

Paediatric surgery in the RSA — practice and training

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Abstract A survey of the current practice of general paediatric surgery in South Africa and Namibia was conducted by means of a postal questionnaire. One hundred and eighty-one replies were obtained (52%).

Analysis showed that although surgeons are located predominantly in the major cities, 18% practised in the larger towns or rural areas. Although paediatric surgery represents a small volume of their work, most surgeons do attend to the surgical needs of children. The majority of surgeons have received some paediatric surgical training but this was considered inadequate by nearly half of all surgeons and by 60% of those who qualified in the last 10 years.

Current postgraduate training at most of our universities involves a 3 - 6-month rotation, but from our survey this is considered insufficient in practice and there appears to have been some deterioration in paediatric surgical training in recent years. Steps needed to maintain paediatric surgical standards are discussed.

S Afr Med J 1993; 83: 85-88.

Paediatric medicine and surgery, as distinct from general medicine and surgery, developed from the perception that children, particularly neonates and infants, had an entirely different spectrum of disease, and had special needs which required the development of special skills.¹⁻⁵ General paediatric surgery was developed to treat major congenital anomalies, to assist with paediatric oncology management, and to service the new demand area of the neonatal intensive care unit. The management of children with spina bifida, for example, was often the paediatric surgeon's responsibility, and because many neonatal operations involved the chest and diaphragm, most paediatric surgeons maintained some expertise in urology, simple neurological surgery and thoracic surgery but relinquished cardiac, otolaryngological and plastic surgical problems to specialists.³

This is more or less the situation in South Africa today.⁶ However, there are several paradoxes in the South African situation. Although there is a separate department of paediatric surgery headed by a professor in 6 of our 7 medical schools and there are 3 full professors and 3 associate professors, paediatric surgery is registered with the South African Medical and Dental Council (SAMDC) as only a subspecialty of general surgery. There is no separate specialist examination in paediatric surgery, but one may register paediatric surgery as an endorsement after 2 years' training, following registration as a general surgeon. This training must be in an establishment recognised by the SAMDC. Registrars in training for general surgery

should spend time in paediatric surgery as it is a named subject in the final examination for fellowship of the College of Medicine of South Africa. The curriculum for the M.Med. examinations of the universities is, however, less specific.

With the development of the private sector, more children are likely to have their paediatric surgical problems managed outside the teaching hospital environment. Also, with increasing fiscal constraints, there is greater pressure to manage infants and children locally rather than refer them to centres far away with all the expense and inconvenience for the family.

Methods

It was with this in mind that a survey was conducted to examine the practice of paediatric surgery in South Africa and Namibia. A questionnaire was sent to all registered members of the Association of Surgeons of South Africa and the South African Association of Paediatric Surgeons in April 1990, in an attempt to ascertain who was managing the surgical problems of South African children, with what training and in what type of practice. The following details were required: (i) type of practice (academic, private, district/regional hospital); (ii) seniority of the surgeon (years post-specialty registration); (iii) the extent of paediatric surgical training both before and after registration as a specialist; (iv) the opinion of the surgeon as to whether this training had been adequate for the paediatric surgery he had subsequently been required to perform; (v) the percentage of his total practice that paediatric surgery constituted; (vi) the percentage that infant (< 1 year of age) surgery constituted; and (vii) details of operations which he had performed (a list was supplied of the most common procedures). In addition, the geographical area in which respondents practised was recorded from the postmark where possible.

Results

Of 350 questionnaires sent, 181 replies were received (52%). All areas of the country were represented (Table I). Although most replies were from surgeons located in the major cities, nearly 18% had practices in towns or rural areas. This was particularly the case in the Transvaal and Orange Free State, where 24% and 36% respectively practised away from the major centres.

