'Surgery for children: In search of perfection'

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Vice-Chancellor, the Dean, colleagues, friends and family.

[1] It is a particularly great honour to stand here this evening at this Inauguration of the Charles F.M. Saint Chair in Paediatric Surgery, as the third incumbent to occupy this position, which is really as champion of the surgical child. Indeed it is a great privilege to have my two predecessors with us here tonight Professors Sidney Cywes and Heinz Rode. I pay tribute to these great and humble men, both remarkable in their own way having laid the foundations for what is an internationally renowned department.

[2] Historically and to this day we in Paediatric surgery have always had the encouragement and support from the successive heads of the department of adult general surgery but it was of course Professor Jannie Louw in the first instance who really drove the process of the establishment of a department of paediatric surgery.

[3] It is appropriate to say a few words about Charles Saint whose name was immortalised in the endowment of this Chair in 1975. All those who have had the privilege of training at this Medical School will know the name of ‘Charlie Saint’ as he left an indelible imprint on those whom he taught and mentored. Born and schooled in the North of England he graduated in 1908 from the University of Durham with the remarkable distinction of winning 15 of the 18 available undergraduate prizes. He became a registrar/assistant to one of the great men of British Surgery of the time, Rutherford Morrison and was sponsored by Lord Moynihan in his appointment to the Chair of Surgery at UCT. He was appointed Professor of Surgery in 1920 and retired in 1947. He inspired many and has left an extraordinary legacy of having trained 7 Professors of Surgery. He was a man of principle and taught an approach to surgery where principles had pride of place. His aphorisms used as guidance for trainees are legendary; ‘the brain is like a muscle it atrophies with disuse; the simpler the procedure the better the outcome; early to bed and early to rise, work like hell but organise!’ to quote a few but the one that strikes a chord with me is ‘always attempt what you are afraid to do – it will be easier next time’.

[4] The citation for his Honorary Fellowship of the College of Medicine of South Africa in 1968 reads “he was a great man as well as a great surgeon; he handed on the spirit as well as the letter of his creed and became one of the great disseminators of surgical thought and maker of surgeons”. He was an outstanding scholar and a gifted teacher; a superb clinician; a shrewd judge of a difficult situation and a master surgeon.
Now the very same can be said of his successor Professor Jannie Louw and in turn his protégé Professor Sidney Cywes seen here around the time of the establishment of the C.F.M. Saint Chair. It was Professor Louw who established paediatric surgical care initially at Groote Schuur and then at the Red Cross War Memorial Children’s Hospital when it opened in 1956. It is pertinent to remember that the outlook for a neonate with a surgical condition in the late 1940’s was pretty grim, around 80 to 90% mortality. With Arthur Bull as anaesthetist, Jannie Louw revolutionized surgical care for children. He stressed the importance of correct operative technique and in making the pre and post operative care equally important in the total management of the child patient, left an imprint of what is required for generations of surgical trainees. In that decade a near 90% mortality was turned into 90% survival. In 1957, as registrar, Professor Cywes began to increasingly devote his time to the surgery of children and by 1961 was the first in South Africa to restrict his practice entirely to children. With Professor Louw’s decision to use money left to the department by Saint to endow this Chair in 1976 Sid Cywes was passed the baton. During his tenure he developed the department of Paediatric Surgery extending skills in every direction with many firsts achieved. Research into the management of short bowel and Hirschsprung’s disease continued, Day Care Surgery was begun, a dedicated Trauma Unit opened in 1984, The Child Safety Centre (1978), Conjoined Twins continued to be seen and successfully separated and Transplantation of the liver was established to name a few. These were so ably expanded by his successor Heinz Rode, who with his great enthusiasm and stamina carried the department through the tough years of the late 1990’s and into the new millennium.

I come from a family with many doctors and grew up on a smallholding above Ida’s Valley in Stellenbosch. My first experience of surgery was when aged around 3yrs my father’s leg was almost amputated by the kick of a mule while riding his horse through a field. I remember running with my grandmother carrying a handful of fruit box slats to be used as splints. Together we bound his leg up and he was literally ‘carted off’ to hospital. Tractors were relatively rare in those days. Fortunately his leg healed without recourse to the knife. My next experience was when as a 5year old I was savaged on the face by an Alsatian dog. I have almost total recall of the event until I lost consciousness from an open ether mask anaesthetic. When the stitches were removed I stopped counting at around 50. I carry the visible scars but perhaps surprisingly no psychological scars that I am aware of, certainly not a fear of surgery or dogs. As a casualty orderly at Victoria Hospital, Wynberg in Dec/Jan 1967, after first year, I was introduced to every kind of trauma and soon became an expert in suturing, bandaging and applying plaster of Paris, under supervision of course.

