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## Position Paper

# Surgery in Children and Adolescents

Children's surgery services include both elective and emergency admissions

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## Introduction

Access to specialised surgical care for children is a critical issue in Australia and Aotearoa New Zealand, where isolated populations can face long travel times to tertiary facilities. Surgery in children is provided by all nine surgical specialities of the Royal Australasian College of Surgeons (RACS).

Aside from paediatric surgery, which is wholly concerned with the paediatric age group, each of these specialities performs a range of procedures within the paediatric age group, where perioperative care and admission needs differ in comparison to adult patients. Some of these conditions can be safely treated in regional and metropolitan centres; however, some require admission to tertiary and quaternary paediatric facilities.

## Background

Over the last 20 years there has been a marked increase in flow of surgical patients to children's hospitals. There are several factors for this, including:

- the increasing specialisation and loss of generalisation of surgical domains
- concerns regarding medico-legal risks in children, including child safety regulations
- increasing acute workloads
- hospital credentialing exclusions
- historical financial incentive in some areas for flow of surgical cases to children's hospitals.

The number of costly tertiary/quaternary paediatric beds and of paediatric perioperative sub-speciality staff including nursing is not sufficient to deal with all low complexity or non-paediatric specific surgical conditions. Increasingly the flow of non-paediatric specific conditions such as appendicitis, in consuming the bed and theatre resources in tertiary/quaternary children's facilities, potentially resulting in delays and reduced access to critical neonatal and paediatric complex cases. Similarly, although paediatric surgery is the discipline for surgical expertise in neonates, children and adolescents, its workforce and service configuration has not grown sufficiently to manage all general surgery for children in AANZ.

The principles in this ten-point plan were compiled primarily for the interface between specialist general and paediatric surgeons, as this is the largest area of overlap; however, the principles are applicable and endorsed across the surgical specialities. Paediatric neurosurgery and cardiothoracic surgery and other high acuity, complexity surgery, (e.g. major congenital reconstructive, neonatal, oncology), requiring specialist paediatric surgical and multidisciplinary teams should continue to be performed in tertiary paediatric facilities and are thus excluded from consideration under this position statement.

Urgent or emergency situations arise where transferring a patient to a tertiary or quaternary facility with specialist paediatric surgical service is not possible, timely or appropriate. Paediatric patients presenting with mostly common straightforward conditions such as acute scrotal pain (RACS position paper), appendicitis or who require removal of some foreign bodies should be treated in their local facility when an appropriately trained and credentialed proceduralist is available supported by appropriate paediatric anaesthesia with perioperative care expertise and in consultation with a paediatric specialist as required.

Due to distance and population, the pragmatic solutions between the resources available in remote, rural, and regional areas and that of metropolitan centres in Australia and New Zealand will have some local variations in strategy. Surgeons working in remote, rural, and regional areas may have an extended scope of practice which is driven by a geographic need to deliver sustainable health services and is supported by appropriate training, collaboration with peers in tertiary centres and on-going professional development. Those with extended scope will have had training to match the service requirements.

In determining position statements and strategy it is important that workforce development is supported with training programs in collaboration with professional specialist medical colleges, associations and respective health agencies.

## RACS position

Guidelines regarding age and surgery underpinning these principles are summarised:

- < 2 years - elective surgery (and emergency surgery if possible) in children's specific facility or by surgical specialists and perioperative team with appropriate paediatric training and scope (see SPANZA guidelines below)
- 2 – 8 years - elective surgery and acute/emergency surgery locally if facility and procedural expertise has been supported with paediatric resources (paediatric medical, anaesthetic, and perioperative staff) and paediatric surgical up-skilling, training, or outreach
- 8 – 12 years - low complexity surgery performed locally depending on ability to support appropriate perioperative care
- 12 years - non paediatric specific, low complexity conditions (elective and acute/emergency) – general surgical facilities and staff.

\*Any pregnant adolescent should be admitted to a facility that can treat onsite both the acute surgical problem and obstetric issues. This may rarely require advice or in-reach from paediatric surgical or medical consultants.

### **1. Provide quality treatment for the child appropriate for their age, condition, and local health capability at the closest institution to their home**

- Children need tailored health services at facilities with the appropriate capacity and capabilities (i.e. staff, equipment, and resources), providing safe care and treatment
- which are suited to the child's age, stage of development, comorbidities and type of surgery required
- Suitable and adequately resourced delivery of care close to home must be supported where little difference in outcome is likely

- When a child presents to a service and it is determined that their condition requires emergency surgery, such surgery should be performed locally if a transfer could potentially result in an outcome that is detrimental for the child (for example acute scrotum). This may require close liaison between the local surgeon and the tertiary surgeon on call.
- Rural surgeons of all surgical disciplines are experts in their local context. They are best placed to determine if a child can be cared for locally or needs transfer to another centre, based on their knowledge of local resources including anaesthetic, nursing and allied health.