TABLE I
The distribution of replies according to geographical area and population demography

Area	Major cities		Large towns		Small towns/ rural areas	
	No.	%	No.	%	No.	%
Western Cape	42	23	2	1		—
Eastern Cape	11	6	3	2	1	0,5
Northern Cape			1	—		—
Orange Free State	7	4	4	2		—
Transvaal	51	28	15	8	1	0,5
Natal	23	13	5	3		—
Namibia	4	2		—		—
Total	138	76	30	17	2	1
Not recorded	11	6				

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Professional status

Sixty-seven per cent of the returns came from surgeons in private practice, 22% from surgeons at academic institutions and 8% from surgeons at service hospitals. The surgeons appeared fully representative in terms of relative seniority, and a reasonable balance was evident with 51% having been in practice less than 15 years, and 46% more than 15 years. This question was not answered by 3% of respondents.

Training in paediatric surgery

Overall only 42% considered their training in paediatric surgery adequate for what their practice required; 10 of 13 surgeons who qualified in the last 5 years and 20 of 38 in the 5 - 10-year post-registration category considered their training inadequate (Fig. 1). Tuition and experience in paediatric surgery varied enormously. Nearly a third had received 3 months or less training in paediatric surgery and two-thirds had had no post-registration training (Fig. 2).

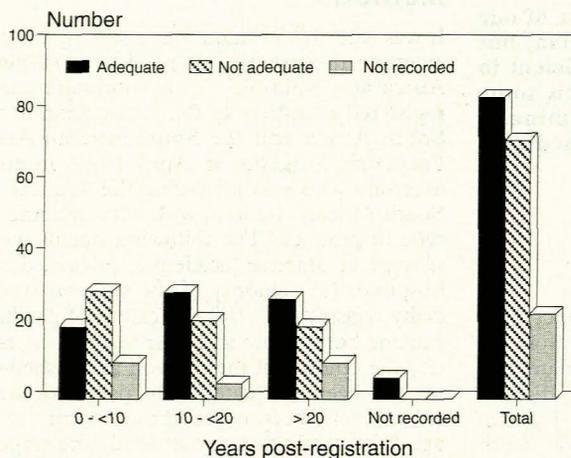


FIG. 1. Adequacy of training assessed against the seniority of the surgeon.

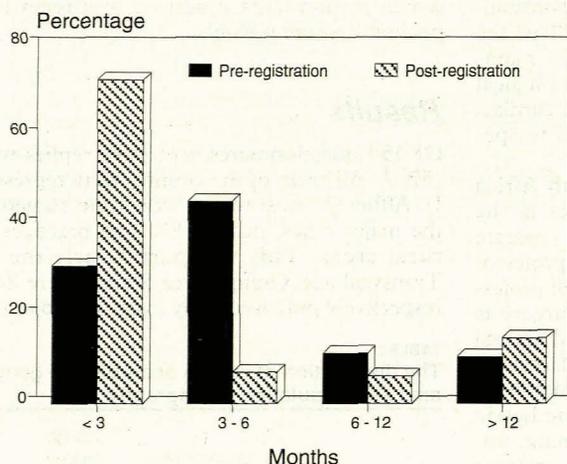


FIG. 2. Paediatric surgical training received both before and after registration as a specialist.

Extent of practice

A full 90% of the surgeons operated on both children (defined as under 13 years of age) and infants (less than 1 year of age), although this represented a small part of their practice, particularly for the older surgeons. However, for 40% of the surgeons, children comprised more than 10% of their patients (Fig. 3).

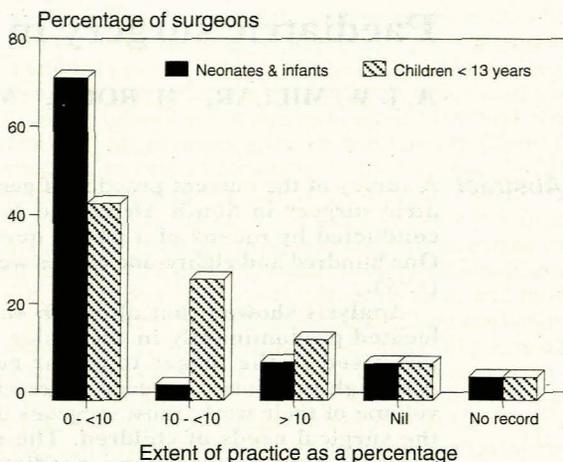


FIG. 3. The extent of paediatric surgical practice expressed as a percentage.

