PAEDIATRIC SURGERY

Elective Report

Paediatric Surgery, University of Auckland

Objectives:

1. What are the prevalent paediatric surgical conditions seen in New Zealand, and how does this differ from presentations in the UK?

As both are developed countries, the paediatric surgical presentations are common to both the United Kingdom and New Zealand. In an emergency paediatric surgical setting, the most common presentations are of an 'acute abdomen' with suspected appendicitis accounting for 49% of cases. Trauma accounts for a slightly higher proportion in New Zealand, when compared with the UK, at about 20% of cases[1]. Skin infections and abscesses are common to both countries (16%), as are cases of suspected strangulated hernias (5%) and testicular torsion (7%).

Research has demonstrated that trauma, especially involving terrain vehicles and motorcycles is more common in New Zealand, and seen in a higher proportion in the Maori population[2]. This is shown to be related to socio-economic status, including residential dwellings nearby or bisected by high-flow roads[3],[4], and as more children need to walk long distances to get to school along these treacherous roads. They are also thought to be more vulnerable to domestic violence including burns[5], assault and non-accidental injury[6], drug and alcohol abuse and homicide[7].

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[1] Peng S, Fancourt M, Gilkison W *et al.* Paediatric Surgery carried out by general surgeons: A rural New Zealand experience. *ANZ J Surg.* 2008; 78:662-664

[2] Scott A, Dansey R and Hamill J. Dangerous Toys *ANZ J. Surg* 81 (2011) 172-175.

[3] Roberts I, Norton R, Taua B. Child pedestrian injury rates: the importance of 'exposure to risk' relating to socioeconomic and ethnic differences, in Auckland, New Zealand. *J Epidemiol. Community Health* 1996; 50.162-5

[4] Shaw C, Blakely T, Crampton P, Atkinson J. The contribution of causes of death to socio-economic inequalities in child mortality. New Zealand 1981-1999. *N Z Med J* 2005 118.

[5] Murphy F, White S, Morreau P. Driveway-related motor vehicle injuries In the paediatric population: a preventable tragedy. *N Z Med J* 2002; 115.

[6] Kelly P, MacCorick J, Strange R. Non-accidental head injury in New Zealand: the outcome of referral to statutory authorities *Child Abuse Negl* 2009; 33: 393-401.

[7] Koea J B, Beban G R Indigenous child health in New Zealand: Some surgical issues. *J Paed Child Health* 46 (2010) 466-470

The most common elective procedures carried out in the UK include herniotomy for hernia and hydrocoele, orchidopexies, circumcision, removal of minor soft tissue abnormalities[8]. These are again similar to those carried out in New Zealand, inguinal herniotomies, anorectal abnormalities are most commonly performed. There is a long list of specialist services offered that include abdominal and cardiothoracic surgery, neonatal surgery and oncological surgery, along with those mentioned above. These are predominantly performed in specialist tertiary centres.

2. How are the paediatric services structured and delivered? Does this differ from the UK?

   The structure of the provision of services is similar for both countries. New Zealand and the UK are troubled with the same issues regarding provision of services, pressure on beds and availability of trained surgeons. However, this problem is somewhat exacerbated in New Zealand with fewer tertiary centres able to deal with the high case load.

   Whereas the UK has 25 specialist tertiary centres[8], New Zealand only has 4 [1] which are spread throughout the North and South Islands. Most practice is therefore carried out in provincial hospitals, with emergency cases being transferred to Auckland (average travel time 4 hr 30 min by road or 45 min by air) or emergency trauma and burns referred to Hamilton (4 hrs by road, 30 mins by air). Starship Hospital, Auckland accepts admissions from greater Auckland and Northland regions, which are densely populated, Auckland being NZ's largest city.

   Both countries do not have formalized training in general paediatric surgery. It remains a component of the core surgical curriculum, however the emphasis remains inadequate resulting in fewer trained professionals, who are concentrated in the tertiary centres. There is a greater need for more trained surgeons and anaesthetists competent to deal with general paediatric surgery in provincial hospitals (in NZ) or District General Hospitals (in the UK) to cope with current pressures.

