs gaseous induction</td>
</tr>
<tr>
<td>6</td>
<td>White</td>
<td>&lt;2 years old, post-induction, Intravenous vs gaseous induction</td>
</tr>
<tr>
<td>7</td>
<td>Dark blue</td>
<td>&lt;2 years old, waiting room, male vs female</td>
</tr>
<tr>
<td>8</td>
<td>Light blue</td>
<td>&lt;2 years old, pre-induction, male vs female</td>
</tr>
<tr>
<td>9</td>
<td>White</td>
<td>&lt;2 years old, post-induction, male vs female</td>
</tr>
<tr>
<td>10</td>
<td>Aquamarine</td>
<td>2 - 5 years old, waiting room, high vs low information</td>
</tr>
<tr>
<td>11</td>
<td>Pink</td>
<td>2 - 5 years old, pre-induction, high vs low information</td>
</tr>
<tr>
<td>12</td>
<td>Orange</td>
<td>2 - 5 years old, post-induction, high vs low information</td>
</tr>
<tr>
<td>13</td>
<td>Aquamarine</td>
<td>2 - 5 years old, waiting room, Intravenous vs gaseous induction</td>
</tr>
<tr>
<td>14</td>
<td>Pink</td>
<td>2 - 5 years old, pre-induction, Intravenous vs gaseous induction</td>
</tr>
<tr>
<td>15</td>
<td>Orange</td>
<td>2 - 5 years old, post-induction, Intravenous vs gaseous induction</td>
</tr>
<tr>
<td>16</td>
<td>Yellow</td>
<td>&gt;5 years old, waiting room, high vs low information</td>
</tr>
<tr>
<td>17</td>
<td>Green</td>
<td>&gt;5 years old, pre-induction, high vs low information</td>
</tr>
<tr>
<td>18</td>
<td>Gold</td>
<td>&gt;5 years old, post-induction, high vs low information</td>
</tr>
<tr>
<td>19</td>
<td>Yellow</td>
<td>&gt;5 years old, waiting room, male vs female</td>
</tr>
<tr>
<td>20</td>
<td>Green</td>
<td>&gt;5 years old, pre-induction, male vs female</td>
</tr>
<tr>
<td>21</td>
<td>Gold</td>
<td>&gt;5 years old, post-induction male vs female</td>
</tr>
</tbody>
</table>

**Figure 8-15** List of 21 video judgement tapes demonstrating the structure of the study.
Timing of the Video Filmed Induction Scenes

Once the children had been randomly selected "blind" from the original cohort of 204 successfully filmed sequences, all the tapes were viewed in their entirety to check accuracy and tape integrity. The main purpose, however, was to accurately time the process of induction from the commencement of anaesthesia to the point of surgical anaesthesia. This task was completed by two observers working together. The reliability between time keepers was not checked, the two observers using stop watches were in agreement for every child. The observers were not always able to recognise parents from the raw tapes and were given strict instructions to concentrate on the anaesthetic induction of each child only, thus reducing potential bias.

Production of the Judgement Booklets

The selection of the children and their relative clip positions on a number of judgement tapes required the production of corresponding judge scoring booklets. The judgement booklet consisted essentially of the formulation of individual child clip scoring sheets using the same 7 point scale utilised in the pilot study. At the top of each scoring sheet a set of numbers made up the legend for the particular child in question. An example of a typical judgement sheet is shown in Figure 8 - 16.
The Main Study - 151

Please insert video-clip No:__________

<--Not-at-all . . . . . . . . . . . . . . . . . . . . . . . . . Very-much-so-->

<table>
<thead>
<tr>
<th>Wary</th>
<th>Contented</th>
<th>Easy-to-handle</th>
<th>Agitated</th>
<th>Attentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>X X X X X X</td>
<td>X X X X X X</td>
<td>X X X X X</td>
<td>X X X X X X</td>
<td>X X X X X</td>
</tr>
</tbody>
</table>

Please turn over

Coding details:

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>01</td>
<td>Tape number</td>
</tr>
<tr>
<td>(b)</td>
<td>0</td>
<td>0 = &lt;2 yrs old, 1 = 2 - 5 yrs old, 2 = &gt;5 yrs old</td>
</tr>
<tr>
<td>(c)</td>
<td>0</td>
<td>0 = Waiting room, 1 = Pre-induction, 2 = Post induction</td>
</tr>
<tr>
<td>(d)</td>
<td>123</td>
<td>Study number</td>
</tr>
<tr>
<td>(e)</td>
<td>1</td>
<td>0 = Female, 1 = Male</td>
</tr>
<tr>
<td>(f)</td>
<td>1</td>
<td>0 = Without parent, 1 = With Parent</td>
</tr>
<tr>
<td>(g)</td>
<td>1</td>
<td>0 = Gaseous, 1 = Intravenous</td>
</tr>
<tr>
<td>(h)</td>
<td>0</td>
<td>0 = Low information, 1 = High information</td>
</tr>
<tr>
<td>(i)</td>
<td>01</td>
<td>Clip number</td>
</tr>
</tbody>
</table>

Underlined fields equal matched variables

Figure 8 - 16 Sample scoring sheet and coding details
The selection of the adjectives for the main study was based on the experiences of the pilot and those finally selected were:

1. Wary
2. Contented
3. Easy to handle
4. Agitated
5. Attentive

It should be noted that the adjective "attentive" and its use as a descriptor of children undergoing anaesthesia proved problematic with judges as it did not discriminate easily between individual children.

An instruction sheet (Figure 8 - 17) similar to that used in the pilot study formed the front sheet of each judgement booklet whose purpose was to augment the verbal explanations to judges given by the investigator. Master copies of each judgement tape booklet formed the template for the final video tape editing. The master judgement booklets were subsequently printed in volume and colour coded for each judgement tape.
PAEDIATRIC ANAESTHESIA INDUCTION

On the tapes you are about to see children are about to undergo or are undergoing anaesthesia. Each clip lasts 30 seconds and is preceded by a buzzer and a number. In the accompanying booklet there are lists of adjectives to be used with the video-clips.

The adjectives are as follows: wary; contented; easy-to-handle; agitated; attentive.

Using these adjectives we would like you to judge the mood and state of the child in each video-clip. For each adjective there is a seven point scale.

When you judge the video-clip in relation to "wary" if you consider the child to be "not-at-all" wary then you should circle the first "X" on the left.

<---Not-at-all .................. Very-much-so--->
Wary

X X X X X X X X

If you judge the child to be "very-much-so" wary you should circle the last "X" on the right.

<---Not-at-all .................. Very-much-so--->
Wary

X X X X X X X X

If you judge the child's mood to be in between these extremes you should circle an "X" accordingly.

<---Not-at-all .................. Very-much-so--->
Wary

X X X X X X X X

To help you use these scales across their full range, before beginning your observations, you will be shown two video clips which illustrate the spectrum of mood states. The first clip shows a child who appears to be only mildly affected during the procedure. The second clip, however, shows a child who appears to be profoundly affected.

Figure 8 - 17 (Part 1) Instruction sheet
There are 12/16 video clips. Judging the tapes should take no longer than 20 minutes.

Permission to video the anaesthesia induction and to show the edited tapes to judges for the purpose of the research was obtained from all persons present (or their parents) in the anaesthetic room. However, we would ask you to respect the confidentiality of this material and not to discuss the tapes with persons not involved with the project.

Also, your judgements will remain confidential to the researchers and no individual judge will be identified in any published report of the research.

However, we would ask you to complete the following before viewing the tapes.

Job title: Gender: Age:

Length of experience in the above post:

Experience in anaesthetic induction procedures: (For example: period of time working in theatre; preparation of children for surgery; etc.)

Any questions?

Thank you for agreeing to take part in the project.

Figure 8 - 17 (Part 2) - Instruction sheet
The decision to colour code was made on purely practical grounds given the high volume of completed booklets that were necessary for the successful completion of the main study. The 21 judgement tapes were designed to be seen by the five groups of judges in groups of five i.e.:

- Judge type 1 = Theatre Nurses X 5
- Judge type 2 = Anaesthetists X 5
- Judge type 3 = R.S.C.N. X 5
- Judge type 4 = R.G.N. X 5
- Judge type 5 = Student Nurses X 5

(= 25 judges per tape)

The total number of judges used in the study was therefore 25 x 21 = 525. The volume of judgement booklets produced, therefore, necessitated colour coding and a system of storage which was both easily accessible and comprehensible at a glance. The part time status of the investigator and the time element of this component (two years to gather the necessary number of judges) entailed a simple solution to this potential problem of data collection complicity. Four wide shelves each eight feet long were affixed to the wall of the investigators office. The 21 X 25 packs of booklets (plus spares) were placed on the lower two shelves in numerical order, each pack with a corresponding adhesive number secured to the shelf for ease of identification. This simple method of storing the judgement booklets by colour and number gave structure to the whole process. Completed booklets in batches of five by five (five judges in each of the five judge groups) secured with elastic bands were subsequently stored along the top shelves. A wall mounted master plan of the data collection showing the number of tapes and the total number of individual judges necessary for the study completed the data collection strategy.
Editing the Judgement Tapes

Having randomly selected the children to be included in the study and planned the structure of each tape, the next step was to produce the tapes themselves. Video editing simply involves selective copying of material onto another video tape. However, the accuracy of the study demanded stringent reliability of video editing and, therefore, it was necessary to use a semi-professional editing suite. In order to achieve this level of accuracy where, for example, each tape showed children undergoing anaesthesia at exactly the same time the investigator had to produce judgement tapes first onto U-matic tape and then onto domestic VHS. It must be emphasised that the quality of the picture deteriorates with each copy and for this reason judgement studies involving video tape analysis should resort to professional equipment where possible.

Good quality picture reproduction is desirable and commensurate with a judgement study of this magnitude. Fortunately, the original video tapes of the children were of good quality and this can be attributed to the high level of lighting within the theatres, the efficiency of modern camcorders and the growing experience of the investigator. In retrospect the investigator allowed tape costs to influence the study and as a consequence each tape contained the filmed sequences of many children.

The selection of material from numerous tapes for editing purposes is both time consuming and expensive. Ideally, one short video tape per child should have been used and this would have greatly eased the complexity of the editing. The study utilised 81 children randomly selected from an original cohort of 204 successfully filmed children. In addition, only a small amount of material was used from each filmed child sequence. An approximate 10:1 cutting ratio was used i.e. only 90 seconds of filmed material per child was selected. Decisions related to the construction of the final judgement tapes had to be made before entering the editing suite. These decisions were based on the pilot study experience of selecting 30 second duration clips of film just prior and post the commencement of anaesthesia induction.

For the main study, clips of film of 30 seconds duration were deemed appropriate and of sufficient length to facilitate judging. The original pilot study had utilised 30 second clips of film with scoring times of 30 seconds. This strategy produced a judgement tape which was overlong. The investigator was
conscious of the need to have tapes of short length, necessary to avoid the judges losing concentration and the scoring time was reduced to 20 seconds. During the planning stage, considerable thought was given to describing which aspect of the total child behaviour to concentrate on. The raw video tapes concentrated on the child's journey from the waiting room of the theatre though to the anaesthetic room and on until the point of surgical anaesthesia.

In selecting clips of 30 seconds only there is a danger of omitting potentially valuable sources of behaviour manifestations. Having randomly selected the 85 children from the total sample, a decision was necessary to decide the various occasions of observations and the types of behaviour to be presented to the judges for evaluative scoring. The price to be paid for a systematic objective sampling procedure is the possibility that particular behaviour sequences will be interrupted by the beginning or end of the time sample selected (Rosenthal, 1987).

**Stimulus Selection and Presentation**

In addition to concentrating filming on the child in question, the practice of dressing the parents in theatre green jump-suits helped camouflage any obvious "parent identity". The behaviour sampling followed the pattern of the pilot study and the following stimuli for presentation were identified to present to judges in the final judgement tapes as shown in Figure 8 - 18.
Figure 8-18 Behaviour sampling phases
Insufficient funds prevented a detailed consideration of modality sampling, but it is worthy of mention that judgement studies of great sophistication are possible where only certain parts of the film frame can be used e.g. face only or the sound track removed or the sound track altered in some way i.e. content filtered or speech played backwards.

Film Clip Length

Although Rosenthal (1987) states that considerable non verbal information can be communicated in only 2 seconds of film clip a decision to use 30 second clip lengths was taken to minimise attention span problems. The dependent variable to be measured in each stimulus presentation was the judges responses as indicated on the score sheets. The ability of the judges to decode the child's behaviour through a number of dimensions was the basis of the study. Following each film clip, a similar amount of tape time i.e. 20 seconds was presented using blacked tape. The period of black time was designed to allow for scoring. A buzzer and spoken number announced the commencement of the next clip. This was necessary to alert the judges to complete scoring and prepare for the next video clip stimulus.

The Simple Guide to Video Editing

The editing process is very time consuming and everything that can be done from an organisational point of view should be done to minimise the time spent in the editing suite.

1. Use "blacked" tapes for editing recording.

2. Sort and organise original material.

3. Ensure accurate real time recording times for tape logging.

4. Establish precise start and finish times.

5. Use the search dial on the edit controller to find the appropriate material on the source tape.

6. Establish precise edit start time on the recording machine.
7. Perform the edit automatically using the control panel.

8. Check the edit and repeat steps as necessary to produce each judgement tape.

9. Transfer final judgement tapes to VHS format as necessary.

The importance of using "real time logs" for structuring the original raw data tapes cannot be over emphasised and is the only effective way of finding material on a "multi-child" tape. The wisdom of using single use tapes covering the journey of individual children has already been emphasised. The time element involved in finding individual child scenarios from multi-use tapes makes this a viable planning decision from the outset.

Profile of Video Clips Generated by the 81 Randomly Selected Children

The 81 selected children generated a total of 324 video clips. Where necessary some "children" appear as clips on up to 3 judgement tapes. This was necessary in the overall design of the study into individual tapes (n=21) where differing variables i.e. gaseous and intravenous induction were considered. It must be highlighted that although some children appear more than once throughout the 21 video tapes, as far as the judges were concerned, they judged individual children only i.e. differing groups of judges observed different tapes. In design terms, the 81 children were actually viewed as 324 separate children and judged by 525 judges (21 video tapes X 25 judges (5 judge groups X 5 for each tape).

The analysis of all the edited video clips is shown in Figure 8 - 19. Figure 8 -20 shows the video clip analysis of children with parents and Figure 8 - 21 without parents.
<table>
<thead>
<tr>
<th>Description</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total With Parent = 162</td>
<td></td>
</tr>
<tr>
<td>Total Without Parent = 162</td>
<td></td>
</tr>
<tr>
<td>Age &lt; 2 = 132</td>
<td></td>
</tr>
<tr>
<td>Age 2 - 5 = 96</td>
<td></td>
</tr>
<tr>
<td>Age &gt; 5 = 96</td>
<td></td>
</tr>
<tr>
<td>Waiting Room = 108</td>
<td></td>
</tr>
<tr>
<td>Pre-induction = 108</td>
<td></td>
</tr>
<tr>
<td>Post-induction = 108</td>
<td></td>
</tr>
<tr>
<td>Female = 99</td>
<td></td>
</tr>
<tr>
<td>Male = 225</td>
<td></td>
</tr>
<tr>
<td>Gaseous induction = 102</td>
<td></td>
</tr>
<tr>
<td>Intravenous induction = 222</td>
<td></td>
</tr>
<tr>
<td>Low Information Provided = 193</td>
<td></td>
</tr>
<tr>
<td>High Information Provided = 131</td>
<td></td>
</tr>
</tbody>
</table>

Figure 8-19 Analysis of all 324 video clips generated for the 81 children across 21 judgement tapes
### Total With Parent = 162

<table>
<thead>
<tr>
<th>Age</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 2</td>
<td>66</td>
</tr>
<tr>
<td>2 - 5</td>
<td>48</td>
</tr>
<tr>
<td>&gt; 5</td>
<td>48</td>
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</table>

<table>
<thead>
<tr>
<th>Location</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waiting Room</td>
<td>54</td>
</tr>
<tr>
<td>Pre-induction</td>
<td>54</td>
</tr>
<tr>
<td>Post-induction</td>
<td>54</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>51</td>
</tr>
<tr>
<td>Male</td>
<td>111</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Induction Method</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaseous induction</td>
<td>51</td>
</tr>
<tr>
<td>Intravenous induction</td>
<td>111</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>105</td>
</tr>
<tr>
<td>High</td>
<td>57</td>
</tr>
</tbody>
</table>

**Figure 8-20** Video clips analysis (children with parents)
The Main Study - 163

<table>
<thead>
<tr>
<th>Total Without Parent = 162</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &lt; 2 = 66</td>
</tr>
<tr>
<td>Age 2 - 5 = 48</td>
</tr>
<tr>
<td>Age &gt; 5 = 48</td>
</tr>
<tr>
<td>Waiting Room = 54</td>
</tr>
<tr>
<td>Pre-induction = 54</td>
</tr>
<tr>
<td>Post-induction = 54</td>
</tr>
<tr>
<td>Female = 48</td>
</tr>
<tr>
<td>Male = 114</td>
</tr>
<tr>
<td>Gaseous induction = 51</td>
</tr>
<tr>
<td>Intravenous induction = 111</td>
</tr>
<tr>
<td>Low Information Provided = 88</td>
</tr>
<tr>
<td>High Information Provided = 74</td>
</tr>
</tbody>
</table>

Figure 8-21 Video clips analysis (children with parents)
Figures 8 - 22, - 23 and - 24 show the analysis of children by age group without parents across the whole of the 21 video tapes and Figures 8 - 25, - 26 and - 27 show the analysis of children by age group with their parents across the whole of the 21 video tapes.

NB The video clips in Figures 24 and 27 (i.e. children > 5 years of age) were able to be matched for each variable.
### The Main Study - 165

<table>
<thead>
<tr>
<th>Age &lt; 2 years</th>
<th>66</th>
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</table>

<table>
<thead>
<tr>
<th>Waiting Room</th>
<th>Pre-induction</th>
<th>Post-induction</th>
</tr>
</thead>
<tbody>
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<td>22</td>
<td>22</td>
<td>22</td>
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</table>

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
<th>Female</th>
<th>Male</th>
<th>Female</th>
<th>Male</th>
</tr>
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<td>9</td>
<td>13</td>
<td>9</td>
<td>13</td>
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<td>13</td>
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<table>
<thead>
<tr>
<th>Gas</th>
<th>I/V</th>
<th>Gas</th>
<th>I/V</th>
<th>Gas</th>
<th>I/V</th>
<th>Gas</th>
<th>I/V</th>
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<tr>
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<td>7</td>
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</tbody>
</table>

| Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi  | Lo  | Hi |...
### Age 2 - 5 years

<table>
<thead>
<tr>
<th></th>
<th>Waiting Room</th>
<th>Pre-induction</th>
<th>Post-induction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Female</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Gas</th>
<th>I/V</th>
<th>Gas</th>
<th>I/V</th>
<th>Gas</th>
<th>I/V</th>
<th>Gas</th>
<th>I/V</th>
<th>Gas</th>
<th>I/V</th>
<th>Gas</th>
<th>I/V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>11</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>11</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Lo</td>
<td>Hi</td>
<td>Lo</td>
<td>Hi</td>
<td>Lo</td>
<td>Hi</td>
<td>Lo</td>
<td>Hi</td>
<td>Lo</td>
<td>Hi</td>
<td>Lo</td>
<td>Hi</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>7</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

**Waiting Room** = 16  **Pre-induction** = 16  **Post-induction** = 16

**Female** = 6  **Male** = 45

**Gaseous** = 12  **Intravenous** = 36  **Low Information** = 30  **High Information** = 18

**Figure 8-23** Video Clip Analysis (Children Without Parents)
### Age > 5 years

<table>
<thead>
<tr>
<th></th>
<th>48</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waiting Room</td>
<td>16</td>
</tr>
<tr>
<td>Pre-induction</td>
<td>16</td>
</tr>
<tr>
<td>Post-induction</td>
<td>16</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Gas</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>IV</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Gas</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>IV</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Gas</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>IV</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Gas</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>IV</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Gas</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>IV</strong></td>
<td>0</td>
</tr>
</tbody>
</table>

**Waiting Room**
- Female: 16
- Male: 10

**Pre-induction**
- Female: 16
- Male: 10

**Post-induction**
- Female: 16
- Male: 10

**Figure 8-24** Video Clip Analysis (Children Without Parents)

- Waiting Room = 16
- Pre-induction = 16
- Post-induction = 16
- Female = 18
- Male = 30
- Gas = 0
- Intravenous = 48
- Low Information = 18
- High Information = 30
<table>
<thead>
<tr>
<th>Age &lt; 2 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>66</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Waiting Room</th>
<th>Pre-induction</th>
<th>Post-induction</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>22</td>
<td>22</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waiting Room</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Pre-induction</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Post-induction</td>
<td>8</td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Gas</th>
<th>I/V</th>
<th>Gas</th>
<th>I/V</th>
<th>Gas</th>
<th>I/V</th>
<th>Gas</th>
<th>I/V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waiting Room</td>
<td>7</td>
<td>0</td>
<td>5</td>
<td>10</td>
<td>7</td>
<td>1</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Pre-induction</td>
<td>7</td>
<td>1</td>
<td>5</td>
<td>9</td>
<td>7</td>
<td>1</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Post-induction</td>
<td>1</td>
<td>5</td>
<td>9</td>
<td>9</td>
<td>1</td>
<td>5</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Lo</th>
<th>Hi</th>
<th>Lo</th>
<th>Hi</th>
<th>Lo</th>
<th>Hi</th>
<th>Lo</th>
<th>Hi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waiting Room</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-induction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-induction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

|       | 6   | 1   | 0   | 5   | 0   | 7   | 3   | 6   | 1   | 1   | 0   | 5   | 0   | 6   | 3   |

**Age <2 =66**

- Waiting Room = 22
- Pre-induction = 22
- Post-induction = 22

- Female = 23
- Male = 43

- Gaseous = 36
- Intravenous = 30
- Low Information = 54
- High Information = 12

**Figure 8 - 25 Video Clip Analysis (Children With Parents)**
<table>
<thead>
<tr>
<th>Age 2 - 5 years</th>
<th>48</th>
<th>Waiting Room</th>
<th>Pre-induction</th>
<th>Post-induction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Female 16</td>
<td>Male 14</td>
<td>Female 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female 2</td>
<td>Male 14</td>
<td>Female 2</td>
</tr>
<tr>
<td>Gas</td>
<td>IV</td>
<td>Gas</td>
<td>IV</td>
<td>Gas</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>5</td>
<td>9</td>
<td>0</td>
</tr>
</tbody>
</table>

Lo | Hi | Lo | Hi | Lo | Hi | Lo | Hi | Lo | Hi | Lo | Hi |
0  | 1  | 1  | 5  | 0  | 5  | 4  | 0  | 1  | 1  | 5  | 0  | 5  |

Gaseous = 15  Intravenous = 33  Low Information = 33  High Information = 15

Figure 8 - 26 Video Clip Analysis (Children With Parents)
### Age > 5 years

<table>
<thead>
<tr>
<th></th>
<th>Waiting Room</th>
<th>Pre-induction</th>
<th>Post-induction</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>16</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>6</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Male</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Gaseous</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Intravenous</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Low Information</td>
<td>4</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>High Information</td>
<td>6</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

**Figure 8-27** Video clip analysis (children with parents)
The Judges

The 21 video tapes presenting primarily the independent variable of children accompanied by a parent or unaccompanied together with the other variables i.e. age, gender, type of induction, area and degree of information given to parents were shown to panels of judges for evaluation using the prepared scoring booklets. Judges in each category were recruited from across the United Kingdom. Figure 8 - 28 shows the geographical distribution of the judges utilised in the study.
Figure 8 - 28 Distribution of judges
A deliberate policy of utilising judges from across the UK was chosen to facilitate maximum evaluative judgements from each judge type category.