My surgical career proper began at Somerset Hospital in 1973 as Intern in John Terblanche’s Firm. I can truly say my year at NSH was a defining period of my career. It is perhaps difficult for those who did not experience it at first hand to realize the extent of separation of racial and ethnic streams even during the student years and in every day life. I will not dwell on this but suffice to say I was the only white intern, housed separate from the doctor’s bungalow in splendid isolation! During that year I gained huge insight into our distorted society and the greatest respect for my
colleagues, many of whom are here today and with whom I work closely at the Red Cross Children’s Hospital. For their friendship and comradeship then and now, I am truly grateful. I have worked in and visited many hospitals in the UK, Europe, North America and Australia and have been privileged to meet many outstanding people all of whom have contributed in some way to the making of this surgeon. Professor John Terblanche who had been put in charge of Somerset was my first tutor and of course Professor Del Kahn has been a good friend and colleague and mentor particularly in transplantation these past 28 years. There are many other colleagues during my professional life with whom I have worked and for whom I have gratitude and great respect; this includes all the staff at the RXH and on the 6th floor but particularly my thanks and appreciation go to Professor Sid Cywes whose guidance, inspiration, mentorship and faith in me has enabled me to be standing here this evening.

[8] Surgery like many other aspects of medical practice but perhaps more so, is a one on one situation. The surgeon constantly strives for surgical options with better outcomes. We do indeed search for surgical perfection and practice makes perfect. It is unacceptable just to act as an apprentice and practice on the indigent patient. As Paediatric Surgeons we have a particular responsibility and duty to children to strive to elevate the standard of care to the highest level and advance and indeed perfect our expertise, knowledge and skills. This should be done up to a level of expertise in a skills centre or even at home if necessary before ‘having a go’ on an unsuspecting patient. In addition, increasingly we live in an age in medicine where for the child patient most, if not all, require a multidisciplinary team to manage an often complex problem, particularly at a tertiary level of care. Thus every member plays their part. It is not our place as surgeons to be dominant but we certainly can be team leaders. [9] This concept is embodied in the Kyoto Declaration of Pediatric Surgery made in 2001 by the World Federation of Associations of Pediatric Surgeons the WOFAPS. Every child born should have the right to love, happiness and health and if possible to be treated by those especially skilled in that treatment in an environment where the child takes pride of place. It is our vocation to play our part so that in the fullness of time children with surgical conditions may fulfil their potential and each make his or her, own unique contribution to the human family.

[10] But first let me put the surgery of children here on the African Continent and the world into perspective. There are 8 new births a second. The population of India increases by 23 million a year. Equivalent to a new Australia every year, and a new South Africa every 3 years! The world is changing at an unprecedented pace, not a first world and third world, rather a ‘fast world’ but there are stragglers. The WHO estimates that 10 million children die each year from essentially preventable causes. Three die each minute of gastroenteritis. Most of these deaths are due to social and economic deprivation.

[11] Here in South Africa, although there is significant expenditure on health we have a long way to go before anyone can feel satisfied with our progress. One can see where we stand on this chart in comparison to some other countries of equivalent wealth. Thus one is acutely aware of the place of paediatric surgery, which even at its best is
not a major player in the greater scheme of the improvement of the whole of the health and welfare of children.

However, we do play a role. Paediatric surgery is indeed the surgery of children and in this way is unique in that it refers to surgery in its broadest sense across many specialties on an age group, which may only end in true adulthood at 18yrs. Eighty-five percent of children will require some surgical intervention before age 16 yrs. We must understand and adapt to the changing landscape of the developing being from tiny premature infant, through carefree pre-adolescent to the teenager whose outward and visible appearance belies the fragile citadel of their integrity and the confused and sometimes turbulent brain in command. Thus we deal with conditions in the broadest sense, which are in the tradition of our teaching congenital and acquired and the latter are those where in some way the environment has adversely impacted on our patient.

