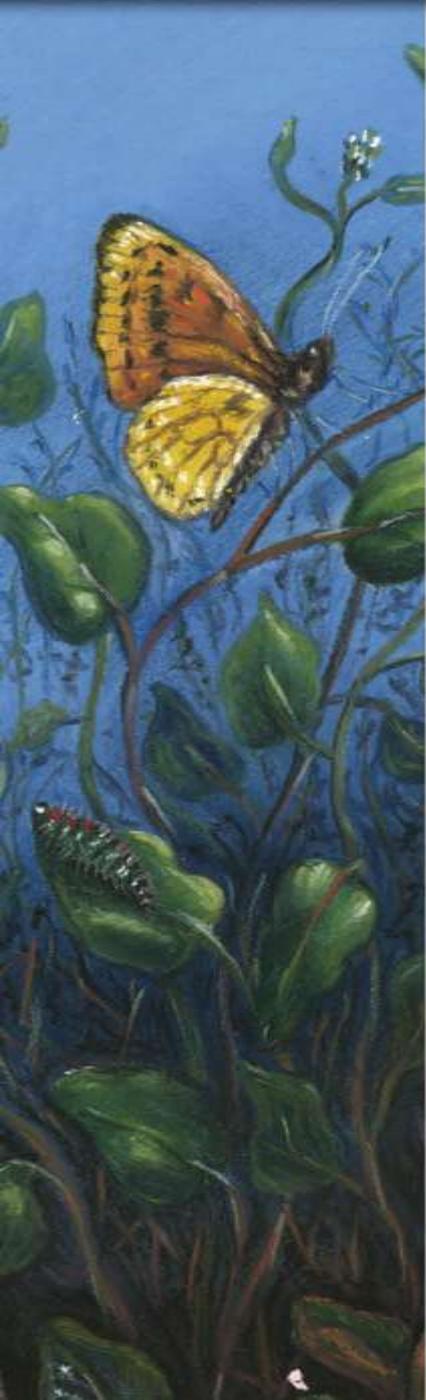




INTRODUCTION AND OVERVIEW



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BACKGROUND AND AIMS

Background

The 2006 Disability Survey [1] estimated that 10% of New Zealand children aged 0–14 years had a disability, with the most common disability cited (5% of all children) being the requirement for special education. A further 4% of children had chronic health conditions such as severe asthma, cerebral palsy, or diabetes, while 2% had a psychiatric or psychological disability. Around half (52%) of disabled children in the Survey had a disability arising from a condition that had existed since birth, while 26% had disabilities that were caused by a disease or illness, and 3% by an injury [1].

More recently, the 2011/12 NZ Health Survey [2] estimated that 20.7% of New Zealand children aged 2–14 years were overweight and that 10.3% were obese. Further, it was found that the proportion of children who were obese had increased significantly since the 2006/07 NZ Health Survey. Such increases are of concern, as in addition to being associated with conditions like type 2 diabetes and slipped upper femoral epiphysis in adolescence [3,4], childhood obesity increases the risk of high blood pressure, coronary heart disease, and stroke in later life [3,5].

Aims of this Report

While such surveys provide very broad prevalence estimates, their lack of clinical precision means it is very difficult to obtain a detailed understanding of the nature and causes of disabilities and chronic conditions (including obesity) in New Zealand children and young people. This paucity of information in turn, makes it difficult for those working in the health sector to plan services to meet future demand, or to develop evidence-based strategies for prevention. Despite this, children and young people with disabilities and chronic conditions require a range of health and disability support services to reach their full potential, and it is undesirable that a paucity of data should preclude them featuring prominently in prioritisation, planning and resource allocation decisions.

With these issues in mind, this report collates a range of routinely collected data sources with a view to:

1. Estimating the prevalence of conditions arising in the perinatal period (e.g. preterm births, congenital and chromosomal anomalies) which may lead to greater health and disability support service demand during childhood and adolescence
2. Identifying the numbers of children and young people with specific chronic conditions and disabilities, who are accessing secondary healthcare services
3. Reviewing the distribution of overweight and obesity and its determinants (nutrition, physical activity) in children and young people

In-Depth Topics

In addition, two issues were selected for more in-depth review by participating DHBs at the beginning of the year, with one of these issues, the treatment of obesity in children and adolescents, being split onto two parts due to the large volume of literature in this area. This year's in depth topics are thus:

1. **The Determinants and Consequences of Overweight and Obesity:** This in-depth topic begins by providing some background information on the distribution of obesity, including its prevalence in different population groups, before reviewing the range of definitions for overweight and obesity currently used in the literature. The natural history of obesity over the lifespan is then briefly described, before the determinants of obesity are reviewed and the short and long term consequences discussed.
2. **The Treatment of Obesity in Children and Adolescents:** This in depth topic provides information on evidence-based interventions for the treatment of obesity in children



and adolescents. It begins by discussing some of the difficulties associated with identifying and engaging children (and their parents) who are candidates for weight management interventions, before considering the findings of a 2009 Cochrane review of obesity interventions. Insights from other relevant reviews are then discussed, before current New Zealand interventions are summarised. The evidence for the effectiveness of brief primary care interventions is then considered, with a number of individual primary care programmes being presented. The in-depth topic concludes with a brief summary of the key findings from the literature in this area.