Method

A similar method to that of the pilot study was used. The investigator initially contacted a representative of each judge type in each location and after explaining the project to that person asked for the primary purpose of the study to remain confidential. The reason put forward to the judges on each occasion to explain the study concentrated on the evaluation of children as they travelled through theatre. The investigator continued with the explanation that the study was designed to concentrate on children's reactions to hospital and surgery. All judges were given instructions to concentrate on the child only and to ignore other people e.g. anaesthetists in the film clips. The contact representative for each group did not participate in the study.

After each batch of judges had completed their scoring a full debrief was given. This generated much heated discussion among some groups. Few, if any, judges were aware of the primary aim of the study at the point of debrief. On most occasions screenings of judgement tapes were to groups of single judge types. It proved almost impossible to co-ordinate groups of differing judges and the whole process was time consuming. Especially difficult was the problem of recruiting sufficient anaesthetists to participate in the study. The number of anaesthetists who deliver anaesthetics to children on a regular basis is quite small and it was, therefore, only possible to obtain sufficient anaesthetists by travelling the length and breadth of the UK. On most occasions this entailed showing tapes in the theatres themselves and much effort had to be expended in co-ordinating the delivery of the video equipment to the right place at the right time. The anaesthetists and theatre nurses could usually only see tapes during coffee and lunch breaks and this accounts for the unusually long data collection period.

After each data collection visit the wall mounted data collection chart was adjusted and completed packs of judgement booklets moved up to the top shelves for storage. The judges had few problems in following the method of scoring but most required longer initially than the 20 seconds of black tape to score each individual clip. The investigator was able to be proactive in these situations and utilise the freeze frame facility of the video play back machines to
lengthen the judging period. After the first one or two clips, the judges were normally able to complete the task at hand within the given time period. Numerous queries related to the use of the adjective "attentive" caused the investigator to make a decision not to use its judgements in the final analysis of the data. The adjective "attentive" did not discriminate in that all children were perceived to be attentive at the point at which an anaesthetic was perpetrated upon them.

Data Analysis

The completed packs of judgement booklets were divided into tape number and judge type. A spreadsheet was designed utilising the software package Lotus 1-2-3 Rel. 2.2. One spreadsheet was allocated for each video tape. The data area of each spreadsheet contained up to 80 rows by 48 columns. The 80 rows (where 16 clips were used on a judgement tape) consisted of 5 groups of 16. Each entry in a block of 16 represents a given child on the judgement tape with each of the 5 blocks allocated to a given judge type. (i.e. block 1, judge type 1 - theatre nurses, block 2, judge type 2 - anaesthetists etc.).

The first 2 columns record the child/study number and clip number. These repeat every 16 rows (as appropriate per tape) to facilitate the differing judge groups. The next five columns record the parameters of each child clip i.e. age group, gender, high information/low information, gaseous/intravenous induction, with or without parent. Each spreadsheet mirrors the tapes in that each concentrates on a given geographical area e.g. waiting room. The next column records the judge type group and the next 40 columns i.e. 9 to 48 are grouped into 5 blocks of 8 columns. Each block of 5 X 8 columns records the results for a given judge within a judge type. The first 3 columns record the details of the judge i.e. gender, age and length of experience. The last five columns record the score given by that judge for each of the five judgement adjectives. This is summarised in Figure 8 - 29.
Figure 8-29 Part of example spreadsheet
Each of the 21 spread sheets therefore contains the results of 25 judges within a given judge type for each of the up to 16 video clips per tape. There are, therefore, 5 scores per judge type per clip generating a total of 2000 data points per tape in addition to the data appertaining to the child and judge (i.e. 16 clips X 5 adjective judgements X 25 individual judges = 2000). A number of checks were performed on the entered data to ensure its accuracy and sequence correctness. The checks were:

1. Checks data being entered is for the spreadsheet that has been loaded.

2. Checks judge type is between 1 and 5.

3. Checks judge number is between 1 and 5.

4. Checks judge gender is Male or Female.

5. Checks clip numbers are in sequence i.e. 2 follows 1, 3 follows 2 etc.).

6. Checks adjective score is between 1 and 7 (as per scoring grid) i.e.:

<table>
<thead>
<tr>
<th></th>
<th>not at all</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>very much so</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wary</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Contented</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Easy to handle</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Agitated</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Attentive</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

NB The scoring grid was designed in such a way that scores for wary, and agitated ranged from 7 (not at all) to 1 (very much so). Scores for contented, easy to handle and attentive ranged conversely from 1 (not at all) to 7 (very much so).
The completed data sets were analysed using the statistical package SPSS/PC, the results of which are discussed in Chapter 9.
The analysis of the base data was undertaken with the utilisation of the statistical software package SPSS PC. Non parametric tests are necessary to analyse data that consists of rankings. The rankings utilised in this investigation where judges were asked to rate children against certain adjectives on a 1-7 scale assumes that no quantity measure has been made. It was, therefore, inappropriate to use parametric techniques for data that was categoric in nature.

In this investigation, judges simply allocated an arbitrary score of degree of upset from the analogue scale provided to children seen undergoing anaesthesia on a video tape. The primary objective of this study was to ascertain differences, if any, between the non-parametric judgmental responses to children undergoing anaesthesia without their parents presence and the judgmental responses to children undergoing anaesthesia in the presence of parents. In the absence of a parametric measurement able to score the degree of upset between the two groups it was necessary to adopt a statistical test of analysis that deals with category rankings. One such technique is the Mann-Whitney U test (Meddis, 1984) which allows researchers to compare orders of ranks generated by the data with that of rank orders where a distribution of scores is equal across two populations. This would assume that in the case of children undergoing anaesthesia that the ranking of degree of upset scores would be no different in groups accompanied or unaccompanied by parents.

The utilisation of rank positions and non parametric techniques entails test result differences that have to be much bigger in size to be accepted as significant. The Mann-Whitney U test is, therefore, used to evaluate the difference between population distributions. The data analysis presented within this text is primarily shown as a series of histograms in which the sum of the number of judgements of children with and without parents is expressed as a percentage of the total number of judgements on a 1-7 scale. This is achieved by allocating a mean corporate score for each judge to each child video clip i.e. the corporate score for each judge is the mean of the four adjective scores for each child video clip. The Mann Whitney U test allows a comparison of the ranked actual judgmental scores with that expected were there no differences between the groups of children. Given that the samples of children used in the experimental and control groups were randomly selected from children admitted to the day unit in
addition to being randomly selected from the raw video tapes, it can be inferred that any significant differences detailed by Mann Whitney between the two groups is caused by parental presence.

Results

A full and detailed profile of the results appear in the Appendices.

Discussion of Results

The table shown in Figure 9 - 1 summarises the profile of the differing judge type categories. Judges were recruited to the study from across the UK and had no known prior knowledge of the investigation. Of interest is the breakdown of the anaesthetist profiles demonstrating a much higher percentage of predominantly males within the cohort. Although to be expected in an essentially male dominated profession, the number of female anaesthetists at 23% shows that it is a profession in transition. It is also of interest that the female anaesthetists were on average older than their male counterparts. This can be explained in considering career breaks etc.

In contrast the cohorts of nurses are predominately female and younger when compared to the anaesthetists. The length of experience related to anaesthesia induction is obviously important and assumptions can be made as to the accuracy of the perceptions of individual judge groups when faced with scenes of children undergoing anaesthesia. The primary investigation took the form of a judgement study and such comparisons of judge groups are fully considered in the analysis of the data throughout the narrative. Given that the majority of nurses register at 21 years of age, the mean age of the theatre nurses, children's nurses and general nurses at over 30 years of age is indicative of the substantive experience of these nurses.

Although the anaesthetic induction experience of the judge groups is varied, all apart from the student nurses have some degree of familiarity with the induction protocol. The groups with the longest periods of participation in the procedure are the anaesthetists and theatre nurses. Clearly their perceptions of the children undergoing anaesthesia are crucial to the debate. The well publicised reticence of some members of these groups to contemplate parental presence adds a further dimension to the study.
### Discussion of Results

**Figure 9 - 1** Profile of Judges

<table>
<thead>
<tr>
<th>Judge Type</th>
<th>Gender</th>
<th>Number</th>
<th>Average Age (Years)</th>
<th>Average Job Experience (Years)</th>
<th>Average Induction Experience (Years)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>All</td>
<td>525</td>
<td>30.7</td>
<td>5.7</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>417</td>
<td>29.3</td>
<td>6.0</td>
<td>2.3</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>107</td>
<td>38.4</td>
<td>8.3</td>
<td>7.8</td>
</tr>
<tr>
<td>Theatre Nurses</td>
<td>All</td>
<td>105</td>
<td>30.4</td>
<td>5.2</td>
<td>4.9</td>
</tr>
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<td></td>
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<td>94</td>
<td>30.0</td>
<td>5.2</td>
<td>4.9</td>
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<tr>
<td></td>
<td>Male</td>
<td>11</td>
<td>33.9</td>
<td>5.7</td>
<td>5.4</td>
</tr>
<tr>
<td>Anaesthetists</td>
<td>All</td>
<td>105</td>
<td>39.5</td>
<td>8.5</td>
<td>8.7</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>24</td>
<td>45.5</td>
<td>7.5</td>
<td>7.4</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>80</td>
<td>37.7</td>
<td>8.9</td>
<td>9.1</td>
</tr>
<tr>
<td>R.S.C.N.</td>
<td>All</td>
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<td>32.5</td>
<td>7.8</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
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<td>100</td>
<td>32.7</td>
<td>7.8</td>
<td>2.6</td>
</tr>
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<td>5</td>
<td>29.4</td>
<td>3.7</td>
<td>3.0</td>
</tr>
<tr>
<td>R.G.N.</td>
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<td>30.6</td>
<td>5.7</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>96</td>
<td>30.1</td>
<td>5.2</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>9</td>
<td>36.0</td>
<td>10.6</td>
<td>1.3</td>
</tr>
<tr>
<td>Student Nurses</td>
<td>All</td>
<td>105</td>
<td>21.0</td>
<td>1.5</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>103</td>
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(** Inclusive of career breaks)

Judgmental responses

**Figure 9 - 2** examines the detailed responses of the theatre nurses. The base data demonstrates a considerable difference in both number and percentage.
Discussion of Results - 181

total judgements between the control unaccompanied group of children and the experimental accompanied group on the 1-7 adjective scoring scale. The Mann-Whitney u test demonstrates a probability of <0.001 and shows a positive bias towards the decreased perceived upset of the accompanied group. It must be

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**Figure 9-2** Theatre nurse judgements

stressed that all children used in the investigation were randomly selected from the original cohort of 204 filmed children. The level of probability demonstrating
statistical significance is interesting and to a degree unexpected with this judge group. The quoted procedural orientation of this group of professional nurses would suggest a mitigation against parental accompaniment. The blind nature of the study demonstrates and reinforces the perceptual accuracy of the theatre nurses and the judgements of the other participant groups.

At the commencement of the study it was the tenacity of some theatre nurses to prohibit parental accompaniment that almost prevented the pilot study from taking place. This in part was exacerbated by a small number of anecdotal tales relating to parental misdemeanours whilst in the anaesthetic room. Such denigratory reports ranging from fainting to active interference in the procedure only served to reinforce the negative stereotyped image of the parent in the anaesthetic room.

The collation of the judgements of the 105 theatre nurses with paediatric experience nation-wide, lends support to the inaccuracy of these negative images of parental accompaniment. It is worth considering that nurses in general have historically been opposed to more relaxed practices for parents with children in hospital (Eldar, 1984). Some have been opposed to the emancipation of parents because they perceive the parent as a potential critic. This is undoubtedly true of parents in the anaesthetic room where the spectre of a critic must be an anathema to all who work there. The increased levels of litigation in the health service could lead to a situation where any criticism by a parent to a health care professional causes them to be viewed as a potential vexatious litigant. Visitors to the anaesthetic room and theatres generally, may cause stress for the workforce because the work environment is rarely designed for visitors and the complex rules of theatre etiquette take time to learn and fully appreciate. Parents can find the theatre suite both strange and complex and may break or disregard hospital rules out of sheer ignorance. For this reason parents have a right to expect guidance if they are to continue to have a role with their children in strange environments. In such circumstances, preadmission education assumes greater importance and this stance is featured prominently throughout the text and the appendices. This notwithstanding, the theatre nurses ability to discriminate between accompanied and unaccompanied groups of children is of statistical significance.

Figure 9-3 details the responses of the 105 anaesthetists who participated in the investigation all of whom anaesthetised children on a regular basis. The
number of responses in the higher banding indicates a positive bias towards the accompanied group of children with 25% of judgements allocated to children without their parents compared to 33% of judgements allocated to children with their parents. The histogram demonstrates significantly more perceived turbulent children in the unaccompanied group. It is this group of judges for whom this investigation has most relevance. The anaesthetist is the professional who has the final say as to whether a parent gains access to an anaesthetic room or not. They are the gate keepers and they have considerable concerns related to parental roles. Bowie (1993) reports an alarming incidence of a distressed relative removing an anaesthetised child from the operating
department who fortunately made an uneventful recovery. The case illustrates that parental presence may not always be the best solution for dealing with an anxious child. Carter (1985) reminds us that the first chair of anaesthesia was created by Lord Nuffield (who reportedly had a lifetime of nightmares attributable to a traumatic gaseous mask induction during childhood) so that research would make anaesthetics less frightening for the patient. In a study conducted by Roman, Baker and Reilly (1993) the attitudes of anaesthetists of differing grades in a variety of units throughout England and Wales was investigated by the use of a postal questionnaire. The results from an 84% return rate (n=300)) demonstrate that the majority (78%) of respondents thought it desirable to have a parent present at induction. This shows an improvement on the results of the initial study conducted by the author (Glasper, Dewar, 1987) which highlighted the problem of parental presence among the Association of British Paediatric Anaesthetists.

When Adrian While wrote his Personal View in the BMJ (1985) he commenced a professional dialogue which persists to this day. Adrian While although critical of the way in which his daughter was anaesthetised in the absence of a parent (in this case himself) highlights in a subsequent letter to the editor of the BMJ (1985) the importance of preparing a parent for their role in the anaesthetic room. He reinforces the reality that an unprepared parent could be a liability in the anaesthetic room. There is, however, evidence that a prepared parent can be of help in the anaesthetic room (Hannallah, Rosales, 1985), (Schulmann, Foley, Vernon, 1981) and the fears of anaesthetists may prove groundless. The former study examined the effects of parental presence on fifty unpremedicated children and concluded that parental presence was beneficial for the children especially those in the pre-school age group.

The objectivity of the Canadian study must remain doubtful in that it was the theatre staff who made the judgements on the child’s emotional state during induction. Despite this criticism the findings of this current study lend support to their findings. This investigation remains unique in that it is the first to draw upon the perceptions of significant numbers of experienced paediatric anaesthetics who had no connection or prior knowledge of the study. The 105 participants have independently judged the children with and without parents and the results are significant. Although the results demonstrate that accompanied children were perceived by anaesthetists to be less upset than those without their parents there are no inferences which can be made as to what effect the
parental presence had on the operating anaesthetists or other involved health care professionals.

**Figure 9-4** details the responses of one of the main protagonists in this continuing debate i.e. The RSCNs (registered sick children's nurses). The sick children's nurses have a long history of corporate identity which predates that of the registered general nurse. Despite the child centred orientation of the professional children's nurse it is salutary to note that up until the publication of the Platt report (1959) the role of parents in hospital was extremely limited with the children's nurse acting "in loco parentis" for the hospitalised child. Up until the 1960's the majority of children nurses believed that parental presence in hospital only exacerbated a child's labile psyche. This sees the origins of the contagion hypothesis which endeavoured to give a scientific explanation as to why parents should be excluded from active participation in care. As a consequence, the post war phenomenon of parental involvement in hospital owes much to the pioneering work of non nurse individuals such as James Robertson (1974) a psychologist, and the National Association for the Welfare of Children in Hospital (NAWCH now Action of Sick Children). It should be stressed that the educational strategies for nurse training up until the 1960's were rooted in the dogma of infection control. However, following the revelations of parental efficacy the children's nurses embraced this new philosophy fervently.

The 1990's mission of the RSCNs is one of family advocacy and some have approached this ardent with the occasional acrimonious conflict as differing cultural worlds collide. Few professionals relish being told what to do by members of a different profession and if the children's nurses have been somewhat over zealous in the pursuit of family centred care this must be attributed to the enthusiasm of the converted. The encouragement of the role of the parent in the anaesthetic room is one example where children's nurses have attempted to use rhetoric rather than research to pursue an objective. The modern day RSCN educational curricula is very different from that of 30 years ago. The emphasis is now placed on the child as an integral component of the family unit where parental participation is valued. No longer is the parent an onlooker during their child's admission, but rather an equal partner in the delivery of care.

The involvement of parents in care has been described by Cleary and colleagues (Cleary, Gray, Hall, Rowlandson, Sainsbury, Davies, 1986) who
discuss the establishment of a care by parent scheme. This was seen as a natural extension to the increased involvement of parents in the care of their children in hospital. The promotion of parents as carers should be greeted cautiously and never encouraged for expediency during times of staff shortages. Much of the prevailing philosophy concerning children’s nursing is inspired by the work of Dorothea Orem, a North American Nurse Theorist whose nursing

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**Figure 9-4 RSCN judgements**

model is described as a self care model. In this model Orem (1985) places emphasis on the patient or parent as an agent of self care. This notion of self care stems from North America where dependence on a health system free at the point of delivery is minimal. There are obviously potential dangers of abuse in such a model in that parents can be used as "pairs of hands" thus potentiating
their perceived utility. The "new age" children's nurse is acutely aware of the psychology of childhood and is trained to recognise signs of stress in a child.

The judgements in Figure 9 - 4 are, therefore, not surprising given the child focused orientation of this group of nurses. That the participant group who had no prior knowledge of the investigation judged the children who were with their parents to be less upset than those children without their parents is significant. Although there are other variables under consideration throughout the study, the primary independent variable was parental presence. The dependent variable of the responses of judges in this case 105 children's nurses trans UK is shown in the histogram and collaborates the hypothesis that children are less upset when accompanied to the anaesthetic room by a parent.

The study by Gauderer and colleagues (Gauderer, Jorig, Eastwood, 1989) reported a four year experience of parental presence during induction of children. Few parents found the role difficult and the investigators describe the anaesthesia process as smoother. The difficulty with single centre studies is always one of objectivity given the controversy which presides relating to parental presence.

Orr and Lynn (1991) describe positive experiences with parents in the anaesthetic room in Seattle, Washington U.S.A. demonstrating that growing familiarity with parental presence results in positive perceptions over time. The children's nurses perceptions of parental involvement in care have likewise improved over time and throughout UK children's units parents are now perceived as equal partners in the multi disciplinary team.

Figure 9 - 5 presents the data generated by the judgements of the registered general nurses. The strong bias towards the group of children accompanied by a parent is somewhat similar to that seen in the RSCN responses. With 38% of the total number of judgements at the top end of the scale for the with parent group and 26% for the without parent group, the empirical evidence to support parental accompaniment is strong. Despite the emphasis on child psychology tuition throughout the RSCN curriculum compared to the RGN curriculum there is little difference in the judgements of the two groups. All groups of judges demonstrate a statistically significant bias towards the accompanied group of children. An interesting viewpoint relating to parental accompaniment is given in an editorial in an American journal called "Same Day Surgery" published by a
company known as American Health Consultants (1993), the editorial suggests that some day surgical centres may be able to attract more paediatric customer patients by offering parents the option of remaining with their children whilst the anaesthetic is administered. The move in culture by the NHS to a more market economy philosophy may well, therefore, open previously closed doors.

The emphasis on client empowerment focused through patients charters, children's charters etc. may well be the precursor which revolutionises the relationship that health care professionals have with their patients. It has been suggested that a star system similar to that used by hotels could be used for children's units (Ball, Glasper, Yerrell, 1988) in the future. The new competitiveness of the NHS trusts and health commissions may bring to the

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**Figure 9-5** RGN judgements
forefront issues such as parental roles in hospital. The widely published mission statements of the new trusts, place emphasis on the integrity of the client and the strong desire of the institutions to "serve". The greater openness of the hospitals with their commitment to consumer satisfaction is accelerating previous low priority patient focused projects.