Our current challenge is the impact of acquired immune deficiency in the form of HIV exposure, which has had a devastating effect on the people of this continent and in a very personal way on outcomes after surgery. We know that ~ 350,000 South Africans died in 2006 because of AIDS and among adults aged 15 – 49yrs 71% of deaths were AIDS related. What of our children. 15% of antenatal attendances in the Western Cape Province are HIV positive. In some areas this figure goes up to over 40%. We are acutely aware of the social pressures and stigma, which results in both the mother and child being victims not only of disease but within society as a whole. Of course the goal is prevention but this takes organization and delivery on our part and courage on the part of the mother to submit to testing and take the social consequences of her posivity, she does this for the sake of her child. However, even those infants born exposed but not infected have subtle immune compromise and respond poorly to surgery or present with overwhelming infections. This must be an area of research. Around 350,000 children in South Africa are living with HIV.

With better obstetric and perinatal prophylaxis we hope to see the downward trajectory of infected children seen in other countries where great focus has been applied to mother to child infection prevention. The whole subject of HIV and surgery is a major focus of research and in cooperation with colleagues in Milan a R4 million grant has been awarded for this.

When does a paediatric surgeon’s involvement start? The obstetrician is tasked with care of the mother and the foetus and at the end of pregnancy ensuring a fit and perfect child as well as a healthy mother to suckle and nurture the newborn infant. The foetus as a patient begins in the ideal world long before conception with genetic counselling and education. We know that folate given before conception can reduce the incidence of some major devastating congenital anomalies. We protect the mother and educate her during pregnancy in avoiding infections, toxins (alcohol and tobacco), medications known or as yet unknown, which might cause harm. Foetal diagnostic and treatment centres have sprung up throughout the world to identify any problem with the foetus and to intervene if necessary. We know that only a percentage of fertilized ova will make the full journey to a normal birth and we know that around 4% of births will have a congenital anomaly requiring perhaps surgical intervention. Thus one can see that this is a significant burden of disease. If a major
anomaly is noted prior to birth this may raise questions about the future viability of the growing foetus and subsequent quality of life. If the anomaly is severe termination may be decided upon. It is cogent for the paediatric surgeon to be part of this decision-making process, as it is we who will carry the responsibility of fixing that which needs to be fixed and who have with years of experience a concept of what it might mean to carry the burden of a poorly functioning part of the whole. These are difficult ethical questions and decisions cannot be taken out of context of the family and environment into which a child might be born.

[16] There must be certainty of diagnosis, beyond reasonable doubt. As every mother and father knows their wish is for the perfectly normal child and we all live in hope. The birth of a less than perfectly formed child is accompanied by a range of emotions which have to be taken into account and managed. We are not very good at this, as there are so many babies being born that perhaps a brief counselling session is all that the busy clinician has time for before the next one must command full attention. Diagnosis must be made with absolute certainty before a course of action is decided upon and this must be a joint responsibility with parents, obstetrician, neonatologist and paediatric surgeon.

[17] Fortunately technology is advancing rapidly with every means of investigation both invasive and with relatively benign imaging as shown here, diagnostic accuracy is improved such that termination of pregnancy can be discussed with the confidence of a firm diagnosis. Even so there are still conditions where we are really in doubt as to the best course of action.

[18] Here is conventional ultrasound of a foetus to be born with gastroschisis. This child can be managed with a 90% chance of survival [19] and this liver haemangioma in most cases will just need observation.

[20] Is there a place for foetal surgery? We have known for a long time that it can be done. It was indeed in the dark, cold, almost stygian experimental animal laboratories of this medical school that Christian Barnard and J.H. Louw in the mid 1950’s demonstrated that successful foetal surgery was possible. In their case they were experimentally creating a series of pathological entities observed in the human gut – the various types of intestinal atresia. This was a landmark study in the history of paediatric surgery. Now, more than half a century hence, surgeons can, with great care, operate on a human foetus with reasonable safety, but to what benefit. As with any advance, brave and determined men step forward and Michael Harrison in San Francisco and Scott Adzick in Philadelphia were the pioneers. Only a few centres in the world have embarked on this endeavour and over the last two decades a very limited number of conditions have been identified where there might be a place for foetal surgery. These were so elegantly demonstrated for us by Yinka Olutoye, a Nigerian, one of the African medical diaspora, but now in Houston, who visited us recently as a James IV Fellow and I am indebted to him for these slides.