Spectrum of surgical operations

Most surgeons were dealing with the more routine paediatric operations and emergencies. In the infant group it was surprising that although this area represented only a small volume of their practice, approximately 20% were prepared to perform major and sometimes reconstructive surgery (Figs 4 and 5).

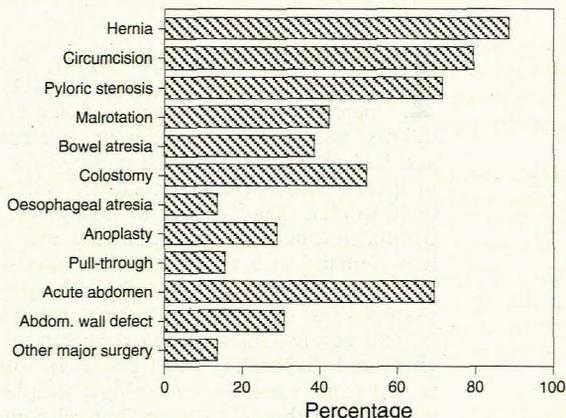
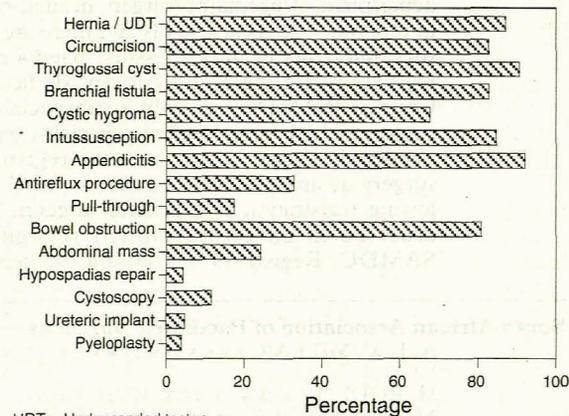


FIG. 4. The most common procedures performed in neonates and infants less than 1 year of age, showing the percentage of surgeons performing such operations.



UDT = Undescended testes
 FIG. 5. The most common procedures performed in all children (1 - 13 years of age).

Discussion

This questionnaire is the first to assess the current practice of paediatric surgery in our region. The sample, although not complete, given that it was restricted to members of surgical societies affiliated to the Medical Association of South Africa and only had a $\pm 50\%$ return, does, however, give some insight which can perhaps guide in planning for the future. The following points stand out: (i) although the practice of paediatric surgery takes place predominantly in the major cities, a significant proportion does take place in towns and rural areas; (ii) very few surgeons obtain post-registration training in paediatric surgery, and pre-registration training varies greatly in quantity and quality; (iii) most surgeons will, however, undertake the routine paediatric surgical procedures that come their way; 30% will remove an abdominal mass (i.e. a tumour) and 20% will perform a pull-through procedure; (iv) younger surgeons in particular feel that their training has been inadequate. The training provided and the future direction of paediatric surgery should therefore be reappraised.

In 1986 paediatric surgeons in Britain reviewed what had been achieved and which direction paediatric surgery was taking.^{8,9} They concluded that most operations on children would continue to be performed by general surgeons, but advocated that in each district with a large hospital, one or two surgeons should 'take an interest' in paediatric surgery, thereby improving expertise and management. The expansion of regionally based and funded specialised services, which would act as referral centres for specialised problems, particularly in neonatal surgery, was proposed. It was recommended that general surgeons be given the opportunity of obtaining specific training to cope with this task. Similar assessments have taken place in North America from time to time with similar conclusions.¹⁰⁻¹³ All the above is relevant to our current situation. However, it is cause for concern that rapid expansion in the private sector and pressure to treat patients locally may make younger surgeons in particular feel obliged to enter the paediatric field without anywhere near adequate preparation. A survey of current paediatric surgery training at our medical schools revealed the following: (i) Cape Town — 3 months general paediatric surgery and 3 months trauma surgery, usually early in training; (ii) Stellenbosch — 3 months (plus 3 months surgery for burns, while on call for paediatric surgery); (iii) Witwatersrand — 6 - 7 months (3 early, 3 - 4 later in training); (iv) Pretoria — 6 months (3 early and 3 late in training); (v) OFS — 6 months (3 early and 3 late in training); (vi) Natal — 6 months (general, oncology and burns); and (vii) MEDUNSA — 6 months (usually late in training). One departmental head stated that although 6 months was the ideal, it could easily happen that a registrar could complete training without having had any paediatric surgical exposure whatsoever and our survey appears to endorse this.