It is important to recognise that patient focused projects must involve all members of the multidisciplinary team. Donnelly's investigation (1991) reveals that medical staff, anaesthetic nurses and Operating Department Assistants still have mixed views about the presence of parents in the anaesthetic room. These groups must be reassured as to the appropriateness of parental participation during stressful events if new and innovative roles for parents are to evolve.

Figure 9 - 6 shows the responses of the final judge group, the student nurses. Of great interest is the similarity between the judgements of the students and the theatre nurses with 43% of all judgements for each group in the top ranking position of the scoring scale for the with parent group. The anaesthetic experience of the student nurses with a mean age of only 21 years is small at only 0.1 year. The ability of the student group to differentiate the accompanied group of children from the unaccompanied group of children in terms of their mean judgmental ratings is significant and collaborates the judgements of the other more experienced groups. As with the other judge groups the students were recruited to the study across the training institutions of the UK with no prior knowledge of the investigation.
Figure 9-6  Student nurse judgements

Figure 9-7 begins to differentiate the responses of the judges to children with and without their parents in the waiting area of the theatre complex. The theatre suite was built primarily to be functional and child centred considerations would have played little part in its design. The prime consideration is naturally the prevention of infection and this accounts for the differing zones of a modern theatre complex designed to keep traffic to the minimum. The design at Southampton which is similar to many other district general hospital theatre suites has a transfer zone. The transfer zone is where the personnel from the outer sanctum hand over the patient to personnel in the inner sanctum. This has traditionally been the cause of much heated debate because in recent years parents have accompanied their child to the doors of theatre thus in the opinion...
of some health care professionals exacerbating the child's delicate emotional state at the point of parental departure.

The growth in day surgery and the decline of sedative premedicants at least in many paediatric centres ensures that the children are fully awake when they arrive at the theatre complex. Although always a hit and miss strategy (because of changes to the operating list) the use of sedative premedicants ensured that many children were asleep long before they ever arrived in the operating department. There are still some anaesthetists who prefer to use a premedicant for this purpose but the desirability of having a child fully awake and ready for discharge within four hours of surgery is a potent reason for their decline. The correspondence generated within the British Medical Journal following the Adrian White Personal View Publication included a letter by A.J. Carter (Carter, 1995). In this letter, Dr. Carter argues the case for the use of sedative premedicants, his preference being omnopon and hyoscine. He believes that day case surgery trends and traumatic anaesthetic induction are linked. Although admirable, Dr. Carter states that day case surgery prevents anaesthetists seeing their patients in advance and thus the inductions are made worse because of this. The practice of allowing parents to accompany their children from the ward to the doors of the theatre but not allow them into the complex itself, may potentiate the negative effects of parental separation at the point at which the child becomes frightened.

Schulman and colleagues (1965) have described the period of time after the departure of the parent as the threat phase which extends up until the point of anaesthetic administration. For the purposes of this study and because the UK tradition differs from that of North America, the period of time after the parent leaves (or stays as the case may be) and the child is transferred to the theatre waiting area has been described as the pre-threat phase. This is to differentiate the period afterwards when the child is transported to the anaesthetic room where the first period i.e. just before induction is described as the threat phase and the commencement of anaesthesia itself as the impact phase.

Although inspired by the Schulman study, this investigation also draws upon that inquiry conducted by Hannallah and Rosales (1983) who measured the mood of accompanied and unaccompanied children in the waiting room, during the pre induction period and during the induction of the anaesthetic. In addition, they measured the mood of the children post operatively in the recovery room. The
Figure 9-7 All judgements

histogram in Figure 9-7 unlike Hannallah and Rosales study in which the mood of the children in the waiting room for both groups was comparable, shows a striking bias towards the accompanied children being judged as less upset than the control unaccompanied group. This result supports the professional opinions expressed by members of theatre personnel nation-wide, that the period when a parent leaves a child is critical. Should that period occur at the point of transfer of the child across the redline of the inner sanctum to the waiting room as is commonplace, then turbulent behaviour is to be expected. For this reason, some anaesthetists and theatre nurses have argued that any period of separation should begin before the child leaves the ward.
For those professionals opposed to parental presence in the anaesthetic room this strategy would appear to offer a solution to the upset child in the waiting room. This does not, however, overcome the reality of modern day case surgery where the child, generally unpremedicated is collected from the ward by a stranger (theatre porter), placed on a trolley and then wheeled some considerable distance (at Southampton on a different floor) to the theatre vestibule where the child is handed over by the accompanying nurse (also a stranger) to another strange nurse. Anecdotal evidence of children screaming their way to theatre is notorious up and down the country. Although the practice of parental accompaniment was established at Southampton before this main study was completed, the day ward sister introduced a policy where the children walk to theatre. This policy in turn has been overtaken by a newer more modern method of transport, where the children drive to theatre in self drive battery operated child sized jeeps. The aim of this latest innovation is to produce a less upset child at the point of transfer to the operating theatre.

Although the waiting area of the theatre at Southampton has been embellished with child centred murals and the provision of toys, it can never the less be a lonely and frightening place for a young child who has just left his mother (or father). The significance of the results shown in Figure 9-7 would appear to collaborate this and suggest that parental accompaniment is beneficial for the children in the waiting room.

Figure 9-8 examines the judgements of children as they enter the anaesthetic room up until the point of commencement of anaesthesia induction. The experimental group (accompanied) are judged to be less upset than the control (unaccompanied) group. The responses of the judges to the children featured in the video tapes are for the thirty second periods just prior to the commencement of anaesthesia. Given the description of the child's stay in the waiting area as the period of pre threat, the utilisation of the term threat for the period up until the commencement of anaesthesia in the anaesthetic room itself is probably appropriate. This description is commensurate with the descriptions in the other prior studies and reflects the strangeness of the environment for the young child. It is worthy of reflection to note that the children are often lying on their backs, seeing at an unusual angle, strange equipment and people wearing masks.

Brown and Fisk (1979) in a seminal text for paediatric anaesthetists describe the anxiety in crying children about to be anaesthetised who do not really
understand what is going to happen to them. The move to the anaesthetic room takes but a moment at Southampton but as the children are pushed through the swing doors of the anaesthetic room they enter a different world. The staff have been to great pains to create an environment conducive to children and have painted the ceiling to create a mural. A toy hangs down from the inspection lamp and the children are encouraged to concentrate their efforts on looking at it. The children, however, follow the anaesthetists every move as he prepares himself for the induction. This will take the form of preparing the anaesthetic Boyles machine or the syringes, in the case of an intravenous induction. Children's fears may be worsened in the absence of a secure loved one and the histogram in Figure 9 - 8 collaborates this.

**Figure 9 - 8** Judgements of children in pre-induction area
The base data showing total scores in the higher judgement scale of 283 responses for children without their parents compared to total response scores of 496 for children with their parents is statistically significant. This result in common with the others in the data set refutes the findings of the study conducted by Yemen and Nelson (1992) entitled, "Parental Presence at Induction: Do the parents make a difference?" This investigation also utilised video tape analysis, this time of 62 children, but in this case the authors report that children without their parents scored significantly better (p<0.05) than the accompanied children. The authors, however, point out that 55 of the 56 children interviewed post operatively stated that they preferred to have a parent present at induction for a future anaesthetic. This study concludes that unpremedicated day surgical patients without prior anaesthetic experience did not demonstrate less anxiety or fear during a gaseous (Halothene) induction with a parent present. It is worthy of note that all the children in Yemen and Nelson study were induced by the gaseous method and that all the judgements of the video tapes were made by only 2 members of the child psychology department whose degree of knowledge relating to the project was unstated.

Figure 9 - 9 details the judgmental responses to children at the point of commencement of anaesthesia. This is the stage at which the gaseous induction begins or the anaesthetist attempts cannulation of a vein and it has been described as the point of impact. The Yemen and Nelson study (1992) described a cohort of children who were induced exclusively by the gaseous method. In contrast the UK tradition at least in recent years, favours the intravenous route. This tradition has been augmented by the introduction of EMLA cream a topical local anaesthetic which is now widely used to mitigate the pain of venepuncture.

Brown and Fisk (1979) describe children's fears of venepuncture but it should be recognised that there may be cultural differences between children's perceptions of this which vary from country to country. Anecdotal evidence in the UK suggests that the intravenous route is preferred by children but this must be tempered by the rapid introduction of EMLA cream. The Schulman and colleagues study (1967) fails to mention the type of induction, the Hannallah and Rosales study (1983) gives information related to the intravenous method, the Johnston and colleagues study (1988) again fails to mention the type of induction but, Yemen and Nelson (1992) study details gaseous inductions as does the Gauderer and colleagues study (1989).
It is interesting that none of these North American studies mention EMLA cream and its use in anaesthesia induction. The percentage of high score responses for the without parent group at 23% compared to 31% for the with parent group is significant with a probability of less than 0.05. However, the total number of high score responses for the accompanied group is less than the total number recorded in the waiting area or the threat area. It can be speculated that EMLA cream in reducing the trauma of an intravenous induction may be responsible for this in both experimental and control groups.

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**Figure 9 - 9** Judgements of children in the post-induction area

**Figure 9 - 10** represents one of the most interesting findings of this study. Professional health workers are trained to identify children who are at risk of
Discussion of Results

emotional disturbance and although there are many factors to be considered, age is consistently a variable. Younger children are especially susceptible to fears and the distress caused by separation from parents is an element that must be appreciated by health professionals.

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Figure 9 - 10 Judgements of children less than 2 years of age

Bowlby (1971) highlights the plight of young children when separated from their parents: The histogram in Figure 10 highlights the differences between the accompanied and unaccompanied cohort of children. The accompanied group were
judged to be considerably less upset than the unaccompanied group suggesting that at least for younger children there are considerable benefits in having a parent present at the anaesthesia induction. Age is consistently quoted as important in any study of children in hospital.

Bevan and colleagues (1970) describe how fear during anaesthesia induction in children and mood upset is demonstrated in younger patients. The results of this current study are, therefore, consistent with available sources of knowledge and suggest, at least for the younger age group, a continuation of policies which facilitate parental presence during anaesthetic induction.

Figure 9 - 11 considers the responses of judges to children between two and five years of age with and without their parents. The statistical significance of the results are clearly shown in the left to right bias of the histogram. The distribution of scores across the full range of the scale for the without parent group differs from the distribution of scores for the with parent group, lending support to argument that younger children, in this case pre school children, are predominantly less upset when accompanied to the anaesthetic room by a parent. Children in this age group are described as being at a stage of development known as the pre-operational stage (Pontious S.L, 1982). At this stage children are still very much egocentric and see the world through their own point of view. A characteristic of this stage of development is that the child believes that hospital is a punishment for some wrong doing.

In addition, children in this stage of development are animistic i.e. they can attribute life to inanimate objects and, therefore, strange equipment may take on a more frightening dimension. Children less than two years of age by comparison do not have the capacity to understand spoken language in the way that older children can. Therefore, strategies to deal with unaccompanied children in stressful environments such as the anaesthetic room need to rely on more than verbal explanations alone. The 2-5 year old child unlike their younger peers are bigger, stronger and more vocal. An unpremedicated frightened child during the pre-operational stage of development can cause pandemonium in some situations. Fear of the mask or needle can exacerbate this. This study purports to show that parental presence can be efficacious in such circumstances. In a study conducted by Vetter (1993) 500 elective surgical outpatient children were assessed at the point of parental separation when the child was transferred from the presurgical holding area (immediately adjacent to the operating room) to the operating room. All children
received a gaseous induction and were assessed on their acceptance of the flavour scented mask. The investigation revealed that children between 2 years and 6 years of age were more likely to exhibit problematic behaviour than older children and this finding collaborates the results of the current study.

Schulman and colleague's seminal study on the effort of parental presence during anaesthesia induction (1967) utilised a cohort of 32 pre-operational

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<tr>
<td></td>
<td>Age 2-5yrs - With parent (%)</td>
</tr>
</tbody>
</table>

Figure 9 - 11 Judgements of children 2 - 5 years of age
children between the ages of 2 and 6 years of age. The mood of the child was measured during induction and the description of the mood categories is in itself revealing. Schulman rated mood using a seven point scale with happy and controlled scoring 1 to screaming full blast with intense and constant crying without paying attention to anything scoring 7. His study supported parental presence as does this current investigation. In addition, throughout this contemporary study there were no reported instances of parents becoming unduly upset, critical or interfering with the work of the theatre team.

Gauderer and colleagues study (1992) utilised among others 1,190 2-5 year olds. Although no quantitative data was kept the subjective experience of the operating room team at the Children's Hospital in Cleveland Ohio was supportive to parental presence over a four year period.

Braude, Saxon and Sumner (1990) in their study of parental attitudes towards parental presence at anaesthesia induction highlight the issue of the pre-school child in which parental separation is regarded as a major contributory factor to post hospital behaviour disturbance. The mean age of children in the Hickmott and colleague's study (1989) was 4.6 years for the accompanied group (n = 26) and 5.8 years for the unaccompanied group (n = 23). The investigators used a similar 1-4 scoring system for assessing mood to that used in the Hannallah and Rosales (1983) study where 1 = calm and 4 = very upset.

Of great interest in the Hickmott et al study is the absence of any significance using the Mann-Whitney U test between the two groups. However, the significance of the results in this study compares favourably with the Schulman and Hannallah studies. The Hickmott study utilised observers who were either recovery room nurses or seconded ward nurses in each case and presence of observer bias is not mentioned or discussed.

Figure 9 - 12 provides details of the responses of the judges to children greater than five years of age. Although less striking than the judgements of the two younger age groups, the results of the Mann Whitney U test remain statistically significant with 37% of the total judgements in the highest score category for the with parent group compared to 34% for the children without parents. Older children are believed to be less dependent on their parents for emotional support and once they have commenced school come into contact with many strange people. In addition, as children approach 7 years of age they enter a stage known as the
concrete operational stage where the capability to understand the world is much greater. The school age child's ability to reason and therefore be reasoned with is developing, making it easier for a health care professional to negotiate a degree of co-operation. Despite this for some children at the younger end of the spectrum, the visit to the operating suite remains traumatic.

<table>
<thead>
<tr>
<th>Z</th>
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<tr>
<td>-3.449</td>
<td>&lt; 0.001</td>
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**Figure 9 - 12** Judgements of children greater than 5 years old

**Figure 9 - 13** examines the responses of judges to male children with and without parents and **Figure 9 - 14** females with and without parents. It was decided to ascertain the difference, if any, between judgements of boys and girls undergoing anaesthesia with and without parents. This arose because of unsubstantiated claims by some health care professionals that boys especially in the young age...
group, were seemingly more dependent on parental support during stressful procedures than girls. The data described in Figures 13 and 14 does not support this, and it must be concluded that there are no apparent gender differences in the responses of the judges to children undergoing anaesthesia. The data, however, continue to support the groups of children

![Mann-Whitney U Test Table]

![Base Data Table]

**Figure 9 - 13 Judgements of male children**

accompanied by parents to the anaesthetic room and show a significant difference when compared to the unaccompanied group of children. The anecdotal evidence
that girls behave more appropriately than boys may be more a reflection of compliance rather than any perceived reduction in levels of upset.

<table>
<thead>
<tr>
<th>MANN-WHITNEY</th>
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<tr>
<td>z</td>
<td>Score interval</td>
</tr>
<tr>
<td>-14.321</td>
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<td>2-tailed probability</td>
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<td></td>
<td>3-4</td>
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<td></td>
<td>5-6</td>
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<td></td>
<td>6-7</td>
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</table>

Figure 9 - 14 Judgements of female children

Figure 9 - 15 compares children receiving an intravenous induction with their parents present and children without their parents presence. The base data shown in Figure 9 - 15 and the distribution of scores on the histogram all support the with parent group. The rapid utilisation of EMLA cream has mitigated considerably the painful effects of an intravenous induction and compensates for the decline in the use of sedative premedicants following the introduction of day surgery.
Judgements of Children Receiving Intravenous Induction of Anaesthesia

Figure 9 - 15 Judgements of children receiving intravenous induction

Figure 9 - 16 compares children receiving a gaseous induction with their parents present and children without their parents presence. The base data and accompanying histogram shows a marked difference between the accompanied group and the unaccompanied group. With only 21% of the judgements allocated to the high score index for unaccompanied children compared to 44% of judgements for accompanied children, the level of significance raises interesting questions. North American studies tend to describe cohorts of children where the gaseous method of induction is used (Yemen, Nelson, 1992) (Smerling, Lieberman, Rothstein, 1988) and UK studies the intravenous method (McSchofield,
White, 1989) (Hickmott, Shaw, Goodyer, Baker, 1989). It is difficult to speculate the cultural differences between children's perceptions of gas versus intravenous

![MANN-WHITNEY TAU TABLE]

<table>
<thead>
<tr>
<th>Score Interval</th>
<th>1-2</th>
<th>2-3</th>
<th>3-4</th>
<th>4-5</th>
<th>5-6</th>
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<tbody>
<tr>
<td>Gaseous - Without parent (n)</td>
<td>162</td>
<td>203</td>
<td>205</td>
<td>233</td>
<td>162</td>
<td>245</td>
</tr>
<tr>
<td>Gaseous - Without paren (n)</td>
<td>15</td>
<td>16</td>
<td>16</td>
<td>18</td>
<td>14</td>
<td>21</td>
</tr>
<tr>
<td>Gaseous - With parent (n)</td>
<td>30</td>
<td>113</td>
<td>147</td>
<td>196</td>
<td>221</td>
<td>561</td>
</tr>
<tr>
<td>Gaseous - With parent (n)</td>
<td>2</td>
<td>9</td>
<td>12</td>
<td>18</td>
<td>17</td>
<td>44</td>
</tr>
</tbody>
</table>

![BAR CHART: Judgements of Children Receiving Gaseous Induction of Anaesthesia]

Figure 9 - 16 Judgements of children receiving gaseous induction

inductions, but the histogram in Figure 9 - 16 clearly demonstrates the UK judges responses to children receiving a gaseous induction. It would be speculative to apply a meaningful explanation to this phenomenon but a closer examination of the interrelationship between the two methods of induction might be helpful.
As previously mentioned EMLA cream has been hailed as a panacea by many UK anaesthetists who routinely use the intravenous method of induction. The use of rubber masks disguised or otherwise (some anaesthetists disguise the anaesthetic tubing in a variety of toys) is not always appreciated by some children. The smell of the gas and/or rubber is a particularly unpleasant smell and many people now well into adult life anecdotally recall unpleasant gaseous inductions as children (usually associated with a visit to the dentist). North American anaesthetists utilise child pleasing flavoured gels to coat the insides of anaesthetic masks (Gauderer, Jorig, Eastwood, 1989). Such gels are given the colloquiums "Lip Smackers" and come in flavours such as cherry or bubble gum.

There are no reported uses of such gels in contemporary British literature. This notwithstanding the scores of the judges used for this UK study favours those children accompanied by parents to the anaesthetic room. The interrelationship between method of induction, the use of premedicants and parental presence will be the subject of continuing debate among health care professionals.

Figure 9 - 17 and Figure 9 - 18 show the responses of the judges to those children who received high levels of information and low levels of information with and without parental presence. The giving of information to parents is very much part of that strategy of empowerment which has in recent years embraced the philosophy of family centred care. Although the base data continues to strongly support parental presence to a significant level, the increased numbers of high scoring children in the unaccompanied but high information group of children at 29% compared to 24% for the low information unaccompanied group is interesting. A consistent plea by anaesthetists is that if parents wish to have a role in the anaesthetic room they should be prepared for that role. The benefits of information giving are apparent in the presented data.

Clearly strategies to promote increased levels of knowledge among parent groups is desirable and has been pursued through such innovations as preadmission programmes and information leaflets. Whatever the stance of the various protagonists in the debate, it is clear that to ask parents to fulfil a role without adequate support and information is morally indefensible. Parents hunger for information and make eager learners. An editorial in Paediatric Mental Health (1982) gives details of McMaster University Medical Centre - Hamilton Ontario, Canada, which has commenced a policy initiative which utilises volunteers who are trained to teach parents about their forthcoming role in the anaesthetic room.
The preparation of the parent takes place before surgery and on the day of the operation the volunteer is there to look after the parent while the parent looks after the child. This is particularly important as a major criticism expressed by UK anaesthetists and theatre staff of parental presence at induction is that there are insufficient resources to allocate someone to look after parents. The assertion by the professionals that their first duty is to their patient is undeniably true but this fails to recognise the indivisibility of the family as a single unit. Increased parental roles in hospital require adequate resourcing.
The UK health service has never used volunteers in the way that they are used in North America and given the high unemployment rates and early retirements among professional people this is surprising. The poorly developed hospital "league of friends" in many hospitals throughout the UK cannot be compared to the efficiency of for example, the Women's Auxiliary at The Hospital For Sick Children Toronto. Perhaps a greater utilisation of the latent support which exists in all communities could be harnessed to accomplish a similar programme to that in Hamilton Ontario.
At Southampton, the Saturday morning programme attempts to emulate at least part of the North American commitment of giving information to health care clients.

Figure 9-19 represents an analysis of the data by individual child. The mean ratings of the judges have been analysed to give one score per child. The resulting Mann-Whitney U test demonstrates the significance of parental presence and this summary histogram shows the distribution of the scores across the seven point scale. Braude, Ridley and Sumner (1990) state that it is impossible to predict whether a specific parent would be of benefit to their child and the administration of
the Speilberger trait and state anxiety questionnaires to parents was an attempt to address the contagion hypothesis.

The Yemen and Nelson study (1992) and the Bevan and colleagues' study (1990) demonstrate concerns related to parental presence. The Bevan study in particular used a visual analogue scale to assess parental anxiety and was able to correlate parental anxiety with children who themselves were rated by observers as anxious. This study utilised a cohort of 134 children and their parents. The observers were all members of the theatre team and the question of bias should not be underestimated as is stated in the study. This current investigation was unable to correlate measures of child anxiety with measures of parental anxiety and attempts to do so through the utilisation of estimations of parental anxiety were inconclusive as shown in Figures 9 - 20, - 21, - 22, - 23. The Speilberger anxiety rating scale utilizes a two part self evaluation questionnaire consisting of a number of statements (n=40) which individuals use to describe themselves at a particular moment in time (i.e. at this moment) and as they normally are (see Appendix II for sample questionnaire). The primary goal of the rating scale is to determine differences between an individual's normal degree of anxiety (trait) and that attributed to an unusual episode in life (state). In comparing differences between two or more groups of individuals it might be possible to demonstrate the efficacy of one particular variable, in this case parental presence during anaesthesia induction. Each statement listed in the questionnaire is given a weighted score of 1-4. Where a score of 4 is equal to a high degree of anxiety for some items, 1 is equal to a high degree of anxiety for others. The scoring system is thus reversed for 50% of the statements listed in the questionnaire.