[21] Using techniques of relaxation for the uterus, haemostatic staples for the uterine wall and replacement of liquor with warm saline, surgery becomes feasible. Shown here is
a foetus having a lung cyst which was causing severe compromise and foetal hydrops removed. More minor procedures of needle aspiration or thoraco-amniotic shunts may be all that is required.

For a solid mass this could extend to the so-called EXIT procedure or Ex-utero intra-partum treatment particularly for those where airway compromise is expected. The placental circulation is maintained by induction of uterine relaxation until the airway has been secured. This does however take great planning and co-operation with our obstetric colleagues. We are in the same team with the same goals. In the occasional case this is something we really should look at together. There is no other centre in this country likely to take up this challenge.

Let us move on to the child now born. We are all aware of the anatomy of the human and are aware of the myriad ways in which minor deviations or temporary insults may affect development. In the March of Dimes Global Report on Birth Defects 2006 the sub title is ‘the hidden toll of dying and disabled children’. Some are immediately life threatening by their nature or site in interfering with a vital function. Sometimes the surgeon makes the diagnosis but more frequently the obstetrician and paediatrician must recognise a problem and take the first steps to diagnosis, emergency care and transport; hence the importance of paediatric surgical teaching to undergraduates and all those likely to be exposed to infants and children as part of their career medical practice. I am pleased to say that our undergraduate curriculum is vastly superior to many medical schools in the U.K. in this regard.

So, now in most cases if there is a structural problem we can fix it. This applies to almost any area of the body. Increasingly because each anomaly occurs with relative infrequency sub-specialists and system specialists have developed thus whereas 50 yrs ago many paediatric surgeons operated on the heart, the lung, the gut and even a cleft palate, today we are much more subdivided and focused in our practice with even sub-specialization within the subspecialty. Not only must we be aware of the need to fix the problem but this must be done with the absolute minimum of trauma, pain and evidence of surgical attack.

We need to reduce the adverse impact of surgery. Now there lies a conundrum. With modern technology almost any procedure can now be done with minimally invasive techniques, by this I refer to video assisted minimally invasive surgery. This is not new. It was Bob Goetz in this very Medical School who did pioneering work in thoracoscopic sympathectomy and diagnostic laparoscopy with fairly primitive technology in the 1940’s. Technological advances have allowed Minimal Invasive Surgery (MIS) to get to where it is today.

Take this child for instance with multiple congenital anomalies; oesophageal atresia and tracheo-oesophageal fistula, gastrooesophageal reflux, tracheomalacia, Meckel’s diverticulum and undescended testes. With conventional surgery his body would demonstrate a veritable battlefield of surgical enterprise, which might not only result in unpleasant cosmesis but on occasion structural deformity. With skilled MIS one can barely see the evidence. The technical ability and learning curve is steep and perhaps in some, the functional outcome is not as good and potential for
complications greater. Again we must make sensible and pragmatic decisions, but we have come a long way.

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Some are intent on going even further and are pursuing NOTES (natural orifice trans-luminal endoscopic surgery)! [video 1]Note this almost reptilian endoscopic instrument and [video2] a mechanical suturing device.

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Technology is moving fast with rapid advances over the last 3 years.

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The robot with its magnification, control of fine movement and almost unnatural flexibility is already established. It will not be long before this multimillion dollar machine becomes affordable and even dare I say it routine.

In 1978 when I started my paediatric surgery in London at University College Hospital and the Queen Elizabeth Hospital for Children it was not unusual for a child with an undescended testis to remain in hospital for a week to 10 days after surgery often with the testis sutured to the thigh. Current practice is for day care surgery. This is also nothing new as recorded by Nichol in the Glasgow of 100yrs ago, where many infants were managed as day cases but somehow in the intervening years the hospital bed acquired an aura as a place of refuge. It is now estimated that with appropriate and skilled minimal invasive surgery up to 60% of all general paediatric surgical operations can be carried out in this way. This is the concept of fast-track surgery where the in-hospital stay is kept to a minimum. We at the RXH are moving steadfastly in this direction.