There are currently 34 listed members of the South African Association of Paediatric Surgeons in active practice in South Africa, of whom 12 are in full-time academic practice, 3 are employed full-time at regional centres and 19 are in private practice; only 4 of the latter have had paediatric surgical specialty endorsement.¹⁴ In Britain it has been estimated that the ideal is approximately 1 surgeon per million population.³ This model is similar to ours. In the light of this we are perhaps well off, particularly in the specialist centres. However, most of the country's children will continue to be looked after by general surgeons, both in the public and the private sectors, and it is our duty to see that these general surgeons are trained to an acceptable standard and that channels for advice and help remain open. After all,

advice is but a telephone call away and with increasingly sophisticated means of transport, a problem patient anywhere in this region of Africa could be at a specialist centre within a few hours.

How can the standards of paediatric surgical practice be maintained? Apart from adequate pre-registration exposure, facilities for post-registration training should be made available for both the 'interested' general surgeon and the paediatric surgical trainee. Currently four of our medical schools hold paediatric surgical trainee accreditation status. Short attachments by interested surgeons can be facilitated. A further 6 months to a year on completion of registrar training would have a major beneficial impact on competence in paediatric surgery. For the private practitioner, intensive refresher courses would be more appropriate.

When paediatric surgery was in its infancy Sir Denis Browne, the father of British paediatric surgery, made the often-quoted statement that the specialty of paediatric surgery should not be a monopoly, but should set a standard.³ The standard referred to must include the environment in which the child is managed, and here the children's hospital or unit is essential for a successful outcome. In each case, the role of the paediatric team is emphasised. These teams are to be found at the academic centres, and as demand grows similar teams will inevitably be established in the private sector and at regional hospitals. Also it is important that a sufficient number of index cases are dealt with, otherwise expertise will inevitably decline. It would, for instance, be inappropriate for a surgeon to attempt to correct an anorectal malformation or perform a pull-through procedure less frequently than once a year.²

Nearly 25 years ago J. H. Louw, the father of South African paediatric surgery, reviewed the progress of paediatric surgery in this country and asked the question 'Paediatric surgery — has it arrived?'¹⁵ It certainly has arrived. It is 30 years since S. Cywes was appointed specialist surgeon at the Red Cross War Memorial Children's Hospital, becoming the first surgeon in this country to restrict his practice to children.⁶ The establishment of this specialty, as in many other surgical disciplines, has not led to the disappearance of the general surgeon, who will continue to perform an essential role.¹⁶ It has, however, raised standards of surgical care and in North America has made general surgeons wary of extending their practice into specialty areas, other than in exceptional circumstances.¹⁶ Rationalisation of resources requires concentration of tertiary care in specialised centres. This is true for paediatric surgery too, but there is no reason why regional centres should not develop a considerable level of expertise with the bulk of paediatric surgical care being conducted in this setting. In the private sector the occasional paediatric surgeon should be discouraged and operations on infants and children should be performed by those who have made it their business to become familiar with paediatric surgery.

Our thanks and appreciation to Dr P. C. Jeffery, secretary to the South African Association of Surgeons, for providing the distribution list, to all those surgeons who returned completed questionnaires and to Ms J. Melis for correlating the data and preparing the figures and tables.

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