All participating parents completed the anxiety rating questionnaires and the results were carefully analysed. Although the comparisons between accompanied and unaccompanied groups of parents were inconclusive, further tests were undertaken to ascertain differences between the two groups of parents. A decision to compare the anxiety rating of parents whose children had been allocated scores by judges of less than 3.5 i.e. more upset, with those children who had been allocated scores greater than 3.5 i.e. less upset, similarly revealed no discernible difference of any statistical relevance. Despite this finding, for some parents participation in their child's anaesthesia induction is not in their best interest (Vessey, Caserza, Bogetz, 1990).
Although Braude and colleagues (1990) question the ability to predict the benefit of parents to children undergoing anaesthesia, the Bevan et al study suggests just that. They believe that a simple assessment of parental anxiety should be made part of a routine preoperative evaluation through which they suggest anxious and calm parents can be identified. The resulting high anxiety parents, once identified, can subsequently be excluded from the anaesthetic room. This elaborate suggestion belies the growing role that parents play in the care of their children in hospital and is not supported by the results of this study. The inconclusiveness of the data is shown in Figures 9-21 to 9-24 and the suggestion that an easy reliable method of identifying the anxious parent who in turn generates an anxious child is therefore rejected as over simplistic.
Discussion of Results - 212

<table>
<thead>
<tr>
<th>MANN-WHITNEY</th>
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<tbody>
<tr>
<td>Z</td>
</tr>
<tr>
<td>-1.457</td>
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</table>

**Frequency Range of Spielberger State Levels**

- **Accompanying Parents**
  - (Child’s mean score < 3.5)
- **Accompanying Parents**
  - (Child’s mean score > 3.5)

Figure 9 - 20 Frequency range of Spielberger state levels
MANN-WHITNEY

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<th>2-tailed probability</th>
</tr>
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<td>Z</td>
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<tr>
<td>p</td>
<td>0.402</td>
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</table>

**Frequency Range of Spielberger Trait Levels**

- **Box**: Accompanying Parents
  - (Child's mean score < 3.5)
- **Square**: Accompanying Parents
  - (Child's mean score > 3.5)

*Figure 9-21  Frequency range of Spielberger trait levels*
**MANN-WHITNEY**

<table>
<thead>
<tr>
<th>2</th>
<th>2-tailed probability</th>
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<td>-1.607</td>
<td>0.108</td>
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</table>

**Discussion of Results - 214**

Frequency Range of Spielberger State Levels

![Frequency Range of Spielberger State Levels](image)

**Figure 9 - 22** Frequency range of Spielberger state levels
**Frequency Range of Spielberger Trait Levels**

- **MANN-WHITNEY**
  - Z: -0.747
  - 2-tailed probability: 0.455

**Figure 9 - 23** Frequency range of Spielberger trait levels
Figure 9 - 24 addresses a significant aspect of the controversy related to parental presence in the anaesthetic room i.e. the time taken to anaesthetise an accompanied child may be greater than an unaccompanied child. This has often been quoted by anaesthetists as a reason to prohibit parental presence and has been addressed in a study conducted by Hickmott, Shaw, Goodyer and Baker (1989). The Hickmott and colleagues study confirmed that children in the accompanied group did not, in emotional terms, differ significantly from the control unaccompanied group and was generally supportive to parental presence. The area of interest reported in the study was that the accompanied group of children (n = 26) took longer to anaesthetise than the accompanied group (n = 23). Induction in all but one of the children was via the intravenous route. The study reported a negative correlation between the age of the child and the time taken for induction. The mean duration of induction for the experimental group was 5.23 minutes compared to 3.97 minutes for the control unaccompanied group.

The histogram in Figure 9 - 24 details the induction timings for the experimental and control groups for the gaseous and intravenous methods. There is little difference between the two groups and the marked differences found in the pilot study are not replicated in the main study. The pilot study results are almost the opposite of the Hickmott study findings and the small numbers employed for both studies (n = 23 and n = 49 respectively) may explain this difference. The induction timings of the larger cohort utilised for this study do not support the findings of either study. The insignificant induction timing differences between the accompanied and unaccompanied groups suggests that parental presence plays little, if any, part in the overall time it takes an anaesthetist to induce a child.
Figure 9 - 24 Induction times
Discussion of Results - 218

Conclusions

At the commencement of this programme of study, there were heated debates raging within the professional journals. In the interim period this ardour has become less strident. In a recent study, McEwen, Caldicott and Baker (1994) confirm that of a sample of 184 parents who accompanied their child to the anaesthetic room, 98% would want to do so again in the future were that necessary. The authors concur and believe this view should prevail unless there are overriding considerations. In addition, although the role of parents in the anaesthetic room is perhaps less controversial than in previous years, it has been suggested that parents may have a role in the recovery room (Hall, Payne, Stack, Stokes, 1995). This study has attempted to demonstrate, on a national basis, the efficacy of parental presence during anaesthesia induction in childhood. The study uniquely utilised judges from across the whole of the UK and the results suggest that the primary hypothesis "that day case children are less likely to be judged by health care professionals to be upset during the anaesthesia induction when a parent is present" be upheld. The robustness and size of the study has been an attempt to throw light on the confusion surrounding the issue. In addition the hypothesis that:

1. Children who are accompanied to the anaesthetic room by a parent take less time to induce than non accompanied children is rejected.

2. Children are less upset when anaesthetised by the intravenous route is upheld.

3. Parents who are given higher levels of information pertaining to the child's visit to the anaesthetic room are less likely to have children who are judged to be upset is upheld.

4. Younger children are more likely to be upset during the anaesthesia induction in the absence of parents than older children is upheld.

5. Boys are more likely than girls to be upset during the anaesthesia induction in the absence of parents is rejected.

6. Operating theatre based health care professionals are less likely to judge unaccompanied children as upset than non-theatre based health care professionals is rejected.
The final decision regarding who or who may not be present in an anaesthetic room must rest with the practising anaesthetist. This study, however, may help some anaesthetists and nurses appreciate the supportive role parents can play during the induction of children attending hospital for day case surgery.

Recommendations

Specific policies related to parental roles in anaesthetic rooms should be developed.

The current "laissez faire" approach utilised by many units is unsatisfactory and fails to maximise the latent potential which exists in many families to support frightened children. Parents who are prepared for stressful roles are better able to function than those who are not. The development of anaesthetic room protocols for parents can only mitigate against the possibility of critical interfering parents. (See Appendices for examples of protocols). The special anaesthetic problems of young children, especially those under three years of age highlighted by Hatch (1984), should now perhaps reflect all the special skills possessed by paediatric anaesthetists. Although the primary commitment of the anaesthetist is to the child and not the parent, "strategies to allow familiarisation with parental presence should be sought". In addition, questions related to parental presence should address the issue of one parent or two. Although many anaesthetic rooms are small and were not designed for visitors some are being relocated to new operating theatre suites where there is greater potential for flexibility.

Preadmission programmes in which parents can be prepared for a role in hospital should be investigated.

Preadmission programs can allow families to rehearse their roles for a forthcoming hospital admission and in particular the anaesthesia experience. This study has suggested that the giving of information to parents can result in a more satisfied family experience of hospital.

If parents are to have a role in what might be a stressful procedure, it is important that staff members provide a sufficient information related to that role. Preadmission programmes may be a vehicle through which such information can be given to parents. Strategies to provide preadmission information for all families attending hospital should be pursued.
Although it was not possible during this anaesthetic study to compare children whose parents attended a preadmission programme with those who did not, it would nevertheless be interesting to do so.

Anxious parents who might exacerbate a child's emotional state should not be pressurised into accompanying a child to an anaesthetic room.

Although Darbyshire (1993) highlights the fundamental issues regarding the nature of being the parent of a hospitalised child and the problems of "parenting in public" not all parents are able to support a child during emotionally charged hospital procedures. They should not be made to feel guilty in these situations and health care professionals should exercise great diplomacy in assisting families to make the right decision.
References
Akman P.,
Friesen W.V.  (1975)  Unmasking the face. Prentis Hall
Englewood, Cliffes, N.J

Atwell J.D.,
Gow A.M.  (1985)  Paediatric trained district nurse in the
community: Expensive luxury or
economic necessity? British Medical
Journal, Vol. 29, pp227-229

Bahrick H.P.,
Bahrick P.O.,
Wittlinger R.P. (1975)  Fifty years of memory for faces - a cross
sectional approach. Journal of
Experimental Psychology: General.
Vol. 104, No. 1, pp54-75

Balbernie R.  (1985)  Fear is the key. Senior Nurse Vol 3, No 4,
pp93-94

Ball M.,
Glasper E.A.,
perceptions of paediatric care.
pp115-118

The Nursing Mirror, Feb 10, Vol. 144, No. 6
pp60-63

Bevan J.C.,
Johnston C.,
Haig M.J.,
Tousignant G.,
Lucy S., Kimon V.,
Assimes I. K.,
Carranza R.  (1990)  Preoperative parental anxiety predicts
behavioural and emotional responses to
induction of anaesthesia in children.
Canadian Journal of Anaesthesia. Vol. 37,
No. 2, pp177-182

Bibace R.,
Vol. 66, No. 6, Dec., pp912-917
References - 3


References


Committee of the Central Health Services Council (1959) The Welfare of Children in Hospital. HMSO, London

The Platt Report
Committee on Child Health Services

The Court Report

Cox B.G. (1976) 
Fit for the future. HMSO, London


Creagh T. (1990) 
"Benefit of Information Sheets in Paediatric Surgery". University of Southampton 4th year Study in Depth. (unpublished)

Darbyshire P. (1993) 

Dept. of Health (1991) 
The Welfare of Children and young people in Hospital. HMSO

Dept. of Health (1991) 
"Working for Patients". HMSO

Deutsch H. (1942) 
Some psychoanalytic observations in surgery. Journal of Psychosomatic Medicine 4, pp105-115

Dickens C. (1907) 
Oliver Twist. Dent, London

Donnelly J. (1991) 
A question of parents in the anaesthetic room. The British Journal of Theatre Nursing, Vol. 28, No. 3, pp4-8

Eckenhoff J.E. (1953) 
References

(1982) **Parents in the operating room?**
Paediatric Mental Health, Vol. 1, No. 2,
March/April  ISSN 0278-4998

(1985) **Emotion and Immunity.** Lancet, July 20th,
pp133-134.


(1984) **A Place for the Family in Hospital Life.**

(1991) University of Manchester, Booth Hall
Children's Hospital. Conference paper unpublished. 7th Annual RCN Paediatric Nursing Conference. Cowdrey Hall, Royal College of Nursing

(1980) **Reducing pre-operative anxiety in children - Information versus emotional support.** Patient Counselling & Health Education. Jan, pp130-134

(1957) **Psychological preparation and premedication of pediatric anesthesia.**
Anesthesiology Vol. 18, No. 1 Jan/Feb, pp106-109

(1985) **Correspondence - Paediatric anaesthesia.** British Medical Journal, Vol 291, 24 Aug., p543


Green J., Akman P. (1973) *Age and the recognition of facial expressions of emotion.* Unpublished, University of California, San Francisco


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<td>Nursing Research March/April, Vol. 33, No. 2, pp76-79</td>
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References


Miles I. (1986) The emergence of sick children's nursing before the turn of the century, Part 1. Nursing Education Today Vol. 6, No.2, pp82-87


Roe B. (1994) Is there a place for the experiment in nursing research? Nurse Researcher, Vol. 1, No. 4, pp4-12


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While A. (1985) **Personal View.** British Medical Journal: Vol. 291, p343

Williamson D.A.J. (1990) **Ninety years of service. A History of Southampton Children’s Hospital 1884 - 1974.** University of Southampton Publication


Appendix I

Full Results of the Main Study
### Judge type profiles - 1

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<th>Judge Type</th>
<th>Gender</th>
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<th>Average Age (Years)</th>
<th>Average Job Experience (Years)</th>
<th>Average Induction Experience (Years)</th>
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<tr>
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<td>All</td>
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<td>5.7</td>
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<td></td>
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<td>417</td>
<td>29.3</td>
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<tr>
<td></td>
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<td>36.4</td>
<td>8.3</td>
<td>7.6</td>
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<td>All</td>
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<td></td>
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</table>

Appendix I - 2
Judge type profiles - 2

All Judges - Gender

Male
20%

Female
80%

All Judges - Age/Experience

Average Age
30.7
29.3
36.4

Average Job Experience
5.7
5.0
8.3

Average Induction Experience
3.4
2.3
7.6
Theatre Nurses - Gender

- Male: 10% (11)
- Female: 90% (94)

Theatre Nurses - Age/Experience

- Average Age: 30.4, 30.0, 33.9
- Average Job Experience: 5.2, 5.2, 5.7
- Average Induction Experience: 4.9, 4.9, 5.4

Legend:
- All
- Female
- Male
Judge type profile - 4

### Anaesthetists - Gender

- Female: 23% (24 out of 80)
- Male: 77% (56 out of 80)

### Anaesthetists - Age/Experience

- **Average Age**: Females 39.5, Males 37.7, Overall 45.5
- **Average Job Experience**: Females 8.5, Males 8.9, Overall 8.7
- **Average Induction Experience**: Females 7.5, Males 7.4, Overall 7.4

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<th>Overall</th>
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<td>8.9</td>
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<tr>
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<td>7.4</td>
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Judge type profiles - 5

R.S.C.N. - Gender

Male
5% 5

Female
95%

R.S.C.N. - Age/Experience

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<th>Male</th>
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Judge type profiles - 6

R.G.N. - Gender

Male 9%

Female 91%

R.G.N. - Age/Experience

Average Age: Male 36.0, Female 30.1, All 30.6
Average Job Experience: Male 10.8, Female 5.2, All 5.7
Average Induction Experience: Male 1.3, Female 0.7, All 0.7
Student Nurses - Gender

- Male: 2%
- Female: 98%

Student Nurses - Age/Experience

- Average Age: 21.0 (All), 21.0 (Female), 19.5 (Male)
- Average Job Experience: 1.5 (All), 1.5 (Female), 1.1 (Male)
- Average Induction Experience: 0.1 (All), 0.1 (Female), 0.0 (Male)
Appendix I - 9

Responses by judge group - 1

<table>
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</tr>
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<td>14</td>
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Theatre Nurse - Without parent (\(N\) parents): 117, 76, 108, 123, 142, 244
Theatre Nurse - With parent (\(\%\) parents): 14, 9, 13, 15, 16, 30

Base data:

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<tr>
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<tr>
<td>Theatre Nurse - Without parent</td>
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<tr>
<td>Theatre Nurse - With parent</td>
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Theatre Nurse Judgements

- Theatre Nurse - Without parent
- Theatre Nurse - With parent

% Responses / Score Interval

Score Interval (Decreasing level of upset →)

1-2 2-3 3-4 4-5 5-6 6-7
Appendix I - 10

Responses by judge group - 2

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<td>2-3</td>
<td>3-4</td>
<td>4-5</td>
<td>5-6</td>
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<td>75</td>
<td>112</td>
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<td>181</td>
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<td>33</td>
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Anaesthetists Judgements

- □ Anaesthetists - Without parent
- ■ Anaesthetists - With parent

% Responses / Score Interval

Score Interval (Decreasing level of upset →)
Responses by judge group - 3

MANN-WHITNEY

<table>
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<tr>
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<th>3-4</th>
<th>4-5</th>
<th>5-6</th>
<th>6-7</th>
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<tbody>
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<td>96</td>
<td>99</td>
<td>152</td>
<td>127</td>
<td>211</td>
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<td>RSCN - Without parent (%)</td>
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<td>12</td>
<td>19</td>
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<td>25</td>
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<tr>
<td>RSCN - With parent (R)</td>
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<td>93</td>
<td>146</td>
<td>147</td>
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RSCN Judgements

- RSCN - Without parent
- RSCN - With parent

Score Interval

(Decreasing level of upset →)
Responses by judge group - 4

MANN-WHITNEY

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BASE DATA

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<th>4-5</th>
<th>5-6</th>
<th>6-7</th>
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<td>89</td>
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<td>14</td>
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RGN Judgements

- RGN - Without parent
- RGN - With parent

Score Interval (Decreasing level of upset →)
Appendix I-13

Responses by judge group - 5

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<td></td>
<td>Student Nurse - With parent (N)</td>
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<tr>
<td></td>
<td>Student Nurse - With parent (%)</td>
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Student Nurses Judgements

- Student Nurse - Without parent
- Student Nurse - With parent

% Responses / Score Interval

Score Interval (Decreasing level of stress →)
Responses by judge group summary - 1

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Responses by judge group summary - 2

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<td>16</td>
<td>18</td>
<td>18</td>
<td>26</td>
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<td>158</td>
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<td>119</td>
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<td>14</td>
<td>15</td>
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Decreasing level of upset
Judges' responses by area - 1

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Judgements of Children in Waiting Area

- Waiting - Without parent
- Waiting - With parent

Score Interval (Decreasing level of upset →)

% Responses / Score Interval

50
45
40
35
30
25
20
15
10
5
0
1-2 2-3 3-4 4-5 5-6 6-7
Judges' responses by area - 2

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Judgements of Children in Pre-induction (Threat) Area
Judges' responses by area - 3

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<td>Impact - With parent</td>
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<td>Impact - With parent (%)</td>
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Judgements of Children in the Post-induction (Impact) Area

- Impact - Without parent
- Impact - With parent

Score Interval (Decreasing level of upset →)
Summary of judges' responses by area

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<th>Score Interval</th>
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<th>2-3</th>
<th>3-4</th>
<th>4-5</th>
<th>5-6</th>
<th>6-7</th>
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<td>10</td>
<td>12</td>
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<td>35</td>
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<td>7</td>
<td>11</td>
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<td>16</td>
<td>15</td>
<td>15</td>
<td>16</td>
<td>23</td>
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<td>13</td>
<td>20</td>
<td>19</td>
<td>31</td>
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</table>
Appendix I - 20

Judges' responses by age group

MANN-WHITNEY

Z

2-tailed probability

0.001

BASE DATA

Score Interval

Age <2yrs - Without parent

Age <2yrs - With parent

Judgements of Children <2yrs of Age

% Responses / Score Interval

0 5 10 15 20 25 30 35 40 45 50

1-2 2-3 3-4 4-5 5-6 6-7

Score Interval

 Increas ing level of upset →

Judges' responses by age group - 1

Appendix I - 20
Judges' responses by age group - 2

**MANN-WHITNEY**

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<thead>
<tr>
<th>Score Interval</th>
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<th>4-5</th>
<th>5-6</th>
<th>6-7</th>
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<td>18</td>
<td>18</td>
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**BASE DATA**

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<th>6-7</th>
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</thead>
<tbody>
<tr>
<td>Age 2-5yrs - Without parent</td>
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<td>142</td>
<td>186</td>
<td>211</td>
<td>214</td>
<td>381</td>
</tr>
<tr>
<td>Age 2-5yrs - With parent</td>
<td>(%)</td>
<td>7</td>
<td>12</td>
<td>18</td>
<td>18</td>
<td>18</td>
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</tbody>
</table>

Judgements of Children 2-5yrs of Age

- Age 2-5yrs - Without parent
- Age 2-5yrs - With parent

Score Interval (Decreasing level of upset -->)

% Responses / Score Interval

- 1-2
- 2-3
- 3-4
- 4-5
- 5-6
- 6-7
Judges' responses by age group - 3

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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Judgements of Children >5 yrs of Age

- Age >5 yrs - Without parent
- Age >5 yrs - With parent

Score Interval (Decreasing level of upset ->)

% Responses / Score Interval

0 5 10 15 20 25 30 35 40 45 50

1-2 2-3 3-4 4-5 5-6 6-7
Summary of judges' responses by age group

<table>
<thead>
<tr>
<th>Score Intervals</th>
<th>1-2</th>
<th>2-3</th>
<th>3-4</th>
<th>4-5</th>
<th>5-6</th>
<th>6-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &lt;2yrs - Without parent (%)</td>
<td>85</td>
<td>156</td>
<td>210</td>
<td>280</td>
<td>734</td>
<td></td>
</tr>
<tr>
<td>Age &lt;2yrs - With parent (%)</td>
<td>5</td>
<td>10</td>
<td>10</td>
<td>13</td>
<td>17</td>
<td>45</td>
</tr>
<tr>
<td>Age 2-5yrs - Without parent (%)</td>
<td>86</td>
<td>142</td>
<td>211</td>
<td>214</td>
<td>361</td>
<td></td>
</tr>
<tr>
<td>Age 2-5yrs - With parent (%)</td>
<td>7</td>
<td>12</td>
<td>16</td>
<td>16</td>
<td>18</td>
<td>30</td>
</tr>
<tr>
<td>Age &gt;5 yrs - Without parent (%)</td>
<td>86</td>
<td>151</td>
<td>244</td>
<td>257</td>
<td>403</td>
<td></td>
</tr>
<tr>
<td>Age &gt;5 yrs - With parent (%)</td>
<td>7</td>
<td>13</td>
<td>20</td>
<td>21</td>
<td>34</td>
<td></td>
</tr>
</tbody>
</table>

Decreasing level of upset

- Age <2 yrs - Without parent
- Age <2 yrs - With parent
- Age 2-5 yrs - Without parent
- Age 2-5 yrs - With parent
- Age >5 yrs - Without parent
- Age >5 yrs - With parent
Judges' responses by gender - 1

### MANN-WHITNEY

<table>
<thead>
<tr>
<th>Z</th>
<th>2-tailed probability</th>
</tr>
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<tbody>
<tr>
<td>-12.542</td>
<td>&lt;0.001</td>
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### BASE DATA

