PAEDIATRIC EAR, NOSE, AND THROAT SURGERY: INCIDENCE PATTERNS AND PARENTAL EXPERIENCES

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A thesis submitted for the Degree of Doctor of Philosophy
(This thesis is submitted in total fulfilment of the requirement for this degree)

Discipline of Paediatrics
School of Medicine
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The University of Adelaide

2017
For Mitchell & James

The first was my inspiration to start;
The second, my courage to continue;
Both were my motivation to finish.
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<td>ABS</td>
<td>Australian Bureau of Statistics</td>
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<tr>
<td>AIHW</td>
<td>Australian Institute of Health and Welfare</td>
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<tr>
<td>AMWAC</td>
<td>Australian Medical Workforce Advisory Committee</td>
</tr>
<tr>
<td>AR-DRG</td>
<td>Australian Refined Diagnosis Related Groups</td>
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<td>ASOHNS</td>
<td>Australian Society of Otolaryngology Head and Neck Surgery</td>
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<td>cf.</td>
<td><em>conferre</em> (Latin), ‘compared to’</td>
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<td>CI</td>
<td>confidence interval</td>
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<td>DoHA</td>
<td>Department of Health and Ageing</td>
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<td>ENT</td>
<td>ear, nose, and throat</td>
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<td>ERP</td>
<td>Estimated resident population</td>
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<td>GIS</td>
<td>geographic information system</td>
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<td>ICD</td>
<td>International Classification of Diseases</td>
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<td>ICD-10-AM</td>
<td>International Classification of Diseases, Australian Modification, Version 10</td>
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<td>ICD-10-CA</td>
<td>ICD-10 with Canadian Enhancement</td>
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<td>ICD-10-CM</td>
<td>ICD-10 with Clinical Modifications</td>
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<td>ICD-10-GM</td>
<td>ICD-10 German Modification</td>
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<td>IRSID</td>
<td>Index of Relative Socio-economic Disadvantage</td>
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<td>ISAAC</td>
<td>Integrated South Australian Activity Collection</td>
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<td>NCCH</td>
<td>National Centre for Classification Health</td>
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<td>NHMD</td>
<td>National Hospital Morbidity Database</td>
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<td>NSW</td>
<td>New South Wales</td>
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<td>OR</td>
<td>odds ratio</td>
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<td>South Australia</td>
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<td>SEIFA</td>
<td>Socio-Economic Indexes for Areas</td>
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<td>SAR</td>
<td>standardised admission ratio</td>
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<td>SD</td>
<td>standard deviation</td>
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<td>TTI</td>
<td>tympanostomy tube insertion</td>
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<tr>
<td>USA</td>
<td>United States of America</td>
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Abstract

Background
Surgery on the ears, nose, and throat (ENT) is amongst the most frequently performed on children driven by the propensity of children to contract infectious diseases as their immature immune systems develop. Previously epidemiological reports presented incidence of surgical intervention in age-bands, typically in 5-year age groups, which when reporting on paediatric conditions, can obscure the reporting of those children most likely to undergo surgery. Reports also suggested that the geographical distribution of the children who undergo surgery may follow specific patterns reflecting socio-economic status or geographical locale. The purpose of the thesis was to gain a clear and in-depth understanding of the incidence of tonsillectomy, adenoidectomy, and myringotomy within South Australia; to investigate how these incidences compared to other states and territories within Australia, and to identify and understand the factors that underpin and influence these incidences.

Method
In order to address the aims of the thesis, a mixed methods approach was adopted. Three retrospective cross-sectional quantitative studies were conducted to 1) describe the epidemiology of the procedures within the South Australian paediatric population; 2) describe and compare the epidemiology of the procedures across the Australian paediatric population; and 3) to describe and compare the geographical distribution of the surgical incidences across the South Australia. A prospective cross-sectional qualitative study was conducted that utilised semi-structured interviews with parents/caregivers of children undergoing ENT surgical intervention to understand their experiences, perspectives, and expectations.
Results

This thesis has shown that South Australian children have a higher than expected incidence of these ENT surgical procedures as compared to other Australian states and territories. There are definitive disparities across Australia in the frequency and age at which children undergo the procedures, with the state in which a child lives clearly associated with the likelihood of undergoing the surgery. Specifically, within South Australia, the children who most often underwent tonsillectomy, adenoidectomy, and myringotomy with/without tympanostomy tube insertion were very young, more commonly were boys, and with private health insurance. Disruptions to the financial security and wellbeing of the child’s household - through school and childcare absences, parental work absences, cost of repeat doctors’ visits and medications, and the household’s overall quality of life - were identified as key factors influencing the decision of parents and caregivers to proceed with surgery.