## **2. Ensure remote, rural, and regional surgeons are adequately trained to assess and treat children within their community**

- There are significantly more facilities with paediatric wards/services than there are dedicated paediatric surgical units. For many sites including metropolitan, adult trained surgeons will be called upon to support the Emergency Department in decision making and to perform emergency surgical procedures for children and adolescents
- In many rural sites, there is still a need for adult trained surgeons to perform selected elective work. For this to be sustainable, general surgeons with an interest in paediatric surgery must have appropriate additional training in acute paediatric surgery so they can manage the common emergencies. Once established, such rural surgeons require ongoing mentorship and the support of tertiary centres, as well as well as that of their intra-regional surgical network colleagues and administration
- Soft tissue injuries, infections, fractures, and low acuity soft tissue and bony anomalies should be managed locally when appropriate, by applicable surgical specialists (e.g. orthopaedic, plastic, and reconstructive, general surgery)
- That paediatric surgeon support and help provide opportunities for regional surgeons to acquire the necessary skills to manage children with acute surgical conditions.

## **3. Provide predictable and evidence-based care**

- Develop clearly defined decision-making processes for common presentations, for example trauma, appendicitis, acute scrotum. This requires collaboration of local and tertiary proceduralists that supports local management and rapid transfer, if necessary, as dictated by condition and local expertise
- Both services and clinicians are supported to provide immediately necessary services without any undue restrictions that could adversely impact health outcomes
- Support rapid escalation mechanisms; particularly for facilities without surgeons, anaesthetists, or paediatricians on site.

## **4. Establish service networks between tertiary paediatric, other metropolitan and regional/rural hospitals**

- Provide access for non-paediatric specialist surgeons to expert advice, thereby mitigating legal concerns and supporting decision making

- Establishment of hotlines, telehealth, and widely disseminated information regarding patient retrieval systems, which incorporate rostering of defined hub-spoke relationships of paediatric institutions with other hospitals and consultants
  - Provide updates and/or clinical rotations to surgeons, anaesthetists, and nurses to refresh knowledge and skills in caring for children requiring surgery
  - Inform General Practitioners, ambulance services and the local community about local service capabilities with the aim of reducing unnecessary transfers and improving timeliness of treatment.
- 5. Ensure communication between health care providers is accurate, at the correct level, and puts the safety of the child paramount**
- Promote “consultant to consultant” level conversations in transfer and communication
  - Tertiary specialists and institutions support the emergency decisions of local practitioners, which must be pragmatic in view of regional resources, investigations, and distances
  - Support the development of “portable” electronic patient record systems to assist communication and transfer of care.
- 6. Develop transfer guidelines between institutions**
- Ensure there are clear processes and protocols in place for the transfer of patients between services
  - Guidelines based on local intra-regional resources and coordinated by paediatric institutions should be reviewed and updated on a scheduled basis
  - Audit of transfers and outcomes should be maintained and reviewed for quality maintenance
  - Ensure clear processes and bilaterally endorsed pathways for cross border patient flows in areas where geographical proximity of expertise is provided across state or national boundaries. This includes retrieval, medical record sharing, multidisciplinary support, transport solutions, and social support.
- 7. Encourage outreach specialist paediatric surgical teams that support local surgeons and other perioperative staff**
- The ability to upgrade a facility temporarily via outreach of specialist anaesthetic, surgical, and perioperative staff needs to be considered in health planning, particularly where there are no local specialist services
  - Paediatric outreach should involve, educate, support, and link with local surgical, anaesthetic, and nursing staff.

## **8. Develop transition plans for older children with complex paediatric surgical conditions**

- Have a transition plan for those children who require multidisciplinary care into adulthood
- Ensuring Fellowship training, particularly of subspecialists, increases awareness of need to provide transitional and adult care for paediatric complex congenital disorders
- Develop patient portfolios containing their histories of complex chronic conditions. This will assist primary medical practitioners to develop their role as coordinators of care transition to regional care; adult transition care; and geographical movement of patients.

## **9. Develop combined subspecialist adult and paediatric expertise for complex adult conditions that also affect children**

- Support links and accreditation pathways for adult sub-specialists to attend and consult upon children in the paediatric environment who have conditions more often seen in adult populations. Thus, may take the form of a combined clinic and include rehabilitation specialist expertise.

## **10. Treat older children and adolescents presenting with non-paediatric specific surgical conditions in an adult facility by an adult surgeon if outside the normal service area of a paediatric surgeon**

- These conditions are those that are commonly treated by adult surgical and procedural specialists
- In most cases of acute scrotal pain, appendicitis and removal of foreign bodies, treatment can occur in a non paediatric-specialised facility by the apposite local general surgeon, urologist, otolaryngologist, or gastroenterologist
- Recognise that physiological and physical maturity is often not reflected in chronological age and individualised patient management plans are required
- Consultation with local paediatric services to address issues with physical and psychological immaturity, child protection concerns, children's medical and mental health issues, and family and cultural sensitivities
- Collaboration between tertiary and non-tertiary services will result in effective youth centred services in regional or non-paediatric metropolitan services.

This paper should be read in conjunction with the following RACS and SPANZA position papers:

- [Acute Scrotal Pain and Testicular Torsion](#)
- [Generalists, Generalism and Extended Scope of Practice](#)
- [Emergency Surgery](#)
- [Access to Elective Assessment and Surgery](#)
- [PG29\(A\) Guideline for the Provision of Anaesthesia Care to Children](#)

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