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<th>3-4</th>
<th>4-5</th>
<th>5-6</th>
<th>6-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male - Without parent</td>
<td>406</td>
<td>348</td>
<td>283</td>
<td>234</td>
<td>185</td>
<td>764</td>
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<tr>
<td>Male - Without parent (%)</td>
<td>14</td>
<td>12</td>
<td>13</td>
<td>17</td>
<td>16</td>
<td>27</td>
</tr>
<tr>
<td>Male - With parent</td>
<td>144</td>
<td>272</td>
<td>376</td>
<td>512</td>
<td>467</td>
<td>1067</td>
</tr>
<tr>
<td>Male - With parent (%)</td>
<td>5</td>
<td>9</td>
<td>13</td>
<td>18</td>
<td>17</td>
<td>37</td>
</tr>
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</table>

Judgements of Male Children

- **Male - Without parent**
- **Male - With parent**

Score interval (Decreasing level of upset →):

<table>
<thead>
<tr>
<th>% Responses / Score interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Score interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
</tr>
</tbody>
</table>

(Depending on the level of upset →)

Appendix I - 24
## Judges’ responses by gender - 2

### MANN-WHITNEY

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<th>2-tailed probability</th>
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<td>&lt;0.001</td>
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<th>2-3</th>
<th>3-4</th>
<th>4-5</th>
<th>5-6</th>
<th>6-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female - Without parent (#)</td>
<td>134</td>
<td>128</td>
<td>193</td>
<td>226</td>
<td>206</td>
<td>312</td>
</tr>
<tr>
<td>Female - Without parent (%)</td>
<td>11</td>
<td>11</td>
<td>16</td>
<td>19</td>
<td>17</td>
<td>25</td>
</tr>
<tr>
<td>Female - With parent (#)</td>
<td>20</td>
<td>59</td>
<td>138</td>
<td>232</td>
<td>290</td>
<td>435</td>
</tr>
<tr>
<td>Female - With parent (%)</td>
<td>2</td>
<td>5</td>
<td>12</td>
<td>20</td>
<td>25</td>
<td>37</td>
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</table>

### Judgements of Female Children

- Female - Without parent
- Female - With parent

---

(Diagram showing percentage of responses across different score intervals for female children with and without parents, illustrating increasing level of stress with decreasing score intervals.)
Summary of judges' responses by gender

<table>
<thead>
<tr>
<th>BASE DATA</th>
<th>1-2</th>
<th>2-3</th>
<th>3-4</th>
<th>4-5</th>
<th>5-6</th>
<th>6-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female - Without parent (F)</td>
<td>134</td>
<td>128</td>
<td>153</td>
<td>226</td>
<td>205</td>
<td>312</td>
</tr>
<tr>
<td>Female - Without parent (%)</td>
<td>11</td>
<td>11</td>
<td>16</td>
<td>19</td>
<td>17</td>
<td>25</td>
</tr>
<tr>
<td>Female - With parent (F)</td>
<td>20</td>
<td>50</td>
<td>136</td>
<td>223</td>
<td>290</td>
<td>438</td>
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<tr>
<td>Female - With parent (%)</td>
<td>2</td>
<td>5</td>
<td>12</td>
<td>20</td>
<td>25</td>
<td>37</td>
</tr>
<tr>
<td>Male - Without parent (M)</td>
<td>405</td>
<td>346</td>
<td>303</td>
<td>474</td>
<td>469</td>
<td>764</td>
</tr>
<tr>
<td>Male - Without parent (%)</td>
<td>14</td>
<td>12</td>
<td>13</td>
<td>17</td>
<td>16</td>
<td>27</td>
</tr>
<tr>
<td>Male - With parent (M)</td>
<td>144</td>
<td>272</td>
<td>376</td>
<td>512</td>
<td>467</td>
<td>1067</td>
</tr>
<tr>
<td>Male - With parent (%)</td>
<td>5</td>
<td>9</td>
<td>13</td>
<td>18</td>
<td>17</td>
<td>37</td>
</tr>
</tbody>
</table>

Decreasing level of upset
Judges' responses by anaesthesia method - 1

<table>
<thead>
<tr>
<th>MANN-WHITNEY</th>
<th>BASE DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>Score Interval</td>
</tr>
<tr>
<td>-10.553</td>
<td>Intravenous - Without parent</td>
</tr>
<tr>
<td></td>
<td>Intravenous - Without parent (%)</td>
</tr>
<tr>
<td></td>
<td>Intravenous - With parent</td>
</tr>
<tr>
<td></td>
<td>Intravenous - With parent (%)</td>
</tr>
</tbody>
</table>

Judgements of Children Receiving Intravenous Induction of Anaesthesia
### Judges' responses by anaesthesia method - 2

#### MANN-WHITNEY

<table>
<thead>
<tr>
<th>Z</th>
<th>2-tailed probability</th>
</tr>
</thead>
<tbody>
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<td>-16.389</td>
<td>&lt;0.001</td>
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</table>

#### BASE DATA

<table>
<thead>
<tr>
<th>Score Interval</th>
<th>1-2</th>
<th>2-3</th>
<th>3-4</th>
<th>4-5</th>
<th>5-6</th>
<th>6-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaseous - Without parent</td>
<td>162</td>
<td>203</td>
<td>203</td>
<td>225</td>
<td>182</td>
<td>266</td>
</tr>
<tr>
<td>Gaseous - Without parent (%)</td>
<td>15</td>
<td>16</td>
<td>16</td>
<td>18</td>
<td>14</td>
<td>21</td>
</tr>
<tr>
<td>Gaseous - With parent</td>
<td>30</td>
<td>113</td>
<td>147</td>
<td>199</td>
<td>221</td>
<td>561</td>
</tr>
<tr>
<td>Gaseous - With parent (%)</td>
<td>2</td>
<td>9</td>
<td>12</td>
<td>16</td>
<td>17</td>
<td>44</td>
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</tbody>
</table>

### Judgements of Children Receiving Gaseous Induction of Anaesthesia

![Bar chart showing judgements by score interval and presence of parent](chart.png)
Summary of judges' responses by anaesthesia method

<table>
<thead>
<tr>
<th>Score Interval</th>
<th>1-2</th>
<th>2-3</th>
<th>3-4</th>
<th>4-5</th>
<th>5-6</th>
<th>6-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaseous - Without parent</td>
<td>192</td>
<td>203</td>
<td>203</td>
<td>225</td>
<td>182</td>
<td>266</td>
</tr>
<tr>
<td>Gaseous - With parent</td>
<td>15</td>
<td>16</td>
<td>16</td>
<td>18</td>
<td>14</td>
<td>21</td>
</tr>
<tr>
<td>Intravenous - Without parent</td>
<td>30</td>
<td>113</td>
<td>147</td>
<td>199</td>
<td>221</td>
<td>561</td>
</tr>
<tr>
<td>Intravenous - With parent</td>
<td>2</td>
<td>9</td>
<td>12</td>
<td>16</td>
<td>17</td>
<td>44</td>
</tr>
<tr>
<td>Intravenous - Without parent</td>
<td>348</td>
<td>273</td>
<td>373</td>
<td>475</td>
<td>492</td>
<td>810</td>
</tr>
<tr>
<td>Intravenous - With parent</td>
<td>13</td>
<td>10</td>
<td>13</td>
<td>17</td>
<td>18</td>
<td>26</td>
</tr>
<tr>
<td>Intravenous - Without parent</td>
<td>126</td>
<td>208</td>
<td>340</td>
<td>531</td>
<td>536</td>
<td>1026</td>
</tr>
<tr>
<td>Intravenous - With parent</td>
<td>5</td>
<td>8</td>
<td>12</td>
<td>19</td>
<td>19</td>
<td>37</td>
</tr>
</tbody>
</table>

Decreasing level of upset:

- Gaseous - Without parent
- Gaseous - With parent
- Intravenous - Without parent
- Intravenous - With parent
Appendix I - 30

Judges' responses by level of information provided - 1

<table>
<thead>
<tr>
<th>MANN-WHITNEY</th>
<th>BASE DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>Score Interval</td>
</tr>
<tr>
<td>-9.110</td>
<td>High Info - Without parent</td>
</tr>
<tr>
<td>&lt;0.001</td>
<td>High Info - Without parent</td>
</tr>
<tr>
<td></td>
<td>High Info - With parent</td>
</tr>
<tr>
<td></td>
<td>High Info - With parent</td>
</tr>
</tbody>
</table>

Judgements of Children whose Parents Received High Levels of Information

- High Info - Without parent
- High Info - With parent

Score Interval (Decreasing level of upset →)
### Judges' responses by level of information provided - 2

<table>
<thead>
<tr>
<th>MANN-WHITNEY</th>
<th>BASE DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Score Interval</td>
</tr>
<tr>
<td></td>
<td>Low Info - Without parent</td>
</tr>
<tr>
<td>Z</td>
<td>Low Info - With parent</td>
</tr>
<tr>
<td>-10.513</td>
<td>Low Info - With parent</td>
</tr>
<tr>
<td>2-tailed</td>
<td>Low Info - With parent</td>
</tr>
<tr>
<td>probability</td>
<td>Low Info - With parent</td>
</tr>
<tr>
<td>&lt;0.001</td>
<td>Low Info - With parent</td>
</tr>
</tbody>
</table>

#### Judgements of
Children whose Parents
Received Low Levels of Information

<table>
<thead>
<tr>
<th>Score Interval</th>
<th>1-2</th>
<th>2-3</th>
<th>3-4</th>
<th>4-5</th>
<th>5-6</th>
<th>6-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Info - Without parent</td>
<td>16</td>
<td>13</td>
<td>13</td>
<td>17</td>
<td>16</td>
<td>24</td>
</tr>
<tr>
<td>Low Info - With parent</td>
<td>8</td>
<td>13</td>
<td>13</td>
<td>18</td>
<td>16</td>
<td>36</td>
</tr>
<tr>
<td>Low Info - Without parent</td>
<td>91</td>
<td>220</td>
<td>336</td>
<td>472</td>
<td>475</td>
<td>1024</td>
</tr>
<tr>
<td>Low Info - With parent</td>
<td>3</td>
<td>8</td>
<td>13</td>
<td>16</td>
<td>16</td>
<td>36</td>
</tr>
</tbody>
</table>

- Low Info - Without parent
- Low Info - With parent
Summary of judges' responses by level of information provided

<table>
<thead>
<tr>
<th>BASE DATA</th>
<th>Score Interval</th>
<th>1-2</th>
<th>2-3</th>
<th>3-4</th>
<th>4-5</th>
<th>5-6</th>
<th>6-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Info - Without parent (#)</td>
<td>367 296 203 534 534 548</td>
<td>16 13 13 17 16 24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Info - Without parent (%)</td>
<td>16 13 13 17 16 24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Info - With parent (#)</td>
<td>91 220 336 472 475 1024</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Low Info - With parent (%)</td>
<td>3 8 13 18 18 36</td>
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<td></td>
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<td>High Info - Without parent (#)</td>
<td>173 178 316 320 528</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Info - With parent (#)</td>
<td>111 151 258 256 565</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Info - With parent (%)</td>
<td>5 7 11 18 20 40</td>
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All responses by child

<table>
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<tr>
<th>MANN-WHITNEY</th>
<th>BASE DATA</th>
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<tr>
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<td>Z-tailed probability</td>
<td>All Scores - Without parent</td>
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<tr>
<td></td>
<td>All Scores - Without parent (%)</td>
</tr>
<tr>
<td></td>
<td>All Scores - With parent (§)</td>
</tr>
<tr>
<td></td>
<td>All Scores - With parent (%)</td>
</tr>
</tbody>
</table>

Mean of all Judgements of all Children

![Graph showing mean of all judgments of all children with score intervals from 1-2 to 6-7, with bars indicating the percentage of responses in each interval with and without a parent present.](image)
Induction Times

- Without Parent
- With Parent

- Gaseous
  - 03:05
  - 02:58

- Intravenous
  - 02:40
  - 02:51

Induction Times (Mins:Secs)
MANN-WHITNEY

<table>
<thead>
<tr>
<th>Z</th>
<th>2-tailed probability</th>
</tr>
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<tbody>
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<td>0.145</td>
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Frequency Range of Spielberger State Levels

- □ Accompanying Parents (Child's mean score <3.5)
- ■ Accompanying Parents (Child's mean score >3.5)
Frequency Range of Spielberger Trait Levels

- ◻ Accompanying Parents (Child's mean score <3.5)
- ■ Accompanying Parents (Child's mean score >3.5)
Parental Spielberger State values

MANN-WHITNEY

<table>
<thead>
<tr>
<th>Z</th>
<th>2-tailed probability</th>
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<tbody>
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<td>-1.607</td>
<td>0.108</td>
</tr>
</tbody>
</table>

Frequency Range of Spielberger State Levels

- Unaccompanying Parents
- Accompanying Parents

Number of Parents / State Value

Spelberger State Value

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71
### Parental Spielberger Trait values

<table>
<thead>
<tr>
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#### Frequency Range of Spielberger Trait Levels

- **Unaccompanying Parents**
- **Accompanying Parents**

![Frequency Range of Spielberger Trait Levels](image-url)
Chosen children data - Without parents

<table>
<thead>
<tr>
<th>STUDY NO.</th>
<th>Age Group</th>
<th>Gender</th>
<th>Induction</th>
<th>Information</th>
<th>Parental State</th>
<th>Parental Trait</th>
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<tbody>
<tr>
<td></td>
<td>(0 = &lt;2yrs)</td>
<td>(0 = Female)</td>
<td>(0 = Gas)</td>
<td>(0 = Low)</td>
<td>(1 = High)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1 = 2-5yrs)</td>
<td>(1 = Male)</td>
<td>(1 = I/V)</td>
<td>(0 =)</td>
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<tr>
<td>4</td>
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<td>1</td>
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<td>0</td>
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<td>0</td>
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<td>0</td>
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<tr>
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<td>0</td>
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<td>27</td>
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<td>1</td>
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<td>0</td>
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</tbody>
</table>
Appendix II

Sample Questionnaires used in the evaluation of the preadmission programme, statistical profiles of the participating groups, facial recognition scales and aspects of behaviour exhibited by children following discharge
Telephone Consent / Interview

Name
Age
Address

Sex
Hello my name is Cheryl Venn and I work in the children's unit at Southampton General Hospital.

1) May I ask if you have received details about your child's forthcoming admission to hospital? Yes No

2) Did this information include a yellow piece of paper entitled "Let's get together"? Yes No

(It was inviting you and your children to come along to the Saturday Morning Club)

3) Have you read the invitation? Yes No

If Yes, did it provide you with enough information about the club? Yes No

If No, how could the invitation be improved?

4) Will you be coming along to the Saturday Morning Club? Yes No

(If they give an excuse record it)

(If they don't give an excuse then carry on with questionnaire)
Thank you very much for answering those few questions.

Would you like to participate further in this study?

YES

I would like to ask you some more questions when you

1) Visit the Saturday Morning Club
2) On the day of your child's admission and
3) One week after discharge.

Thank you very much. I will see you on Saturday.

NO

Could I ask you a few questions to try and make some improvements in the Saturday Morning Club?
First of all I would like to ask you some questions about your child.

5) What is your child's age?  
   years  
   months

6) Is this your child's first hospital admission?  
   Yes  
   No

7) Have you any other children?  
   Yes  
   No

If Yes how many others do you have?  
   boys  
   girls
Appendix II

Now I would like to ask you some questions about you and your partner.

B) Would you be willing to tell me your respective ages

a) You
15-----20
21-----25
26-----30
31-----35
36 or over.
b) Your Partner
15-----20
21-----25
26-----30
31-----35
36 or over.

9) Have either you or your partner been admitted to hospital for any reason including childbirth?

Yes
No

10) Could you give me any details about why you or your partner were admitted?

11) How would you describe your experience of hospital?

Very bad
Bad
Good
Very good
12) Do you work at the moment?
   Yes
   No

13) Does your partner work at the moment?
   Yes
   No

14) What kind of work does he do?

15) Do either you or your partner work on Saturdays?
   Yes
   No

16) If the club was on Saturday afternoon would you find it easier to attend?
   Yes
   No

17) If the club was held on any other day would you find it easier to attend?
   Yes
   No

18) Do you as a family have access to a car?
   Yes
   No

19) If you had been able to attend the club how would you have travelled?
   Walked
   Train
   Car
   Taxi
   Other
20) Has anyone other than you spoken to your child about his forthcoming hospital admission?

Partner
G.P.
Health Visitor
Friend/Relation
Community Nurse
Other

21) Do you feel that it is important that your child is prepared for hospital?
Yes
No

22) What do you think children should be told about coming into hospital?

How soon before your child is admitted to hospital do you feel it is necessary to start to explain to him about his forthcoming hospital admission?

2 weeks before
1 week before
3 days before
On the day
Not at all
Dear Parent/Guardian,

Please answer this questionnaire as far as you are able.

For each question, please tick only one box.

Where you are asked to give a comment, or any other information, please do so in the space provided.

If you have any queries please do not hesitate to ask Cheryl Venn, who will be pleased to assist you.

All the information in this questionnaire will be treated as strictly confidential, and will be seen only by members of the research team.

Thank you for your co-operation.

Cheryl Venn.
First of all I would be grateful for some personal details about your child.

1) Your child's age
   - Years: 
   - Months: 

2) Your child's sex
   - Male: 
   - Female: 

3) Does your child attend school
   - Yes: 
   - No: 

   If you answered yes to the above question, please give the name and address of the school.

4) Has your child ever been admitted to hospital before?
   - Yes: 
   - No: 

   If you answered yes to the above question, please state when, and for what reason.

5) Have you any other children
   - Yes: 
   - No: 

   If yes, have any of your child's brothers or sisters been admitted to hospital before?
   - Yes: 
   - No: 

PAGE 3
Now I would like to ask a few questions about you and your partner.

6) Have you or your partner ever been admitted to hospital before, for any reason, including childbirth
   - Yes
   - No

7) How would you describe your experience of hospital
   - Very distressing
   - Distress
   - Good
   - Very good

8) Has anyone other than yourself spoken to your child about his forthcoming hospital admission
   - Yes
   - No
   - E.P.
   - Teacher
   - Health Visitor
   - Friend/relative
   - Community Nurse
   - Other
   - If yes, who was this?
   - If other, who was this?
9) Did you feel that this explanation was of use to your child? yes no

If no, why was this so, and what would have been more appropriate?

10) Has your experience of hospitals helped you to prepare your child for his forthcoming admission? yes no not applicable

11) How do you feel about your child coming into hospital? very calm calm anxious very anxious

12) Has your child participated in any organised school or nursery based hospital play sessions? yes no

if yes, please give details.
13) Have you explained to your child about his forthcoming hospital admission?
   Yes  | No
   ___  |   

   If no, please go to question 16

14) Who spoke to your child
   You  | Your partner | Both
   ___  |       |   

15) Did you supplement this verbal explanation with any other method of explanation?
   Yes  | No
   ___  |   

   If yes, what methods did you use?
   Drawings | Books | Doll / model | Other
   ___  |   |       |   

   If other, please give details.
16) Did you find giving an explanation to your child:

- very easy
- easy
- difficult
- very difficult

17) Did you feel that you were sufficiently informed yourself to prepare your child for this hospital admission?

- yes
- no

If no, what do you feel could be done to prepare parents in order that they can then feel confident enough to prepare their children.

Please comment.

18) Did your child look at the children’s day surgery booklet?

- yes
- no

If yes, with whom did the child look through the books?

- you
- partner
- you / partner
- alone

19) Did your child use the colouring book at all?

- yes
- no
20: Are there any alterations that you feel could be made to the booklet?  
   If yes, please give details.  

<table>
<thead>
<tr>
<th>Study Number</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>yes</td>
<td>no</td>
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</table>

21: Prior to coming here today, did you know that there were books available that explain all about coming into hospital and having an operation?  
   If yes, do you think that the books helped:  

<table>
<thead>
<tr>
<th>Study Number</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Study Number</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a lot</td>
<td>slightly</td>
<td>moderately</td>
</tr>
</tbody>
</table>

PAGE 6
22) Which books did you find most helpful.
   Please comment below.

23) Where did you get the books from?

24) If you bought a book or books:

   Were they expensive?

   Were they easy to find?

Thank you for your co-operation.
Dear Parent/Guardian,

Please answer this questionnaire as far as you are able.

For each question, please tick only one box.

Where you are asked to give a comment, or any other information, please do so in the space provided.

If you have any queries please do not hesitate to ask Cheryl Venn, who will be pleased to assist you.

All the information in this questionnaire will be treated as strictly confidential, and will be seen only by members of the research team.

Thank you for your co-operation.

Cheryl Venn.
1) What is your child's age?

2) Is this your child's first hospital admission?

3) Do you or your partner have any other children?

4) Did you bring any of your child's brothers or sisters to the club today?

   If yes, could you please give details of their ages and sex.

5) Being able to bring my child's brothers and sisters made it easier for me to attend

   strongly agree
   agree
   disagree
   strongly disagree

6) Do you as a family have access to a car?

7) How did you travel to the club today?

   walked
   train
   car
   taxi
   bus
   bicycle
I would be grateful for some details about you and your partner.

8) Please indicate your respective ages.
   a) You
      15-----20
      21-----25
      26-----30
      31-----35
      36 or over.
   b) Your Partner
      15-----20
      21-----25
      26-----30
      31-----35
      36 or over.

9) Do you work at the moment?
   Yes
   No

10) Does your partner work at the moment
    Yes
    No

11) What kind of work does your partner do?

12) Do either you or your partner work on Saturdays?
    Yes
    No
13) Did either you or your partner take time off to come here today?  
14) If yes, who took time off?  
15) The invitation and guide for parents you received in the post about the Saturday Morning Club made it clear what the programme involved.  
16) Your child's visit to the Saturday Morning Club has been useful in preparing him/her for his forthcoming hospital admission.  
17) Who benefited most from coming here today?  
18) Did your child play with the toys provided?
19) Please indicate which toys your child played with the most.

<table>
<thead>
<tr>
<th>General ward toys</th>
<th>Doctors sets</th>
<th>Hospital uniforms</th>
<th>Mobil play figures</th>
<th>Puzzles</th>
<th>Books</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

20) Was the play session well organized?