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Much capital equipment and infrastructure are required and thanks to the wonderful generosity of the public at large, which has been magnificently harnessed by the RXH Trust, we will soon be in a position with our new theatre complex which will have 9 state-of-the-art theatres of which 3 will be fully digitalized, to roll out this kind of service. I am very thankful that Alp Numanoglu has taken this on as project leader and I see the RXH becoming a pioneer of paediatric MIS in Africa. There is no doubt that this technology can have enormous positive impact in providing the maximal benefits of surgery with minimal trauma and in-hospital time and this may have particular relevance here in South Africa, where immune deficiency states have had a particularly adverse effect on wound healing and surgical outcomes.

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Many other challenges remain. After the age of one year trauma becomes the major cause of death in children. What a tragedy it is for a perfectly formed child to be torn apart or carried away as a result of some entirely preventable accident.

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South Africa is a dangerous country for children to live in.

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We have a wonderful trauma unit seeing 10,000 patients a year, the only one of its kind on this continent and over the years, we have published on almost every aspect of management. However, the carnage on our roads continues unabated fuelled by alcohol, speed and burgeoning peri-urban settlement without the privilege of town
planning. There is a great need for accident prevention programmes. Another example is the burn injury, which is the most devastating of injuries and requires an enormous effort of intensive resuscitative, surgical and rehabilitative care. We see 1200 new burns cases each year. The gold standard of care is one day in hospital/% body surface area burned. Heinz Rode has taken this standard of care to another level and has reduced this to 0.7days/%TBSA, a magnificent achievement in our resource limited environment. It is a tragedy that most of these accidents are indeed preventable.

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The Child Accident Prevention Foundation of South Africa (CAPFSA), founded as the Child Safety Centre by Sid Cywes 30 years ago, and taken forward so ably, initially by David Bass and now as ChildSafe by Sebastian van As with its roles of documentation, education and advocacy is beginning to really make a difference in preventing this scourge of our society. This has varied from influencing legislation around safe packaging of medicines and safe child proofing of bottle tops for decanted paraffin to gun ownership legislation and this is really making a difference as shown here.

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Ultimately it is social upliftment, legislation and education at every level, which will reduce this disease burden.

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This coming week-end an international child injury congress will be held here in Cape Town. We hope this will raise awareness and the profile of this disease and we look forward to contributions by some high profile people and hope good things may come of it.

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In South Africa we have a rather unique increased incidence of conjoined twins. In most regions of the world the incidence is >1: 150,000 births but we see at least two sets a year. The birth of conjoined twins raises a peculiar reaction from the lay public and the media alike. True, it is a freak of nature, which we do not entirely understand. Conjunction is usually symmetrical and a join at the chest is the most frequently seen variety. At the RXH we have seen and assessed more sets than any other single centre in the world and I mention this to emphasize that the management of such cases epitomizes what can be done. How to manage these infants may be the most challenging of all surgical procedures and usually involves almost every paediatric and surgical specialty – truly a multidisciplinary team approach. Added to this is the HIV epidemic and all of the last 4 sets referred to us have been exposed and 3 have behaved as infected suffering from multiple and severe infections. There are guidelines as to management. Not all can be separated and custodial care is given to these. Some may grow up forever joined as with the original ‘Siamese Twins’.

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(example slides) This is for parents a most distressing event and many twins have been abandoned or exploited,

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but others have led very full and productive lives. In her book ‘One of us’ Alice Dreger records their lives making a case for our understanding, acceptance and support for such accidents of nature.

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Where separation is possible it should be attempted
and in many cases is successful despite the extent of surgery. In others there are very
difficult ethical decisions to be made where perhaps one of the twins can be saved but
only at the expense of the other.
There have been recent legal opinions to support such decisions.
Where there is success it is a joyous occasion to be able to achieve two separated
individuals who can lead normal fulfilled lives
and in some circumstances one survivor is a major triumph.