   In NZ, outreach clinical programmes have helped successfully improve specialist care to a degree. There are also specialist Maori health provision services to improve uptake in

[8] Pye J. Survey of general paediatric surgery provision in England, Wales and Northern Ireland. *Ann R Coll Surg Eng* 2008; 90: 193-197

healthcare services and to provide necessary support with cultural and communication issues.
The general paediatric services based in Starship comprise of a team of 5 paediatric surgeons, several registrars, a nurse specialist, a charge nurse and a nurse educator. This ensures a multi-disciplinary approach to patient care.

3. What role does culture play in managing healthcare of patients in New Zealand of a Maori descent?

Maoris, the indigenous people of NZ, represent 15% of the New Zealand population. However, 87% reside in the North Island, and nearly a ¼ of these live in Auckland[7]. Additionally, 35% of the total Maori population is under the age of 15[9] and therefore likely to require paediatric services.

When dealing with Maori patients, one must be very respectful and patient of their cultural beliefs. An interpreter would be appropriate to ensure mutual understanding. A widely used concept likens health to the four walls of a house- all components are required for good health. These include: *Taha Hinengaro* (thoughts and feelings), *Wairua* (recognising the intrinsic spiritual nature of man), *Taha Tinana* (physical health) *Taha Whanau* (the role of the extended family)[10]. The consultation may be opened with karakia (prayers) which may also be performed pre and post-op[11]. They are extremely spiritual, with *tapu* (sacredness) considered centric to nurturing the *iwi* and their resources. The human body is considered *tapu* and request return of body parts following surgery and childbirth, which are ritually buried. They are therefore also

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9 Statistics New Zealand, Tautauranga Aotearoa. 2007. Quickstats about Maori, revised 27 March 2007 Census 2006

[10]Buchanan, L. and Malcolm, J. (2010), The challenge of providing child health care in the Indigenous population of New Zealand. Journal of Paediatrics and Child Health, 46: 471–474. doi: 10.1111/j.1440-1754.2010.01838.x

[11] Durie M. *Tirohanga Maori Health Perspectives, Chapter 5. Whaiora, Maori Health Development.* Auckland: Oxford University Press, 1994; 2nd edn. 1998; 66–81.

reluctant to donation of organs and post-mortem procedures, due to loss of complete body parts that would be otherwise buried[12].

Research shows that Maori patients are in general poorer, deprived, and sicker than non-Maori's and their uptake of services is less in comparison. This has been rectified to some extent with increased services for the *iwi* (tribe) and the Crown as per the Treaty of Waitangi with local primary health care providers familiar and committed to Maori practices. They also sort out whanau accommodation; provide social care and negotiation of clinic and outpatient appointments on the patients behalf[13].

4. What makes a good paediatric surgeon? What have you learned from the attitude and skill set observed during your elective placement to apply to future practice?

This is my first experience of paediatric surgical services, and it has certainly been enjoyable and extremely insightful. The structure and delivery of services is well executed. The patterns of care provision and of staffing is similar to the UK, however the overall atmosphere is a lot more relaxed and supportive.

The surgical team is extremely friendly and has managed to make the clinical examination of patients a game- which usually results in patient compliance and a smile (if the patient isn't in pain!) More staff members per team ensures that there is constant cover in theatres, on ward and in clinics. The ward round includes debriefing of patients belonging to both teams- thus all staff members are informed of all patients. This is a stark contrast to the individual team rounds usually seen in the UK.

From what I have observed, sound knowledge, good surgical and decision-making skills, a friendly manner and ability to communicate make a great paediatric surgeon- and I have seen many examples of this. Perhaps the most inspiring quality that I have appreciated is the calm nature possessed by all team members, even when making difficult decisions. This is a very welcome change from the high-stress environments that I've normally encountered during my medical training so far. All members were extremely willing to teach, and did so where possible. I shall endeavor to apply these qualities to my own training in the future.

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[12] Tapsell R, Thomson R D, Hughes K. Maori culture and health. Coles medical practice in New Zealand 2009; chapter 8; 62-65

[13] Crengie S, Lay-yee R, Davis P. Maori providers: primary health care delivered by doctors and nurses, Ministry of Health, New Zealand 2004.

I have had the privilege to observe many complex procedures, observe and improve on my surgical knowledge and skills, and will be invaluable during my foundation training.