- Yes
- No

21) The slide show and talk was very informative.

- Strongly agree
- Agree
- Disagree
- Strongly disagree

22) The visit to the operating theatre was very useful.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
Dear parent

Please answer the questionnaire as far as you are able by placing a tick in the appropriate box. Please answer all the questions.

If you have any queries please do not hesitate to ask Cheryl Venn who will be pleased to assist you.

All the information in this booklet will be treated as strictly confidential, and will be seen only by members of the research team.

Thank you for your co-operation.

Cheryl Venn
<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My child was anxious about coming into hospital today.</td>
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<td>2. I have felt quite calm throughout the day.</td>
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<td>3. Any discomfort my child had following his operation was dealt with quickly and effectively.</td>
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<tr>
<td>4. My child settled well into the ward.</td>
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<tr>
<td>5. The play facilities on the day unit are satisfactory.</td>
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<tr>
<td>6. My child played with the toys provided on the ward.</td>
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<tr>
<td>7. My child and I were made to feel welcome when we arrived here today.</td>
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<tr>
<td>8. Throughout the day I have received information/instruction from each nurse caring for my child.</td>
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<tr>
<td>9. On arrival at the day Unit, I received adequate information about what would happen to my child whilst he was a patient on day ward.</td>
<td></td>
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<tr>
<td>10. I received no information about hospital rules and procedures that might have applied to my family and me.</td>
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<tr>
<td>11. The nurses always responded to my requests promptly.</td>
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<tr>
<td>12. The nurses and I discussed how my child's operation would affect me and my family.</td>
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<tr>
<td>13. The nurses always asked if I understood what the doctors told me.</td>
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<td></td>
<td>Questionnaire 4</td>
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<td>-------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>16.</td>
<td>The nurses who looked after my child today have asked me what I would like to know about my child's operation.</td>
<td></td>
<td></td>
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<tr>
<td>15.</td>
<td>I feel confident in the nurses caring for my child.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>I feel confident that I can manage my child's care at home after discharge.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>The nurses asked me to answer a lot of the same questions about my child many times.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>18.</td>
<td>Explanations given to my child by the nurses were easy for him/her to understand.</td>
<td></td>
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<tr>
<td>19.</td>
<td>The nurses shared genuine interest and concern for my child.</td>
<td></td>
<td></td>
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<tr>
<td>20.</td>
<td>I felt comfortable asking the nurses any questions.</td>
<td></td>
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</tbody>
</table>
Dear Parent/Guardian,

Please answer this questionnaire as far as you are able.

For each question, please tick only one box.

Where you are asked to give a comment, or any other information, please do so in the space provided.

When you have completed the questionnaire, please place it in the stamped addressed envelope provided, and post it back to me.

All the information in this questionnaire will be treated as strictly confidential, and will be seen only by members of the research team.

Thank you for your co-operation.

Cheryl Venn.
1) When I left the day unit I had a good idea of how my child would cope on the first day after his/her operation.

2) My child was how I expected him/her to be on the first day after the operation.

3) Since my child's operation I have been concerned about him/her.

4) If you agree with the above statement, in what way were you concerned about your child?

Please comment below.
6) If you disagree with the above statement, who have you contacted?
Please comment below.

7) Did your child vomit during the 24 hours after returning home?
	Yes
	No

8) Did your child’s wound bleed during the 24 hours after returning home?
	Yes
	No

9) Did your child have any difficulty passing water during the first 24 hours after returning home?
	Yes
	No

Page 3
10) How much pain do you think your child was in when you got home from hospital?

<table>
<thead>
<tr>
<th>QUESTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very little</td>
</tr>
<tr>
<td>A little</td>
</tr>
<tr>
<td>A lot</td>
</tr>
<tr>
<td>A great deal</td>
</tr>
</tbody>
</table>

11) How much pain do you think he/she had during the first night after the operation?

<table>
<thead>
<tr>
<th>QUESTS</th>
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</thead>
<tbody>
<tr>
<td>Very little</td>
</tr>
<tr>
<td>A little</td>
</tr>
<tr>
<td>A lot</td>
</tr>
<tr>
<td>A great deal</td>
</tr>
</tbody>
</table>

12) How much pain do you think he/she had on the day after the operation?

<table>
<thead>
<tr>
<th>QUESTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A great deal</td>
</tr>
<tr>
<td>A lot</td>
</tr>
<tr>
<td>A little</td>
</tr>
<tr>
<td>Very little</td>
</tr>
</tbody>
</table>

13) Did you give your child any pain killer (e.g. Calpol/Disprol) during the 24 hours after returning home?

<p>| |</p>
<table>
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</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

14) If you answered yes to the above question, please give details of how many times you gave painkillers to your child.
15) The night after the operation, my child had his/her usual night's sleep.  
Strongly Agree | Agree | Disagree | Strongly Disagree

16) Since return home, my child has been upset.  
Strongly Agree | Agree | Disagree | Strongly Disagree

17) Since the operation, my child eats less.  
Strongly Agree | Agree | Disagree | Strongly Disagree

18) Since return home, have you spoken to your family doctor about your child's operation?  
Yes | No

19) Did a community nurse visit you at home on the day after the operation?  
Yes | No
SELF-EVALUATION QUESTIONNAIRE

Developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

1. I feel calm
2. I feel secure
3. I am tense
4. I am regretful
5. I feel at ease
6. I feel upset
7. I am presently worrying over possible misfortunes
8. I feel rested
9. I feel anxious
10. I feel comfortable
11. I feel self-confident
12. I feel nervous
13. I am jittery
14. I feel "high strung"
15. I am relaxed
16. I feel content
17. I am worried
18. I feel over-excited and "rattled"
19. I feel joyful
20. I feel pleasant
DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement, but give the answer which seems to describe how you generally feel.

<table>
<thead>
<tr>
<th>Statement</th>
<th>NEVER</th>
<th>SOMETIMES</th>
<th>ALMOST SOMETIMES</th>
<th>ALMOST NEVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. I feel pleasant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. I tire quickly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. I feel like crying</td>
<td></td>
<td></td>
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<tr>
<td>24. I wish I could be as happy as others seem to be</td>
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<td></td>
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<tr>
<td>25. I am losing out on things because I can't make up my mind soon enough</td>
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<td></td>
<td></td>
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<tr>
<td>26. I feel rested</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>27. I am “calm, cool and collected”</td>
<td></td>
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<td></td>
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<tr>
<td>28. I feel that difficulties are piling up so that I cannot overcome them</td>
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<tr>
<td>29. I worry too much over something that really doesn’t matter</td>
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<tr>
<td>30. I am happy</td>
<td></td>
<td></td>
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<tr>
<td>31. I am inclined to take things hard</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>32. I lack self-confidence</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>33. I feel secure</td>
<td></td>
<td></td>
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<tr>
<td>34. I try to avoid facing a crisis or difficulty</td>
<td></td>
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<tr>
<td>35. I feel blue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36. I am content</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>37. Some unimportant thought runs through my mind and bothers me</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38. I take disappointments so keenly that I can't put them out of my mind</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39. I am a steady person</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>40. I get in a state of tension or turmoil as I think over my recent concerns and interests</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Dear parent/guardian

Please answer the enclosed questionnaire as far as you are able by placing a tick in the appropriate box. If there is a question which is not applicable please tick the box headed - 'same as before' - When you have completed the questionnaire please place it in the stamped addressed envelope supplied and return it to me.

The information in this questionnaire will be treated as strictly confidential and will be seen only by members of the research team.

Thank you for your co-operation.

Cheryl Venn
<table>
<thead>
<tr>
<th></th>
<th>Much less than before</th>
<th>Less than before</th>
<th>Same as before</th>
<th>More than before</th>
<th>Much more than before</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Does your child make a fuss about going to bed at night?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Does your child make a fuss about eating?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Does your child spend time just sitting or lying and doing nothing?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Does your child need a dummy?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Does your child seem to be afraid of leaving the house with you?</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6.</td>
<td>Is your child interested in what goes on around him (or her)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Does your child wet the bed at night?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Does your child bite his (or her) finger-nails?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Does your child get upset when you leave him (or her) alone for a few minutes?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Does your child need a lot of help doing things?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Is it difficult to get your child interested in doing things (like playing games with toys and so on)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Does your child seem to avoid or be afraid of new things?</td>
<td></td>
<td></td>
<td></td>
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<td>13.</td>
<td>Does your child have difficulty making up his (or her) mind?</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>
14. Does your child have temper tantrums? 
15. Is it difficult to get your child to talk to you? 
16. Does your child get on well with brothers or sisters? 
17. Does your child seem to get upset when someone mentions doctors or hospitals? 
18. Does your child follow you everywhere about the house? 
19. Does your child spend time trying to get or hold your attention? 
20. Is your child afraid of the dark? 
21. Does your child have bad dreams at night or wake up and cry? 
22. Is your child irregular in his (or her) bowel movements? 
23. Does your child have trouble getting to sleep at night? 
24. Does your child seem to be shy or afraid around strangers? 
25. Does your child have a poor appetite? 
26. Does your child tend to disobey you? 
27. Does your child break toys or other objects? 
28. Does your child suck his (or her) fingers or thumb?
Statistical Profiles
### SEX OF CHILDREN

<table>
<thead>
<tr>
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### SCHOOL ATTENDANCE

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### Appendix II

**Hospitalised Before**

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</table>

60 46 106

A significantly smaller proportion of the experimental group were in hospital for the first time.
WHO TALKED TO THE CHILD ABOUT HIS/HER FORTHCOMING HOSPITAL ADMISSION?
DID YOU FEEL THE EXPLANATION WAS OF ANY USE TO THE CHILD?

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48 28 76

HOW DO YOU FEEL ABOUT YOUR CHILD COMING INTO HOSPITAL?

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<td>2</td>
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<tr>
<td><strong>Total</strong></td>
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THE DISTRIBUTION WAS EVENLY SPREAD ACROSS THE EXPERIMENTAL AND CONTROL GROUPS
HAS YOUR CHILD PARTICIPATED IN ANY ORGANISED PLAY SESSIONS?

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<td>NO</td>
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<td>42</td>
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THE DISTRIBUTION WAS EVENLY SPREAD ACROSS THE EXPERIMENTAL AND CONTROL GROUPS
DID YOU KNOW THAT BOOKS WERE AVAILABLE THAT EXPLAIN ABOUT COMING INTO HOSPITAL AND HAVING AN OPERATION?

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<th>CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>46</td>
<td>106</td>
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SIGNIFICANTLY MORE OF THE EXPERIMENTAL GROUP KNEW THAT BOOKS WERE AVAILABLE

DID PARENTS BUY ANY SUCH BOOKS?

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<table>
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<th>EXPERIMENTAL</th>
<th>CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>46</td>
<td>106</td>
</tr>
</tbody>
</table>

SIGNIFICANTLY MORE OF THE EXPERIMENTAL GROUP BOUGHT BOOKS
DID YOUR CHILD LOOK AT THE CHILDREN'S DAY SURGERY BOOKLIST?

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<td>29</td>
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<tr>
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<td>16</td>
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59  45  104

OVER 30% OF THE CHILDREN DID NOT
DID YOUR CHILD USE THE COLOURING BOOK AT ALL?

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<th>CONTROL</th>
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</thead>
<tbody>
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<td>YES</td>
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<tr>
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</tbody>
</table>

60% OF THE CHILDREN DID NOT
(YET 90% DO NOT THINK THE BOOK NEEDS ALTERATION)

ARE THERE ANY ALTERATIONS THAT YOU FEEL COULD BE MADE TO THE BOOKLET?

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</thead>
<tbody>
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54 37 100
Family Chart

Number of families invited and attending

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<th>Invited</th>
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</tr>
<tr>
<td>18</td>
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</tbody>
</table>
Questionnaire Three

- 80% brought brothers or sisters to the club; of these 90% felt that this made it easier for them to attend.

- All had cars.

- All felt that the club was useful in preparing the child, and that the slide show was very informative.
Appendix II

WORTH FURTHER INVESTIGATION?

THEATRE VISIT USEFUL?
DISCUSSED OPERATION WITH NURSES

<table>
<thead>
<tr>
<th>Experimental</th>
<th>Control</th>
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</thead>
<tbody>
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<tr>
<td>NO</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>49</td>
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</table>

OVER 40% OF PARENTS DID NOT DISCUSS HOW THE CHILD'S OPERATION WOULD AFFECT THEM AND THEIR FAMILY

NURSES ASKED ME WHAT I WOULD LIKE TO KNOW ABOUT MY CHILD'S OPERATION

<table>
<thead>
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<th>Experimental</th>
<th>Control</th>
</tr>
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<tbody>
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<td>YES</td>
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<td>NO</td>
<td>15</td>
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<tr>
<td></td>
<td>51</td>
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OVER 30% OF PARENTS WERE NOT ASKED
RECEIVED INSUFFICIENT INFORMATION ABOUT HOSPITAL PROCEDURES

<table>
<thead>
<tr>
<th></th>
<th>EXPERIMENTAL</th>
<th>CONTROL</th>
</tr>
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<tbody>
<tr>
<td>AGREE</td>
<td>8</td>
<td>19</td>
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<tr>
<td>DISAGREE</td>
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<td>25</td>
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<tr>
<td></td>
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A SIGNIFICANTLY SMALLER PROPORTION OF THE EXPERIMENTAL GROUP AGREED
## Stress Urine Cortisol Study

<table>
<thead>
<tr>
<th>Study No.</th>
<th>Creatinine</th>
<th>Cortisol</th>
<th>Cortisol/Creatinine</th>
<th>Study No.</th>
<th>Creatinine</th>
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Facial Recognition Scales
Appendix II

EXPERIMENTAL AND CONTROL GROUPS COMBINED

FREQUENCY

VERY HAPPY  HAPPY  NEUTRAL  UNHAPPY  VERY UNHAPPY

FACE SELECTED

- PRE-OPERATION
- POST-OPERATION
- BEFORE DISCHARGE
- AT HOME
Face Rating Scale

[Image of a face rating scale with five faces expressing different emotions]
Cut out the faces.
Face Rating Scale
Aspects of Behaviour Exhibited by Children Following Discharge
The diagram shows the frequency of disobedient behavior compared to before:

- **Much Less Than Before**
- **Less Than Before**
- **Same As Before**
- **More Than Before**

The y-axis represents the frequency of disobedient behavior, with the x-axis indicating the number of cases.
UPSET BY MENTION OF DOCTORS OR HOSPITALS

- MUCH LESS THAN BEFORE
- LESS THAN BEFORE
- SAME AS BEFORE
- MORE THAN BEFORE
- MUCH MORE THAN BEFORE
FREQUENCY

BAD DREAMS

- Much less than before
- Less than before
- Same as before
- More than before
- Much more than before
Appendix III
Copy of anaesthetic survey questionnaire
To the Members of the Association of Paediatric Anaesthetists.

re: Survey of Attitudes to Parental Presence During Induction of Anaesthesia

Please forgive the anonymous introduction to this letter. Alan Glasper is undertaking a research project into paediatric anaesthetic practices in order to determine how much 'stress' is placed on the children and, in particular, to see if having a parent coming to theatre helps reduce this. You will no doubt remember all the correspondence in the B.M.J. last year.

Part of the project is to find out current practices and attitudes - hence the enclosed questionnaire. We would be very grateful if you could spare the time to fill it in. We hope also to be able to inform you of the results.

Thank you for your help.

Yours sincerely,

John Norman
Dear Member of the Association of British Paediatric Anaesthetists,

I am engaged in a research project evaluating the effects of parental presence at the induction of anaesthesia. I would be most appreciative if you could spare the time to complete the enclosed questionnaire. A stamped addressed envelope is enclosed for your reply.

Thank you in advance for your co-operation.

Yours sincerely,

E. A. Clasper
Lecturer in Paediatric Nursing
CONFIDENTIAL

ANAESTHETIC QUESTIONNAIRE

1. Parents should accompany their children to the anaesthetic room and stay with them during induction of anaesthesia whenever possible. Do you:
   (a) Strongly agree [ ]
   (b) Agree [ ]
   (c) Uncertain [ ]
   (d) Disagree [ ]
   (e) Strongly disagree [ ]

2. Is parental presence encouraged at the induction of anaesthesia in one or more of the following areas:
   (a) Day Surgery Yes / No
   (b) Minor Surgery (inpatient) Yes / No
   (c) Elective Surgery (inpatient) Yes / No
   (d) Emergency Surgery Yes / No

3. Is it the policy for your unit to give parents the choice of accompanying their children to the anaesthetic room and to remain with them during induction?
   Yes / No

4. Does your unit have a specific written policy regarding the presence of parents at the induction of anaesthesia?
   Yes / No
5. Where such a policy exists, is its implementation at the discretion of:

(a) The Ward Sister [ ]
(b) The Theatre Sister [ ]
(c) The Anaesthetist [ ]
(d) The Surgeon [ ]
(e) Other - please specify [ ]

6. Where unit policy allows parental presence at the induction of anaesthesia, are they informed?

(a) Prior to admission [ ]
(b) On admission [ ]
(c) On request only [ ]

7. Where parents accompany their children to the anaesthetic room, do they:

(a) Change clothing [ ]
(b) Put on over-clothes [ ]
(c) Wear a mask [ ]
(d) Wear headgear [ ]
(e) Wear overshoes [ ]
(f) Not change [ ]

8. The presence of parents in the anaesthetic room represents an infection hazard. Do you:

(a) Strongly agree [ ]
(b) Agree [ ]
(c) Uncertain [ ]
(d) Disagree [ ]
(e) Strongly disagree [ ]
Appendix III - 6

9. Where parental presence at the induction of anaesthesia is accepted is it policy to allow
   (a) One parent only [ ]
   (b) Both parents [ ]

10. The induction of anaesthesia in children where parents are present is generally
    (a) Easier [ ]
    (b) More difficult [ ]
    (c) No different [ ]

11. Which of the following age groups are allowed to have their parents present during the induction of anaesthesia?
    (a) 0 - 2 years [ ]
    (b) 2 - 5 years [ ]
    (c) 5 - 7 years [ ]
    (d) Others - please specify ...........................................

12. Where parents are allowed to accompany their children to the anaesthetic room and remain with them during induction, do all paediatric wards follow the same policy?
    Yes / No
    i Orthopaedics Yes / No
    ii Ophthalmics Yes / No
    iii E.N.T. Yes / No
    iv Cardiothoracic Yes / No
    v General Surgery Yes / No
    vi Neonatal Surgery Yes / No
    vii Day Surgery Yes / No
    viii Others - please specify ...........................................
13. In your opinion, does the presence of parents at the induction of anaesthesia lead to:

(a) A reduction of child stress during induction [ ]
(b) An increase of child stress during induction [ ]
(c) No alteration of child stress during induction [ ]

14. Where parents accompany their child to the anaesthetic room, does a member of the theatre staff take responsibility for their welfare?

Yes / No

If Yes, please indicate type of staff:

(a) Trained Nurse [ ]
(b) Student Nurse [ ]
(c) Anaesthetist [ ]
(d) Auxiliary Nurse [ ]
(e) Operating Department Assistant (ODA) [ ]
(f) Others - please specify [ ]

15. Children are less anxious during the induction of anaesthesia when accompanied by a parent. Do you:

(a) Strongly agree [ ]
(b) Agree [ ]
(c) Uncertain [ ]
(d) Disagree [ ]
(e) Strongly disagree [ ]
16. Where children are accompanied to the anaesthetic room by a parent, are the children
   (a) Premedicated [ ]
   (b) Unpremedicated [ ]
   (c) No set policy [ ]

17. Where children are accompanied to the anaesthetic room by a parent, premedication is generally unnecessary. Do you:
   (a) Strongly agree [ ]
   (b) Agree [ ]
   (c) Uncertain [ ]
   (d) Disagree [ ]
   (e) Strongly disagree [ ]

18. Premedication is administered to children undergoing anaesthesia via
   (a) Injection [ ]
   (b) Oral route [ ]
   (c) No set policy [ ]

19. Anaesthesia in children is induced in your department by
   (a) Inhalation techniques [ ]
   (b) Intravenous injection [ ]
   (c) Other .........................................................

20. Where the intravenous method of induction is used, do you generally use a local anaesthetic to site the canulae?
   Yes / No
21. Parental presence during the second stage of recovery from anaesthetic should be encouraged. Do you:

(a) Strongly agree [ ]
(b) Agree [ ]
(c) Uncertain [ ]
(d) Disagree [ ]
(e) Strongly disagree [ ]

22. If it is unit policy not to allow the routine presence of parents at the induction of anaesthesia, please specify reasons below.

Thank you for your co-operation.

Alan Glasper
Lecturer in Paediatric Nursing
Faculty of Medicine
University of Southampton
Appendix IV
Publications by E.A. Glasper related to the role of parents in the anaesthetic room
PARENTAL PRESENCE DURING ANAESTHESIA INDUCTION IN CHILDREN

The involvement of parents during the induction of childhood anaesthesia is a matter of some considerable controversy. The growth of the concept of family-centred care has highlighted several aspects of a child's admission where parents desire greater involvement. One such area is the anaesthetic room and there is increasing evidence that parents wish to be present during their child's anaesthetic induction. The 1991 UK Department of Health publication entitled "Welfare of Children and Young People in Hospital" states unequivocally that access to anaesthetic rooms should be provided for parents and carers.

Fear of Anaesthesia

The emotional trauma associated with anaesthesia induction has been widely recognised for many years. People of all ages have a dread of anaesthesia arising perhaps from the subconscious fear that they may not wake up. This fear, recognised by anaesthetists, has traditionally been controlled by the use of sedative premedicants which ensured, at least for many patients, that they were asleep before they ever arrived in the anaesthetic room.