Well, how far have we come in other areas of paediatric surgical practice and how do
we measure how good we are? We must constantly strive for perfection.
First it is important to know where we are on the cost/benefit curve. In a country of
our wealth we should be somewhere at the top of the curve. Here in the privileged
academic and tertiary care environment it is very important for us to be circumspect
about how far along the nearly horizontal trajectory we travel before saying enough.
Since medicine began physicians and surgeons have striven to improve but it was
only recently that measuring this has become more structured.
It was Earnest Codman beginning at the turn of the last century in Boston who can be
regarded as a ‘quality pioneer’. He developed the anaesthesia intra-operative record,
the first tumour registry, and documenting and reporting of a surgeon’s one year
operative outcomes. “Every hospital should follow every patient it treats long enough
to determine whether or not the treatment has been successful and then to enquire, if
not, why not?” In fact he was so zealous in his pursuit of audit that he was expelled
from the Boston Surgical Society. The next era was that of the Morbidity and
Mortality Conference and Surgical Audit so familiar to us all. Currently further
quality assurance measurements are being explored the latest being the Children’s
National Surgical Quality Improvement Programme, which will try to take into
account the complexity of risk adjustment and the ongoing development of the child
as well as quality of life measures. In fact quality of care and outcome measure has
become not only a current focus for clinicians but increasingly that of government.
Many systems of measurement are complex but the goal is clear we must understand
that a) we are entirely accountable to our primary constituency, our children and b)
that we have to present evidence that what we do fulfils the requirements of safety,
effectiveness, efficiency, appropriateness with regard to time and place and equity
with regard to clinical need. It is also important to think of the outcome from the
patient’s point of view. That is the total patient experience. The surgical outcome
may be great but if pain was not controlled the patient may be emotionally scarred for
life. For some procedures there are fairly simple ways of measuring outcomes. These
can be against either previous performance or national benchmarks.
The so-called cumulative sum or CUMSUM charts, first introduced as long ago as
1954 into industry as a quality control measure is one such. Cumulative deviations
from a pre-determined mean are plotted on the graph. Deviations become
immediately apparent and audit and corrective intervention can be instituted. Cardiac
surgery outcomes have been a good example of where this type of graph can be used as the outcome can be measured as mortality. UK transplant currently distributes 3 monthly updates to all members with each centre’s results competitively traced. It certainly focuses the mind.

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Perhaps it would be pertinent to look at one of my own areas of interest, liver disease in childhood.
Let me take biliary atresia and the Kasai operation as an example.

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Biliary atresia is a condition of unknown cause where the bile ducts are damaged and replaced by inflammation and scarring and the Kasai operation involves removing the damaged ducts and placing bowel around the cut surface to allow bile to drain. In days gone by biliary atresia was considered a ‘diagnosis too terrible to contemplate’. There has been a radical change in outcome due to earlier diagnosis and a better package of care such that where 30 years ago only around 15% would survive to adulthood and even those were likely to develop end stage liver disease.

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Currently with an appropriately performed and timeous Kasai procedure around 57% of cases should clear their jaundice and 45% survive the first decade without requiring a liver transplant. This is a standard which is quite high as the results improved by a factor of 30% when the Kasai operation was centralized to 3 centres only in the U.K. against much resistance from the paediatric surgical community outside of these centres.

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If we put the results onto a Cumulative Sum graph and we can get an immediate idea of where we are. Thus during my time in Birmingham we performed 29 Kasai procedures. There was a specific package of care which included early diagnosis, antibiotics –intravenous and oral, steroids, surgery and so-called ‘shared care’ whereby all subsequent care givers were provided with well defined protocols after discharge. Looking at this graph one can see that we were doing better than the benchmark. If the trend is above the line then one is doing worse and an immediate detailed audit can be done. It is interesting that when the other two centres changed protocols their results improved. It is encouraging to know that today with complementary liver transplantation the overall prognosis should be 90% long term survival.

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Liver transplantation, first attempted in 1963 but only successfully 4 years later has benefited hundreds of thousands of adults and children. The two giants of liver transplantation are depicted here. Tom Starzl first in Denver and then in Pittsburgh and Roy Calne in Cambridge pioneered clinical liver transplantation.

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See here the extent of this intervention and in Europe. There have only been around 200 transplants performed in South Africa.

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There has been increasing sophistication of surgical technique and introduction of so-called variant techniques introduced to deal with the burgeoning demand for and shrinking supply of donors and for children the shortage of size matched donors.

[57] That is reducing the size of a larger donor to fit a child, splitting one donor liver into two functioning units for two recipients and living donation from mother to child or adult to adult.
Despite our reduced resources at RXH we currently have a >80% long term survival after liver transplantation with many of the 65 survivors having grown up to be productive young adult men and women leading normal lives. When we started 20 years ago there was no map into the future. The future was faith and hope and the courage of parents and children. Now we know a child can grow to an adult and live a normal life but we did not know it then.