Conclusion

Clearly, there are geographical disparities in the ENT surgical incidences in South Australia and these are influenced by the child’s age, gender and state in which they lived, with South Australian children undergoing these surgical interventions at a somewhat earlier age than the other states and territories examined in this thesis. These variations are most likely underpinned by difficulties in the affordability of healthcare and the financial pressures linked to lower socioeconomic status. This was further reinforced by the experiences described by parents and caregivers of children undergoing the surgeries; with financial security and disruptions to the family’s quality of life being key factors driving surgical intervention. These broader implications of childhood illness should be considered when planning improvements in the access to appropriate health services, and may have important implications for reducing the burden on the Australian healthcare system.
Thesis Declaration

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name, in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name, for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint-award of this degree.

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Signed: ____________________________ Dated: 23 February 2017
Grants and Awards

Northern Communities Health Foundation, South Australia, Program Grant, 2007, $75,000

ARCNSISS Summer School Scholarship 2009, *Airfares, Fees and Accommodation*
For attendance at the ARC National Spatially Integrated Social Science Summer School, University of Queensland, Brisbane, Queensland, February 2009.

Healthy Development Adelaide Travel Grant 2012, $1000

Australian Epidemiological Association Student Travel Award 2012, $450
Presentations


Paediatric ear, nose, and throat surgery: who, where, why and when? The University of Adelaide’s Faculty of Health Sciences Postgraduate Research Expo. National Wine Centre, Adelaide. Friday, 31 August 2012. [Poster]


Research Update. School of Paediatrics & Reproductive Health Higher Degree Research Seminar, Women’s & Children’s Hospital, North Adelaide. Wednesday, 11 July 2012. [Presentation]

An investigation into the variations in the Australian epidemiology of paediatric tympanostomy tube insertion. Australian Society for Medical Research SA Scientific Meeting, Adelaide Convention Centre. Wednesday, 6 June 2012. [Presentation]


Acknowledgements

The most worth-while thing is to try to put happiness into the lives of others.
Robert Baden-Powell

As I reflect on the course that this PhD candidature has taken, I realise that there are many people I must thank, but a few I must thank profusely. The six years that I have spent, firstly as a fulltime student and then as a part-time student, have been difficult and involved juggling multiple roles at once. Mother, wife, and student – usually in that order. I have had to navigate kindergarten and school routines and all that running a household entails. I had my laptop stolen – twice. And then, following the birth of my second child, I shifted from researcher to statistic as I dealt with a child who entered the health system. After three hospital stays – including all three surgical procedures examined in this thesis – and years of appointments and tests, my family finally has some resolution and my child has returned to good health. So it is that I know that my thesis is relevant, important, and provides an accurate account of the quality of life issues surrounding these conditions.

My family

So with those sentiments in mind, firstly, and most importantly, I would like to thank my family for their ongoing love, support, and encouragement. First and foremost, thank you Chris, for giving me the opportunity to undergo my candidature, for continually encouraging and supporting me, and for putting up with me throughout the process.

I want to thank my beautiful sons, Mitchell and James, for being patient while mummy spent time with the computer completing “my big book”, and for giving me welcome distraction and cuddles when I needed them.

I want to thank all my friends and family who I have neglected throughout my candidature, but who supported and encouraged me nonetheless.

Especially, I want to thank my grandparents: Kathleen and (the late) Stanley Bennett for their ongoing support, and Mabel and (the late) Kenneth Stephens for their love and encouragement - Grandad, thank you for always being interested, your questions helped me pinpoint the reason of this thesis; I wish you were here to see it finished.
My supervisors
Many thanks to Associate Professor Peter Baghurst, PhD, who provided valued advice and expertise on epidemiological and statistical analyses, and who taught me to use programmed statistical software. I also thank Professor Maree O’Keefe, FRACP, PhD, who provided guidance, insight and academic knowledge - your advice and expertise on qualitative research were invaluable. Thank you both for your tolerance and assistance as I progressed through the PhD journey.

I am truly indebted to my external supervisor, Mr Mark Schembri, FRACS, who provided otorhinolaryngological expertise and a surgeon’s point-of-view throughout the research process. His help both professionally and personally has been most appreciated as I struggled to juggle both an academic approach to this body of research and a parent’s impassioned stance.

Other special people who helped along the way ...
I would like to thank the Northern Communities Health Foundation for their financial support without which I could not have completed my PhD.

The staff of the Women’s and Children’s Hospital Ear, Nose and Throat Outpatient Department: including the surgeons who allowed me the privilege of attending their clinics, and the nursing staff for their assistance during the recruitment of my study population. Special thanks to Maureen Thorpe, RN, who provided particular assistance.

Mr David Coombe and Dr Julie Franzon, both formerly of GiSCA, University of Adelaide, for advice on all things relating to maps, geographical analysis, and the use of arcGIS.

Mick Draper, University of Adelaide Librarian, for advice and expertise in the development of my literature searches.

I would like to thank my fellow PhD candidates for their support and friendship.

My special thanks to Amelia and Lisa for reading chapters to check my grammar and spelling. Thank you for your support and encouragement that kept me going when I thought I may never finish.

Finally, to all the parents, caregivers, and children who allowed me the opportunity to listen to their stories and share in their experiences. I now understand wholeheartedly the struggles of having one unwell little person in the household. I thank you all most sincerely.