During the last decade there has been a considerable increase in the number of children in day case surgery who are admitted in the morning and discharged in the afternoon. This has led to a decline in the use of sedative premedicants so that most children are awake when they arrive in the anaesthetic room. The mind of the pre-school child is particularly unable to comprehend such concepts as reversibility and many children appear to experience the impending anaesthetic as a death threat (Batomski, 1985); after all, animals are "put to sleep". The trip to the anaesthetic room itself can be a daunting experience for a child. Long corridors, theatre trolleys and strange faces often wearing masks all combine to cause fear and apprehension in a child who (at least day case children) may have been in his own home less than one hour earlier. It can be the final straw in a day that begins without breakfast or even a drink, a day when after arriving in a strange building, he has a painful injection. Wislicki (1984) describes the collective fear of anaesthesia in institutionalised
Professor Glasser (continued)

children and highlights the terror these children suffered as they waited their turn for surgery. This terror was expressed through the children's play acting. Dolls were anaesthetised, bandaged, had their limbs amputated or were completely destroyed.

Emotional Contagion

Most children are dependent on their parents' emotional support in coping with anxieties. Clearly, if parents were to make children more anxious, their presence in the anaesthetic room would be contraindicated. The simplest childhood anxiety is that produced by contagion and this is exemplified in the child who becomes frightened when he is in close contact with frightened adults. If those whose role is one of protection become frightened themselves, then this can be transmitted quickly to the child with detrimental results. It is thought that parents who are frightened are unable to contribute to the psychological welfare of the child who is undergoing a stressful procedure. This is one of the main reasons put forward by anaesthetists for the continued exclusion of parents from anaesthetic rooms. If parental anxiety is mirrored in children, relieving a parent's stress may indirectly reduce the child's stress during certain hospital procedures. Thus it is important for hospital personnel to follow strategies designed to prepare parents in addition to children for stressful procedures. Preadmission programmes, if in some children's units have addressed this issue and some centres include in the programme specific preparation for parental accompaniment to the anaesthetic rooms.

Preparing Children for Stressful Events

Preparatory strategies are intimately concerned with stress inoculation. Maitland (1969), among others, has indicated that the criteria for surgical success should be measured not only by intact wounds and safe discharge but also by intact emotions. Ideally any preparation for a planned hospital admission should involve the parents and allow them to rehearse their own role, especially during events such as anaesthetic induction. The implementation of primary nursing coupled with a philosophy of family centred care can enhance such stress inoculation programmes. The anxiety provoked by hospital admission can therefore be ameliorated by giving children and their families adequate information before, during and after anxiety provoking experiences. Clearly, different preparatory strategies must be employed if one is able to prepare all children and their families for such events.

A Review of the Literature

Until recently, there have been relatively few reports in the anaesthetic literature that discuss the presence of parents in the anaesthetic room, but the growing number of projects which demonstrate the beneficial effects makes it harder to justify policies which prohibit parental presence. Johnson (1963, 1968) has stated "in children who are old enough to have fear or apprehension during surgery, the emotional factor may be a greater source of concern than the child's physical condition, it is often in fact, the greatest problem of the entire operative cause".

The first study of the effect of a parent's presence (mother) during anaesthetic induction appeared in the literature in 1967. Schulman et al investigated 32 children between the ages of two and six years who were admitted for tonsillectomies. Half the children were accompanied to the anaesthetic room by their mothers (randomly assigned). The children's mood during induction (experimental and control group) and changes in behaviour following hospitalisation were investigated. Mood was rated in several phases. The pre-threat phase was a play session occupying the first 15 minutes after arrival in the anaesthetic room. The main stage was from the time the mother left the child on the way to the anaesthetic room (or the time she would normally have left) until the start of the induction of anaesthesia. The third and final phase, the impact phase, was divided into two parts: (a) the first minute of induction and (b) the remaining time until the point of surgical anaesthesia. Significant differences between the control and experimental group were revealed at data analysis. The experience of anaesthesia was perceived to be less stressful for accompanied children. The mothers who were present were enthusiastic about being with their children, were co-operative and behaved appropriately, even when anxious.

A subsequent similar study was conducted by Hannallah and Rosales in 1963 and evaluated parental presence during the induction of anaesthesia with 50 children. In the control group, anaesthetic induction was performed in the same manner but without parental presence. The mood of each child was assessed using a one-to-five scale at four stages: in the waiting room, at pre-induction while being escorted to the anaesthetic room, during induction, and post-operatively in the recovery area.

There was a significant decrease in the number of very upset or turbulent children in the group of children accompanied to the anaesthetic room by parents. Although there were no significant differences between the two groups when a post hospital questionnaire was analysed, Hannallah's study concluded that allowing a parent to support an anxious child during anaesthetic induction can be very effective in relieving anxiety and minimizing the need for premedication. A study by Johnson et al in 1988 revealed that some parents have difficulty in coping with the stress of their child's induction and that this stress appeared to affect the child. Johnson concludes that parents should be allowed to be with their children during induction if they wish, but that they should not be forced into it. She further emphasizes the need to prepare parents for their role in the anaesthetic room.

Vassar et al (1990) reiterates that although parental participation in a child's anaesthetic induction is beneficial for the child, it may cause stress for the parents. Strategies designed to educate the parents about their role in the anaesthetic room may help reduce this tendency. Braude, Saxon and Summer (1990) point out that parental presence at induction of anaesthesia is controversial and of disputed value. A survey of 90 parents demonstrated that 50% wished to be present at their child's induction and the most commonly cited reasons for this were the child's anxiety or the parents' sense of duty. The survey revealed that 32% of these parents changed their preference if their child were to be adequately sedated pre-operatively. This is interesting given Johnson and Young (1988) study results which indicated that placebo was considerably more effective as a premedicant than was trimipramine.

Schofield and White's study (1988) had as a main objective, the investigation of the incidence of difficulties associated with parental presence during the induction of anaesthesia in children and the influence of premedication with special reference to vomiting after papaveretum. The study concluded that difficulties with parents in anaesthetic rooms were not common or severe. The incidence of nausea and vomiting after the operation was higher with the use of papaveretum than without.

Despite the growing number of research reports appertaining to parental presence, the subject remains controversial.

Recent Studies in the UK

Why have parents been traditionally "persona non grata" in the anaesthetic room? There are several reasons:

- Local customs — red lines and transfer zones.
- Fear of increased risk of infection.
- Problems of coping with two patients: parents may need attention, some faint.
- Training experiences may be hampered by parental presence.
- Fear of having a potential critic in the anaesthetic room.
For these and other reasons, valid or otherwise, parents have been disenfranchised. The traditional medical hegemony has its roots in benign paternalism and changes in policy, therefore, come about slowly.

In 1986, one anaesthetist consented to allow parents into the anaesthetic room. This change in policy caused great consternation among other anaesthetists and theatre nursing staff.

Survey of the Association of British Anaesthetists

Prior to embarking on a full scale research project, it was deemed prudent to ascertain the attitudes of the members of the Association of British Paediatric Anaesthetists to determine the scope of the problem of parental accompaniment. A questionnaire mailed to members addressed three main issues:

1. Policy relating to parental presence.
2. Practices regarding the use of premedication.
3. Attitudes to and opinions about parental presence.

The responses yielded useful data and provided further evidence that parental presence during induction was indeed problematic around the UK. In spite of the poor response rate (52%), findings confirmed data collected by Thomas (1986) which demonstrated that 47% of surveyed departments did not allow parents into the anaesthetic room.

Areas of interest revealed by the results of the survey included a rejection by anaesthetists of the "infection risk doctrine" (even so most respondents indicated that some form of protective clothing was issued to parents entering the operating theatre department).

Although the members of the Association of British Paediatric Anaesthetists represent only a small proportion of the total number of anaesthetists who routinely deliver anaesthesia to children, by gathering the views of this group it was hoped to obtain a weather gauge of practices in the UK as regards parental presence. The results generally indicated a dichotomy of opinion on the matter and highlighted the need for further research.

A research proposal for a small explanatory study was submitted to the hospital ethics committee for approval which was granted.

Pilot Study

In a three month trial of parental presence during induction, a portable VHS video camera was used to film children undergoing anaesthesia, with or without parent. Parents were only informed that the study concerned children's reaction to hospital experiences, but all were fully briefed afterwards.

It was ensured that children knew nothing of the forthcoming filming and the researcher took pains to avoid any interaction with them in the pre-operative period. Spielberger state and trait anxiety rating scale questionnaires were administered to parents just before the child being called for operation — this was hoped to furnish evidence which could throw light on the contagion debate. Only boys were used: 10 aged from six months to six years, with mother, and 13 (range two to four years) without mother were filmed from the point of entry to the anaesthetic room to the point of surgical anaesthesia when the mothers were asked to return to the ward. Only one mother turned down the invitation to accompany her son to the anaesthetic room. The tapes were edited into two distinct stages: from entry into the anaesthetic room to the commencement of induction, and from induction to the point of surgical anaesthesia, thus paralleling an aspect of Schulman's 1967 study. Two sample video clips, one demonstrating a positive and the other a negative experience, were prepared to show the judges the range of emotions that could be displayed under anaesthesia. The sample clips were viewed first. The final 'judgement tape' consisted of randomised 30-second video clips of children about to be anaesthetised or undergoing anaesthesia with or without parent.

A number of 'judgement booklets' of 46 pages of 12 adjectives (commonly used to describe the emotional state of children) with a seven point scoring grid were handed out to the 26 judges who were used in groups of five representing seven judge types: from junior to theatre nurses and paediatric anaesthetists.

The analysis of the scores for each judge type suggested that there were benefits for children in having a parent (mother) present during anaesthesia induction; those with a parent were rated as being more contented, reassured and easier to handle. The analysis of the Spielberger anxiety rating scales, administered to mothers during the pre-operative period, gave some support for the contagion theory. Unaccompanying mothers who rated themselves as anxious under the Spielberger scale had children who were more positively judged during induction. One can only hypothesize that had the parents been present, the children may have been less positively judged. Clearly, the contagion issue is not without substance. It is also interesting to note that, contrary to the fears of theatre staff that parental presence could prolong the process, the pilot study revealed that the presence of parents did in fact reduce the length of anaesthetic induction. This is also at odds with other studies (Hickmott et al, 1989) which demonstrated an increase in time. The pilot study showed a mean reduction in time of 20.5 seconds, compared to the control group.

The Main Study

Following the pilot study, staff agreed to allow continuation of parental access into the anaesthetic room, and a major study was undertaken. A total of 200 children, boys and girls were randomly chosen from the main database and filmed with or without parents for a series of edited video tapes. Apart from gender and parental presence absence, categories included gas and intravenous anaesthetic, and high and low information. The same methodology was used as in the pilot study. Judges were recruited from around the UK, Scotland, Wales, England and Ireland;
Professor Glasper continued!

Conclusion

The results of the main study demonstrate positive benefits in having parents accompany their children to the anaesthetic room. However, if parents are to have an extended role in hospital, it is important that they should be prepared for this role possibly through pre-operative information giving. A pre-admission programme which gives parents and children an opportunity to rehearse their roles during a forthcoming admission is but one way in which to achieve this objective.

There appears to be little evidence to justify policies which prevent parental access to anaesthetic rooms.

REFERENCES


EDITOR'S NOTE

In the Australian context, AWCH, SA prepared, in 1989, a RECOMMENDED POLICY RELATING TO THE PROVISION OF CARE FOR CHILDREN UNDERGOING ANAESTHESIA. Relevant papers of the AWCH Perth Seminar of March 1990 also merit attention. These and the "Policy", have been published in the September 1990 issue of "CHILDREN IN HOSPITAL", Vol. 18(3):7-11:

1. Tobin, M. (pp.7-8) Parental presence during induction of anaesthetic.
2. AWCH, SA (p.9) A recommended policy...

PREPARATION FOR ANAESTHESIA AND SURGERY

PAPER GIVEN AT THE AWCH SEMINAR, "BRIDGING THE GAP", HELD IN SYDNEY 9-10 OCTOBER, 1992

LORRAINE JACKSON*

It was only a little over a century ago that any special provisions were made for the surgical care of infants and children. Since then, pediatric surgery has developed into a precise, intelligent and gentle surgical specialty.

From the 1940's on, moves were also made towards humanising the child's experience of hospitalisation, but the progress was slow. In Australia, it was AWCH's pioneering work, notably its "Recommended Health Care Policy" (1974) which started the dramatic improvements in the way we care for children in hospital.

Children are something special and they do have specific needs. There is no doubt hospitalisation is a stressful experience for children that brings discomfort and disturbs their identity. It is a stressful time for the whole family; for some, even a time of crisis.

Children are affected by many factors: separation from parents and family, strange environment, little understood and painful procedures, to name but a few. Each child reacts differently depending on past experiences, the nature of illness, higher emotional security, the attitudes of hospital staff, etc. Also, different age groups show different reactions:

- The infant is more anxious about the separation from parents than about the surgery itself and needs the constant presence of a mothering figure.
- The pre-schooler can conceptualise and worry about bodily injury and pain, whilst in school-age children fears of pain and injury are compounded by the stress from the loss of control and forced dependency. From 8-10 years, the child perceives an adult concept of death.
- The adolescent feels the stress of the situation but, for this age group, worry about body image may be greater than the fear of pain.

What can we do to alleviate adverse reactions? It has been shown that the stress of hospital admission and surgery can be significantly lessened by preparing children for these events.

We have implemented two preparation programmes at the Campbelltown Children's Hospital: an arranged tour of the hospital (including a play session) one to two weeks prior to surgery, and a pre-op visit conducted by the theatre staff a day before or on the day of the operation.

1. Arranged Visit

Every effort is made to ensure that the experience is an exciting adventure, not one to dread. Selecting terminology is important as words convey attitudes. When we use positive terms such as ... help you grow ... help you stay strong and healthy ... help that part of the body to do its job ... children are more likely to respond in positive ways. Explanations must be truthful. When things happen as predicted, trust is sustained. When they don't or promises are broken.

* LORRAINE JACKSON is Clinical Nurse Educator, Operating Theatres, at the Children's Hospital, Campbelltown, NSW.
suggestions to the hospital. I know this letter is still in Suzanne's medical file.

Three years on, a change of ward sister and attitudes (and perhaps my letter) produced a different story. Everyone was extremely helpful and eager to explain procedures.

I discovered to my astonishment that Suzanne is very difficult to anaesthetise and should be attended by a consultant anaesthetist.

After a routine admission the day before surgery I was allowed to take Suzanne home for the night and return with her next morning, already bathed, for a much shorter wait.

Panic did set in when the theatre nurses arrived but this time I stayed with her every step of the way until she was anaesthetised. I felt so much better and more useful.

I was there when she woke up so that in my mind I had never left her.

It was remarkable how much more happily she recovered from this visit to the hospital.

Positive suggestions

• If possible the child and parent should be allowed home the night after admission and before surgery. They get a good night's sleep and avoid the stress of a long wait without food and drink in a strange environment.

• All parents should be given the choice of going to the anaesthetic room and staying till the child is asleep.

• Parents need basic pre-admission information, including facts about sleeping arrangements and whether they need to bring a sleeping bag or camp bed, and a flask and sandwiches.

• Parents should be encouraged to ask questions and be fully informed about their child's treatment.

An article in the North West report for The Arthritis Group (TAG) which funds research and is a support group for sufferers and their families. For details contact Diana Perry, 1 The Oaks, Common Mand Lane, Gillingham, Dorset SP8 4SW.

This article first appeared in NAWCH Update No 29, Spring 1990, and is reproduced by kind permission of the author and NAWCH.

SUPPLEMENT WELFARE OF CHILDREN

Accompanying children

Parental presence during anaesthesia — beneficial or hazardous? Alan Glasper examines the issues.

Many people find the prospect of general anaesthetic frightening, perhaps from a subconscious fear that they may not wake up. Anaesthetists have long recognised this, and as long ago as 1927 J Ross McKenzie (1) stated that: 'The mental condition of the patient may be highly detrimental to the safe induction and maintenance of anaesthesia.'

The use of heavy premedicants has ensured, at least for many patients, that they are asleep before they ever arrive in the anaesthetic room. This effective method of dealing with immediate pre-operative anxiety has also been traditionally used for children. In recent years there has been a steady increase in the number of children admitted as day cases. This trend has as a consequence, that most children are awake when they arrive in the anaesthetic room.

Children, like adults, may be frightened of anaesthesia and it has been described as a 'death threat' (2).

Children are dependent on their parents for emotional support and help in coping with anxieties. The National Council for the Welfare of Children in Hospital (NAWCH) has argued that parents should be allowed to accompany their children to the anaesthetic room and remain with them until they are asleep. Traditionally, parents have not been welcome in operating theatre departments and one of the main reasons is concerned with contagion.

This is exemplified in the child who becomes frightened when he or she is in close contact with frightened adults. If those whose role is one of protection become frightened themselves, then this can be transmitted to the child and thus prolong the process of induction. They further hypothesise that frightened parents are unable to contribute to the psychological welfare of children undergoing stressful procedures.

Campbell (3) uses the term 'emotional contagion' in describing how emotional states in parents can be communicated to their children. If parental anxiety is mirrored in children and if parents become anxious in anaesthetic rooms, perhaps in relieving parental stress it might be possible to indirectly reduce a child's stress. This may be achieved by preparing parents for their role in the anaesthetic room.

'Emotional contagion'

Skipper and Leonard (4) have demonstrated that the quality of interaction between an authoritative person such as a nurse and a hospitalised child's parent can lower the parent's level of stress and can in turn have a demonstrable effect on the child's behaviour.

Inoculating families against stress is the focus of many pre-admission programmes. Glasper and Stradling (5) have indicated that the stress of hospitalisation may be ameliorated by giving children and their parents adequate information.

The role of the parent in the anaesthetic room can be explored during such programmes and some hospitals permit a visit to the operating theatre where parents and children can 'rehearse their forthcoming roles'.

Although anaesthetists are concerned
with the possible problem of having two potential patients (the other a parent who may faint) there are other reasons why parental presence is not encouraged, one of which relates to cross infection.

For strong and valid reasons, staff have traditionally invested considerable amounts of time and energy in reducing the risk of infection. Many of the protocols used today have their origins in the days before antibiotics. The building of the new district general hospitals incorporated many of the pre-war fears appertaining to infection.

This concern ensured that the new operating departments were as impregnable as Fort Knox – at least for human beings – with red lines, transfer lones and the like. Short of stripping completely naked, it is often impossible to access some departments, although it is often wondered why stretcher trolleys can enter with impunity.

A previous study has shown that a majority of paediatric anaesthetists do not believe parental presence in the anaesthetic room to be an infection risk (6). Department rules and regulations, powerful though they may be, can be overcome if approached sensitively by groups of professionals who are committed to improving child care.

The growing emancipation of parents in hospital belies the current controversy related to parental presence during the induction of anaesthesia. Parents are no longer prepared to accept the traditional patriarchy of the hospital as an institution and look to the paediatric nurses to be their advocates in helping to achieve reform. This advocacy has been augmented by NAWCH. Very few anaesthetic departments have written policies regarding parental presence at the induction of anaesthesia (7) but some children's units are beginning to mention the subject in booklets and other information which is mailed in the post to families.

It has been stated (8) that the criteria for surgical success should not only be measured by intact wounds and safe discharge but also by intact emotions in the child and family. Such statements are usually sufficient for some nurses to forthcoming full frontal attacks on what they may perceive as the last bastion of intervention. The criteria – only lead to entrenchment and hardening of attitudes.

In any event, many anaesthetists are convinced by the argument but are inhibited from encouraging parental participation for other reasons. There has been a paucity of research data in the United Kingdom until recently and the author is in the final stages of a study which may contribute to this debate. The persona non gratia image of parents in the anaesthetic room may soon be a thing of the past.

Alan Glasper BA, RGN, RSCN, Oor, DN, CertEd. RNT is Head of Nursing Studies Department, The University of Southampton and Vice Chairman of the RCN Society of Paediatric Nursing.

References
HELP OR HAZARD?

Some anaesthetists still believe that parents should not accompany their children to theatre. Why? Alan Glasper and Andrew Dewar report on the results of a recent survey.

Despite the fact that many professional and lay groups now believe that children facing operations benefit from having their parents with them, anaesthetists themselves remain deeply divided.

The reasons they put forward for opposing parents being present in the anaesthetic room vary from custom and practice or increased risk of infection to ensure that parents may faint or that their presence will hinder training. It might also be that some simply fear having a potential critic in the room.1

Yet the fact is that separation from parents is a major cause of psychological upset in pre-school children. Moreover, those departments that have allowed parents to accompany their children to the anaesthetic room have shown positive results.2,3,4

A recent article in the British Medical Journal advocating that children be accompanied provoked a heated correspondence. It was after this that we decided to send a short questionnaire to 67 members of the Association of British Paediatric Anaesthetists to elicit their opinion.

Obviously this group represents only a small proportion of the number of anaesthetists involved with children, but we believe that in this way we could obtain a 'weather gauge' of general practices relating to parent participation around the UK. Of the 67 questionnaires sent out, 35 responses were received, of which 31 yielded usable data.

Of the 31 who replied, only 18 said that parents were given a choice about whether they accompanied their children to the anaesthetic room. Twelve said their units had a specific written policy on the subject. Where parents were allowed, 27 said that only one person was permitted. Significantly, where a policy did exist, its implementation was usually at the discretion of the anaesthetist.

Clothing policies in the anaesthetic room showed no clear concerns. Twenty-two said that parents wore overshoes, 17 overclothes, nine headgear, three a change of clothing and all in a variety of combinations. One anaesthetist agreed that the presence of parents in the anaesthetic room represented an infection hazard.

Clearly it is important that clothing should immediately identify the wearer to theatre staff as a parent. Giving parents theatre staff clothing to wear is fraught with problems.

When asked if accompanied children were given premedicants only two anaesthetists said they were not, 13 said they were and a further 15 had no set policy.

The use of premedication in paediatrics is the subject of much debate. Only six agreed that premedication is generally unnecessary in children accompanied to the anaesthetic room by a parent. This is despite a study performed recently by Johnson and Young which indicated that a placebo was...
considerably more effective as a premedicant than was Trimeprazine.

Many anaesthetists use Atropine as a premedicant, especially in the younger age group where airways are relatively small. The method of administration remains controversial. Only 13 of the respondents preferred the oral route.

Injections are hated and feared by most children and are not well tolerated at any time. The use of oral premedicants whenever possible must have advantages in the pre-operative period. Only one respondent said he used local anaesthetics to help intravenous induction.