These are some of the pioneers. There have been other benefits of having a transplant programme and I mention just two.

In cases of portal hypertension from portal vein thrombosis, for nearly 20 years the management was medical with injection or banding of oesophageal varices after life-threatening bleeding episodes. Shunting, that is diverting blood into the low pressure systemic venous system, was not done at the RXH for many years, as it was feared that the benefit of freedom from bleeding would be accompanied by subtle encephalopathy and impairment of intellect. Now we have a curative operation, which not only cures the portal hypertension but also restores blood flow to the liver; the meso-portal bypass.

A vein graft is placed to bypass the obstruction and restore normal blood flow into the liver.

See here the very tangible and visible benefits in liver growth, and reduction in spleen size with disappearance of varices in nearly all cases. The expertise gained from the liver transplant programme gave us the skills for this to be done.

It has also given us the confidence to pursue the extent of liver resection for tumour to an extraordinary degree even to the point of ‘bench surgery’.

Take this child with a massive hepatoblastoma, a fairly frequently seen liver tumour unique to childhood, where even after chemotherapy the tumour occupies most of the right and central portion of the liver.

These resections are now really almost routine, which only a few years ago would not have been attempted.

What is the next frontier? Intestinal failure? Here we have a unique opportunity. Even with a conservative estimate 1-2 children / million population per year will develop intestinal failure from either congenital or acquired disease. That is a tiny number but by the time intestinal failure is acknowledged each will have been in hospital for many months if not years on intravenous nutritional support.

We know what often eventually happens with these patients; central venous lines become infected with recurring episodes of sepsis, venous access runs out and finally the liver is irreversibly damaged by the combination of failure to establish feeds, PN effect and toxic bacterial translocation from the damaged intestine. We are faced with difficult ethical questions. Do we cast them upon a scrapheap and ‘let nature take its
course’ as the euphemism of treatment withdrawal is so often expressed or should we proceed with what can be done;

transplantation of the intestine? Fifty years ago short bowel syndrome was a problem of extreme urgency as the only alternative was a short and miserable life on peripheral intravenous access applied daily. It was Sid Cywes who pioneered experimental intestinal transplantation here as well as other attempts at non-transplant surgery. Parenteral nutrition has given us, the transplant community, time to catch up and now we are almost there.

My experience with 29 intestinal transplants in Birmingham, the only designated centre in the UK, was enormously stimulating and educating. Current figures suggest a >50% long term survival.

Some patients do incredibly well like this child who developed mid-gut volvulus and lost most of his intestine at the age of 3yrs. He can be seen here 3 weeks after transplant having his first meal and a year later contemplating the horizon and a future. The time is closing fast where with new strategies of immune suppression, a bowel transplant might be a better option when compared to the alternative treatment, life long intravenous nutrition. How can we marry this with the fact of our unacceptable infant mortality from diarrhoeal disease and respiratory infections? I think with responsible circumspection we can. We are here to teach, research and serve. We must do so responsibly but just because a child is afflicted with a rare and fatal disease he/she should not be abandoned on the basis of the expense of the treatment alone. Nutrition is an essential component of growth and intestinal failure from whatever cause needs our full attention.

There are of course non transplant options if the adaptation process has run its course. The so-called STEP or serial transverse enteroplasty is probably the most innovative of these. But not all are successful.

Matthew is now on home PN and may well be a candidate, but for the moment he is well and we hope to put his STEP to work again after a temporary setback, but there may come a time when transplant remains his only option. His mother is up for it and so are we.

There are the challenges of HIV, the trauma epidemic, the service pressures of the greater number of babies born set against a fairly stagnant pool of resources. We must be innovative, we must spread a doctrine that only the highest quality of care is good enough, but there are huge opportunities.