The rapid use of topical local anaesthetic creams since 1986, when this survey was carried out, is at odds with the generally negative response obtained to this question.

Most respondents agreed that parents should accompany their children to the anaesthetic room and that children were less anxious as a result. Only three anaesthetists thought the induction of anaesthesia in children was more difficult when parents were present. Although most agreed that parents should be encouraged to be present at the induction of anaesthesia, they were less happy about parents being at hand during recovery.

Central questions to be answered are:

1. Does parental presence make any difference at the induction of anaesthesia?
2. Are children less upset when accompanied to the anaesthetic room by a parent?
3. Does parental presence cause further problems?
4. Does parental presence cause unacceptable problems for anaesthetists, the surgeon and theatre staff?

Our small survey does not provide any conclusive answers. Rather, it reveals there is still a division of opinion among some anaesthetists. Until we have identified the benefits and problems associated with having parents present, those divisions are likely to remain.

REFERENCES


Henderson, T.W., Young, P.M. Premedication for Children. Anaesthesia, 1986; 41: 10.

FURTHER READING

Balbinot, R. Fear is the Key. Senior Nurse 1955; 8: 4th Oct.
The concept of allowing parents to accompany their children to the anaesthetic room is controversial. Traditionally they have been 'personae non gratae', almost reminiscent of the pre-Platt era, when parental visiting was extremely limited throughout hospitals.

PARENTS IN THE ANAESTHETIC ROOM: A Blessing or a Curse?

ALAN GLASPER, B.SC. R.S.C.N. ONE, D.N. CEN Ed R.N.T.
Lecturer in Paediatric Nursing, University of Southampton

The presence of parents in the anaesthetic room has received scant attention in nursing, medical or psychology literature, especially in the UK. However, Hanallah (1983), Schulman (1967) and Merrick (1983) have studied the effects of parental presence during anaesthesia and all are favourably disposed. Schulman's study concentrated on 32 children admitted for tonsillectomy. The group accompanied by a parent proved to be less upset than the unaccompanied group. Schulman agreed that upset during induction was mitigated by the mother's presence. It is interesting to note that no mothers turned down the invitation to accompany their children and all were cooperative and enthusiastic about the experience.

In Hanallah's study the parents of 50 unpremedicated children were invited to be present during the induction of anaesthesia. The mood of each child was assessed at four stages:

- the waiting room;
- the preinductive period;
- during induction;
- postoperatively in the recovery room.

Hanallah concluded that for some preschool children parental presence during the induction of anaesthesia proved effective in relieving anxiety and in reducing the need for premedication.

Merrick's study looked at the significance of parental presence and showed that the anaesthetic staff found it helpful in 31 cases, immaterial in seven cases, a little harmful in one case and very harmful in a further case.

Factors operating against parental accompaniment

1. Local custom — operating department rules and regulations.
2. Fear of increased risk of infection.
3. Potential problems of coping with two potential patients — parents may require attention, especially if they faint.
4. Training experiences may be hampered by parental presence.
5. Fear of having a potential critic in the anaesthetic room.

The Platt Report in 1959 recommended sweeping changes in the way children were cared for in hospital. It advocated unrestricted visiting and the desirability of providing residential accommodation for parents, particularly those of children below school age, but its findings were largely ignored by many paediatric units. The absence of radical change proved to be the precursor for the formation of the National Association for the Welfare of Children in Hospital (NAWCH) in 1961. Some 26 years later the original objective of NAWCH to implement the recommendations of Platt on a national basis has still to be achieved in some paediatric units.

In 1976 the Court Report highlighted further inadequacies in the way children were cared for in hospital. In particular it called for pressing...
improvements in the training of staff and exhorted institutions to devote
greater resources for the special needs of children. Much remains to be
done before it can be said that the joint philosophies of Plait and Court
have been fulfilled. However, the move towards unrestricted visiting,
parental accommodation and now care-by-parent units has ensured a
growing trend towards family centred care.

It has been demonstrated that some children may benefit from a hospital
experience (Vernon and Schulman, 1964) but preschool children are
especially vulnerable, old enough to suffer the stresses and yet too young
to profit fully from any psychological preparation that may be available.
Separation from parents is a major cause of psychological upset in
preschool children both immediate and long term, but can be mitigated
by reducing parental separation. Although the role of parents has
increased in recent years, for various reasons parents have not taken, or
have not been allowed to take, full advantage of what appears to be new
opportunities to become involved in the care of their child during a
hospital stay. Such opportunities are being reflected in the gradual
introduction of preadmission programmes and care-by-parent schemes
to UK paediatric units. Although at an early stage of development, such
innovations are gradually highlighting the natural resource that paediatric
nurses have at their disposal in the form of parents and guardians. The
parent, as an equal partner in the traditional nurse/doctor/patient
relationship, should accelerate this change.

R.M. Smith (1968) has stated: “In children (who are) old enough to
have fear or apprehension (during surgery) the emotional factor may be
an even greater source of concern than the child’s physical condition. (It
is often) in fact the greater problem of the entire operative course.” In
order to avoid separation completely and thereby reduce upset, some
anaesthetic departments allow parents to accompany their children to the
anaesthetic room and remain with them until they are asleep. Some
anaesthetists go one step further and allow parental presence in the
recovery room.

J. Ross Mackenzie (1927) stated that: “The mental condition of the
patient may be highly detrimental to the safe induction and maintenance
of anaesthesia.” Here, of course, Mackenzie was principally referring to
adults, thus demonstrating that people of all ages have a dread of
anaesthesia, arising perhaps from the subconscious fear that they may
not wake up, or that the surgeon may begin the operation before they
are fully anaesthetised. This fear has long been recognised and the use
of heavy premedicants ensured, at least for many patients, that they were
asleep before they ever arrived in the anaesthetic room. Sleep induction
(i.e. the use of sedative premedicants) was widely used in paediatrics and
in many ways prevented the types of anxiety seen today. The gradual
decline of sedative premedicants is, ironically, linked with the changing
patterns of management of sick children. To reduce separation and the
effects of hospitalisation, there has been a growing demand for day
surgery — where the child is admitted in the morning and discharged
in the afternoon. This practice, laudable though it is, has prevented many
anaesthetists using sleep induction and has ensured that most children
are awake when they arrive in the anaesthetic room.

The mind of the preschool, preoperational child is unable to comprehend
such concepts of reversibility and many children appear to experience
the impending anaesthetic as a death threat (Balberie, 1965). Telling a child
he is going to be put to sleep is hardly reassuring when one considers
what happens to pets when they are put to sleep.

The trip to the anaesthetic room can, in itself, be a daunting experience
for a child. Long corridors, lifts and strange faces often wearing masks
all combine to cause fear and apprehension in a child who, less than an
hour earlier, had been in his own home. For many day-case children it
is the final straw in a day that began without breakfast or even a drink,
a day when, after arriving in a strange building and having a strange man
examine him (even though mummy has repeatedly asked him not to talk
to strangers) he had a painful injection in the leg by a strange lady in
a funny dress.

The author is currently investigating the effect of parental presence
during the induction of anaesthesia and hypothesises that children are
less upset when accompanied by their parents. Behaviour differences
between accompanied and unaccompanied children are being studied,
using video tape.

An article in the British Medical Journal (White, 1985) advocating the
accompaniment of children to the anaesthetic room by parents caused
a flurry of correspondence among interested parties. Many contrasting
views were expressed. Following the publication of these letters a postal
questionnaire (Glasper and Dewar, 1986) was sent to all 67 members of
the Association of British Paediatric Anaesthetists. It was deemed
appropriate to approach anaesthetists as only they have the final say as
to whether parents accompany their children to the anaesthetic room.
Obviously this group represents only a small proportion of the number
of anaesthetists who deliver anaesthetics to children and yet it was hoped
to obtain a 'weather gauge' of the practices regarding parental presence
around the UK. Of the 67 questionnaires posted, 35 responses (52 per
cent) were received. The results of this simple questionnaire were as
predicted and validated the available literature on the subject.

The aim of the postal questionnaire was to ascertain the views and
opinions regarding parental presence and to highlight areas of agreement
and disagreement among members of the association. The questionnaire
addressed three main areas:

- policies relating to parental presence;
- practices regarding the use of premedication;
- attitudes and opinions relating to parental presence.

Policy Twelve respondents had written policies regarding parental
presence at the induction of anaesthesia, and 18 gave parents the choice
of accompanying their children to the anaesthetic room and remaining
with them during induction. Where parental presence at the induction
of anaesthesia was accepted, 26 respondents allowed one parent only,
with three respondents allowing both. Where a policy on parental
presence existed, its implementation in 12 out of 14 cases was at the
discretion of the anaesthetist. The responsibility of the anaesthetist is to
the patient and during the particularly stressful period of induction some
anaesthetists worry that they may have an extra patient in the form of
a parent, especially as some may faint.

Where parents accompany their children to the anaesthetic room the
majority of respondents indicated that some form of protective clothing
is worn, often in a variety of combinations ranging from overclothes to
complete changes of clothing. In four areas parents were also asked to
wear masks. This is particularly interesting as only one respondent agreed
that the presence of parents in the anaesthetic room represented an
infection hazard.

Practices regarding the use of premedication When asked if
premedication is generally unnecessary when children are accompanied
to the anaesthetic room by a parent, only six anaesthetists agreed. Johnson
and Young's study (1986) indicated that placebo was considerably more
effective as a premedicant than was Trimeprazine. The use of atropine

Bibliography
Quinton, D., Rutter, M. (1976) Early hospital admissions and later disturbances of
admitted to hospital.
in very young children is undeniably essential due to the relatively small size of their airways. The optimum method of administration remains unclear and there are still many paediatric units who favour the intramuscular route. The rapid utilisation of topical local anaesthetic creams to facilitate painless intravenous inductions throughout UK paediatric units belies the negative response appertaining to the use of such creams when the survey was conducted early in 1986.

Attitudes and opinions related to parental presence When asked if parents should accompany their children to the anaesthetic room and remain with them during the induction of anaesthesia whenever possible, 17 respondents agreed or strongly agreed. Sixteen agreed that children are less anxious during the induction of anaesthesia when accompanied by a parent, 12 respondents agreed that the induction of anaesthesia where parents are present is generally easier and 14 respondents agreed that parental presence should be encouraged in the recovery areas.

The results confirmed there is a dichotomy of opinion relating to the subject and, in view of the paucity of UK data, the central problem must be to study benefits and problems associated with parental presence.

- Does parental presence contribute to the welfare of the children?
- Does parental presence cause further problems?
- Does parental presence cause unacceptable problems for anaesthetists, surgeons and nursing staff?
- Does parental presence increase the risk of infection?

The wide variety of opinion and practice related to the subject suggests that some investigation may unmask the confusion.

THE PROFESSIONAL NURSE WRITERS' AWARD 1988

Effective patient teaching and health education are essential elements of nursing in every care setting and throughout every specialty. In The Professional Nurse, our regular Patient Education Plus feature aims to provide readers with new ideas and approaches to patient teaching in a wide range of different subjects: see, for example, John Dickerson's article on hyperactive children in the December issue (page 92), and Patricia Black's Patient Education Plus on breast cancer screening in November (Volume 3, page 63).

Our next Writers' Award gives you the opportunity to prepare a Patient Education Plus article, and to win £200! In addition, the winning entry, and those placed second and third will be published in future issues of The Professional Nurse.

The format for Patient Education Plus is fairly flexible, as you will see from those already published. It must provide some background information or discussion on your chosen subject for your readers (qualified nurses, health visitors and midwives), and also a handout which can be photocopied and adapted for distribution to patients and clients. It should be no more than 2000 words long, and can include drawings and photographs, if you wish. You may already have a handout which you and your colleagues have developed for use with your patients or clients which could form the basis for your entry.

Entries will be judged by Elizabeth Horne, the Editor, and members of the Editorial Advisory Board with a particular interest in health education.
Parents want to join their children in the anaesthetics room: John Illman reports

The big sleep debate

SHOULD parents be allowed into the anaesthetics room when a child is put to sleep? Many are saying yes, insisting that a parent can reassure a nervous child in a strange, alien environment. Several anaesthetists say yes, in line with the Association of Anaesthetists and specialist medical journals. In a letter to the British Medical Journal, one anaesthetist expressed "profound dismay" when a surgeon turned down his request to be with his three-year-old daughter. He recalled how he and his wife had to hand over their terrified daughter to a nurse at the anaesthetics room door.

But the parent access controversy is acquiring a broader platform. It is not just doctors who are pressing for change.

The issue provides a focus in the 'patient power' campaign who are pursuing medical compensation through the courts. The Society is seeking information for a survey. Replies will be treated in confidence, Contact Brian Lamb or Raymond Lang at the Spastics Society, 15 Park Crescent, London W1N 3AQ. Tel: 01-426 5020.

Self Help

(An alphabetical directory of self-help groups)

Alcoholics Anonymous, 61 Dover Street, London SW1 Y4F. Tel: 01-403 0888. Aims: to support teenagers who are or have been at risk from alcoholic parents. Alcohol Counselling, 305 Grays Inn Road, London WC1X 8QF. Tel: 01-633 3347. Aims: to create public awareness of alcohol problems and improve welfare services for problem drinkers.

Amnesia Association Ltd., 31 St. Charles Hospital,停下or Street, London W10 6XZ. Aims: to set up local support groups to help amnesic people and their carers.

A special British Rail booking slip has been launched for deaf people. The Helping Hands slips enable people to fill in their travel requirements for the booking clerk, slips available from BR's Customer Services Office, Euston House, Euston Road, London NW1 2DB (with A5 see), or from "Helping Hands", Information Division, The Royal National Institute for the Deaf, BHF Helping Hands, 108 Gower Street, London WC1E 6AB. (Again with A5 see)

The Spastics Society is appealing to parents of children with cerebral palsy who are pursuing medical compensation through the courts. The Society is seeking information for a survey. Replies will be treated in confidence, Contact Brian Lamb or Raymond Lang at the Spastics Society, 15 Park Crescent, London W1N 3AQ. Tel: 01-426 5020.

The issue provides a focus in the 'patient power' campaign who are pressing for change. The issue provides a focus in the 'patient power' campaign who are pressing for change.

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Appendix V
Sample policies relating to the role of parents in the anaesthetic room
A Recommended

POLICY RELATING TO THE PROVISION OF CARE FOR CHILDREN UNDERGOING ANAESTHESIA

Prepared By

The Australian Association for the Welfare of Children in Hospital (S.A. Branch Inc.)

April 1989

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PREAMBLE

Contemporary paediatric health care recognises the special needs of the hospitalized child. Anaesthesia in young children has the potential to cause emotional distress for the child and his/her family.

Parents† should be encouraged to be involved in the psychological preparation of the child undergoing anaesthesia, whilst health professionals should provide overall support for the whole family during this time.

The AAWCH (S.A. Branch) advocates that health professionals involved in anaesthesia in children, consider the emotional well-being of the child and family, and implement the following recommendations to ensure their optimal welfare.

POLICY STATEMENTS

1. Children need the support of their parents on the day of operation.

2. Parents and children need preparation for a stay in hospital and need to understand what is happening.

3. Children should be able to be accompanied from the ward by a parent who would then remain with them until they are anaesthetised.

4. Hospital routine should be adapted to avoid unnecessary distress to children and their families.

5. Children should be returned to the ward as soon as possible after the operation.

Footnote *
Parents used herein refers to parent(s) and/or significant other(s).
### Recommendations relating to POLICY (1):

**Support**
- Children need the support of their parents on the day of operation.
- Hospital staff should be encouraged to welcome and familiarise parents to the hospital environment. Parents should be informed early that they will be welcome and needed on that day. They may then be able to arrange time off work and/or alternative care for any other children.

**Children need the support of their parents on the day of operation.**

### Recommendations relating to POLICY (2):

**Preparation**
- Parents and children need preparation for a stay in hospital and need to understand what is happening.
- Advanced preparation will help parents and children cope with the events of surgery. Admission leaflets with specified information about operating day routines as well as invitations to visit the ward and meet the staff are invaluable. Specific preparation about procedures and operations by means of carefully selected videos, books and/or play techniques may be helpful. Parents must be told and shown what their roles will be.
- Nursing and medical staff need to be well-informed of the special needs of children in order to facilitate the above. When the parents meet the anaesthetist they will be informed about the methods to be used to premedicate and anaesthetise their child. It will also be possible to ask any questions at this time. It is helpful if the Theatre Nursing staff meet the child preoperatively to continue preparation for the theatre experience.

**Parents and children need preparation for a stay in hospital and need to understand what is happening.**

### Recommendations relating to POLICY (3):

**Induction of Anaesthesia**
- Children should be able to be accompanied from the ward by a parent who would then remain with them until they are anaesthetised.
- Parents should leave the induction area as soon as their child is unconscious. It is preferable for the nurse who is caring for the child to accompany him/her to theatre especially when the parents are not able to.
- The surroundings in the induction area should be adapted to make them less threatening to children.

**Children should be able to be accompanied from the ward by a parent who would then remain with them until they are anaesthetised.**
Appendix V - 5

Recommendations relating to POLICY (4):

Hospital routines should be adapted to avoid unnecessary distress to children and their families.

HOSPITAL ROUTINE
The day of the operation can be unnecessarily traumatic for many children and their families. Distress can be minimised by sensitive attention to certain points.
Children should only be fasted for a minimum time.
Conflict over the child's wearing of a gown is to be avoided. Gowns should be in attractive colours likely to appeal to a child. Children may like to choose and try on their gowns in advance. If a child refuses to wear a gown he/she should be able to go to theatre in his/her own night attire. Children should be allowed to wear their underpants to theatre.
Many children are terrified of injections and consideration should be given to the type of premedication used. Induction techniques should be adapted to the emotional needs of the child. Children may be frightened by being placed on a theatre trolley. If possible they should be carried or wheeled to theatre in their own beds. Children who are asleep should not be disturbed.

Recommendations relating to POLICY (5):

Children should be returned to the ward as soon as possible after the operation.

POST - OPERATIVE CARE
Children should be returned to the ward as soon as medically possible. Where practical parents should be allowed in the Recovery Room. Attention needs to be paid to post-operative pain relief for infants and children of all ages.

POLICY DOCUMENT ADAPTED FROM THAT OF MAWCH, LONDON.
Quality Review Series

SETTING STANDARDS FOR CHILDREN UNDERGOING SURGERY

Action for Sick Children

Sponsored by Nuffield Hospitals
7 Anaesthetic room

On arrival at the theatre suite, parents and children should be made welcome and anaesthetic staff should introduce themselves (if they have not previously visited the ward). The identity of the child should be checked during the hand-over from the ward to the theatre nurse. Particular care must be taken with children from ethnic minorities whose names may be unfamiliar to staff. Sometimes if the parents do not speak English, it may be helpful to have an interpreter or a link worker in the anaesthetic room to support parents once the child is unconscious.

Parents in the anaesthetic room

Safety is the prime concern and the presence of parents depends on the judgement of the anaesthetist and wishes of the child. However, the Department of Health maintains that the presence of parents and carers is not a luxury and recommends that parents should be able to be together with their child at the 'most stressful times, e.g. during and after treatment, anaesthesia, investigations and X ray'.

There will rarely be safety grounds for excluding parents during induction of anaesthesia.

Some anaesthetists are concerned about infection if a parent is allowed in the anaesthetic room, if children wear their own clothes or have toys with them. However, most hospitals see no reason for a parent entering the anaesthetic room to wear special clothes. Where hospitals have changed their procedures, the infection rate has not increased.

Most children (especially young children) may be less distressed if the parent stays in the anaesthetic room during the initial stage of induction of anaesthesia. The parent should be able to hold a young child during induction if this helps the child to relax. It is difficult to anaesthetise a screaming child who may become so distressed that the anaesthetic cannot be given.

Some problems can arise if parents are not prepared for what will happen in the anaesthetic room. There should be guidelines for parents (Appendix 3). These should include:

- the importance of leaving the anaesthetic room if asked to do so
- the parent's role
- when the parent should leave
- where parents should wait while the child is in theatre
- when and where the parent will see the child after the operation.

If special infection control is needed, the system needs to ensure that the child is not left alone while the parent changes into special clothing.

Anaesthesia Charter

Safety
Alleviate psychological and physical stress
Prevent pain
Provide no horrors for the future

Other people in the anaesthetic room

Anaesthetic rooms should have enough space for one parent and staff. While the anaesthetic is being given only the parent, anaesthetist, surgeon, ward nurse, operating department assistant / anaesthetic or theatre nurse should be present.

Sometimes other people may be present for training. Parents should never be excluded solely because training is taking place. Other staff should not use the anaesthetic.
Appendix 3

Parents accompanying their children to theatre – guidelines

You can accompany your child to the operating theatre and remain with him or her in the anaesthetic room until he or she is asleep. Many parents and children find this helpful but if you feel at all unsure, discuss it with your child’s nurse, or with any theatre staff who may visit you on the ward. You will not see inside the operating theatre.

Only one parent, or a close relative, can go into the anaesthetic room.

Going to the theatre

A nurse from the ward will go with you and your child from the ward to the theatre area and into the anaesthetic room. Children can travel to theatre in a number of ways, depending on their age, type of operation and wishes.

- They can be carried
- They can ride on a trolley or bed
- They can walk to the theatre (if no premedication has been given).

They can take a toy or comforter with them if they wish.

In the anaesthetic room

Usually your child will be prepared for the anaesthetic on the ward, whether it is to be given by injection or gas through a mask. In most cases, the anaesthetic is given with an injection with a very small needle in the back of the hand. Ward staff routinely apply a cream to numb the skin on the back of the hand about an hour before the operation so that the injection should not be painful.

You can best help by holding the other hand of your child and talking gently to comfort and reassure him or her.

It is important that you leave the anaesthetic room as soon as you are asked to do so.

While your child is in theatre

As soon as your child is asleep you will be asked to leave. Staff will tell you approximately how long the operation will take. It is important that you tell the ward nurse where you will be so that you can be contacted as soon as your child is awake in the recovery room.
Appendix VI
Video tape related to parental presence at the induction of Anaesthesia

*Produced and co-ordinated by E. A. Glasper*