As of August 2007 Pediatric Surgery has been recognized as a speciality in its own right. What was ‘an interest’ for a general surgeon or an ‘endorsement’ is now a full career path with a direct stream into an MMed degree and a 4 year training schedule. There have been 12 certificants in the last 5 years and currently there are at least 7 trainees, 3 of whom will be taking their examinations next month. We would hope to attract a much wider ethnic and gender representation into the speciality than at present and I am confident this will happen.
This is a challenge which we all have to take on. It is really not good enough to accept that the surgery of children is performed by those not fully conversant with the operation they perform. It is our role to set the standard and to maintain a fatherly eye through transparent audit. While we know that the paediatric surgical community cannot hope in the short term to train enough specialists to operate on all children as delivery of surgical services is under pressure all round, but wonders have been done in pushing the concept that most infants and young children are our responsibility.
Take the Eastern Cape as an example. Dedicated paediatric surgeons in Port Elizabeth and East London have set a fine example of paediatric surgical care of the highest order – just a few individuals have made an enormous difference. In the mean time we must continue to train general surgeons in the management of the sick child, emergency procedures such as the acute abdomen, bowel obstruction, trauma and burns and a few definitive procedures which are frequently required such as hernia repair. All other cases can and should be referred. There is not a single site in this country which is more than a couple of hours away from a major centre and of course only a phone call away for advice. It is the lines of communication that should remain open at all times. New technologies must be harnessed. This should not be limited to our own immediate environment.

We have a wonderful opportunity to share our expertise with our colleagues on the continent and indeed the world through outreach, training fellowships and attachments. We now have extensive relationships within Africa and these must be fostered.

Links and multi-centre research projects are already being pursued with vigour. There is an African Fellowship Programme sponsored by the Elma philanthropy and soon we will have a WOFAPS Foundation Fellowship, which will support young surgeons from all over the world to visit us. This is outreach in every sense of the word.

These are some of those who have spent extensive time training with us at RXH. We just have to look back at our own history to see how it should be done. Firstly facilitate sufficient local expertise and infrastructure for an autonomous and sustainable service; secondly provide assistance that is regular, consistent and supportive and thirdly foster a strategy that achieves change through well-trained local surgeons. This above all else takes determined individuals to make things happen.

I have just returned from the 7th Pan African Association of Paediatric Surgeons (PAPSA) Conference held in Accra, Ghana with the theme of ‘the challenge of neonatal surgery in Africa’. There was a mood of optimism and energy.

Great strides forward have been made as exemplified by this presentation from Zaria, Nigeria. Note the improvement, which is gathering momentum. At the first PAPSA meeting in Nairobi in 1994 mortality of between 80 and 100% was observed for many neonatal surgical conditions in most centres to the north of us. One of the presentations asked the question ‘does minimally invasive surgery have a role in Africa’. The answer was a resounding ‘yes’. One advantage is that Africa with its poor resources and lack of infrastructure is at the bottom of the cost/benefit curve such that there will be great satisfaction from seeing huge gains for relatively modest investment.
We propose to establish a Minimally Invasive Skills centre to compare with the best in the world which will be a training resource for the continent and beyond. It is on the drawing board and our goal was to raise 10 million rand for the project. I heard yesterday that we have a major sponsor. Now that really is an exciting prospect. We can set a standard, teach and train and provide leadership and encouragement to the rest of the continent.

Perhaps one can be forgiven in making this sound like a valedictory address instead of an inaugural. It must be accepted that in the trajectory of a career and years passed one is in descent but it is not so. I am privileged to lead a wonderful surgical team at RXH. We refer to someone at the end of life as having had a good innings. Perhaps in one’s professional life one can extend the cricket metaphor and refer to partnerships. The surgical department has had the great privilege of a stability of experience at RXH, my mentors, colleagues and friends Sid Cywes, Mike Davies, Heinz Rode and Rob Brown. There have been a series of partnerships. Professor Louw was the opener with Sid Cywes, Mike Davies joined him and when he departed to take the Chair at Wits, Heinz Rode came into bat. Heinz and I have had a partnership for nearly 30 years and Robin Brown has been there in support.

Three of the finest young surgeons, in Alp Numanoglu, Jonty Karpelowsky, John Lazarus and Sharon Cox each having great skills to make their own special contribution, have joined us, as middle order batsmen/woman today, but are moving up the ladder fast and will be the leaders of tomorrow. Evidence of this has been our research output with just in the last 18 months 46 journal articles and 17 chapters in books either published or ‘in press’.

I / we have a splendid legacy to take forward and do so we will and I am sure we can look forward to the future of paediatric surgery here in Cape Town, in South Africa and indeed the Continent of Africa with confidence.

Closure
Thank you
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