- 3. Children of Parents with Mental Illness and Alcohol and Other Addictions (COPMIA):** This in-depth topic considers issues experienced by the children of parents with mental health issues and alcohol and other addictions and identifies evidence-based programmes that could be implemented to reduce risk and enhance resilience in these children. It begins by reviewing the New Zealand prevalence and health and support needs of children of parents with mental illness and addiction issues, as well as the impacts on their health, development and psycho-social wellbeing. Optimal service delivery models are then reviewed from an international perspective, with an example of a best practice systems model being presented. New Zealand strategies and plans are then briefly summarised, along with examples of current COPMIA services in this country. The review concludes with a series of recommendations as to how services for COPMIA might be improved locally.

REPORT STRUCTURE AND CONTENT

This report is the third of a three-part series on the health of children and young people in the South Island and fits into the reporting cycle as follows:

Year 1	The Health Status of Children and Young People
Year 2	The Determinants of Health for Children and Young People
Year 3	Children and Young People with Chronic Conditions and Disabilities

As previously, this report is based on an *Indicator Framework* [6] developed by the NZ Child and Youth Epidemiology Service, with all of the indicators in the *Chronic Conditions and Disabilities* stream being updated in this year's edition. These indicators have been grouped into four sections, as outlined below, with an in-depth topic on the children of parents with mental health issues and alcohol and other addictions (COPMIA) forming the fifth and final section.

Section 1: Conditions Arising in the Perinatal Period

This section is divided into two parts, with the first reviewing two key perinatal outcomes: fetal deaths and preterm births. The second part begins with a brief overview of antenatal and newborn screening, before using hospital birth data to review the prevalence of congenital anomalies in newborn babies. This review is spread across four chapters, with the first exploring the range of anomalies (from minor to severe) identified in hospital born babies. Subsequent chapters provide additional detail on three anomalies which are usually identifiable at birth, and which may lead to significant health and/or disability support service utilisation. These are cardiovascular anomalies, chromosomal anomalies including Down syndrome, and spina bifida and other neural tube defects.

Section 2: Other Disabilities

This section begins with a review of children and young people with permanent hearing loss using NZ Deafness Notification Database and Newborn Hearing Screening data. Then, as a result of a paucity of other routinely collected data sources, it uses hospital admission data to explore access to secondary health services in children and young people aged 0–24 years with any mention of cerebral palsy or autism spectrum disorder in any of their first 15 diagnoses. For each condition, the main reasons for hospital admission are explored, along with their distribution by age, ethnicity and gender.

Section 3: Chronic Medical Conditions

This section reviews hospital admissions for children aged 0–14 years with eczema and dermatitis, as well as hospital admissions and mortality for children and young people aged 0–24 years with inflammatory bowel disease, cystic fibrosis, type 1 diabetes, and epilepsy. Again the main reasons for hospital admission are described, along with their distribution by age, ethnicity and gender. Cancer incidence and mortality in children and young people aged 0–24 years is then explored using data from the NZ Cancer Registry and the National Mortality Collection.

Section 4: Obesity, Nutrition and Physical Activity

This section is divided into two parts, with the first reviewing overweight and obesity in children and young people and the second reviewing breastfeeding, nutrition and physical activity. Part 1 begins with an in-depth topic which explores the determinants and consequences of obesity in children and young people, before reviewing the distribution of overweight and obesity and its complications using 2011/12 NZ Health Survey, Youth'12 Survey and hospital admission data. Part 1 concludes with a second in-depth topic, which explores the treatment of obesity in children and adolescents. Part 2 then begins with a review of breastfeeding and the early introduction of solids using Plunket and 2011/12 NZ Health Survey data, before exploring a range of nutrition and physical activity indicators using 2011/12 NZ Health Survey and Youth'12 Survey data.

Section 5: Children of Parents with Mental Illness and Alcohol and Other Addictions (COPMIA)

This in-depth topic considers the current issues experienced by the children of parents with mental health issues and alcohol and other addictions in New Zealand and identifies evidence-based effective programmes that could be implemented to reduce risk and enhance resilience in these children.

Reviews of Evidence-Based Interventions

Each of the chapters in this report concludes with a brief overview of local policy documents and evidence-based reviews which consider population level approaches to prevention or management. **Appendix 1** provides an overview of the methodology used to develop these reviews. As previously, the quality and depth of evidence available varied from indicator to indicator (e.g. a large number of reviews were available on the medical management of those with cystic fibrosis, but few (with the exception of folate for neural tube defects) were available on the primary prevention of congenital anomalies).

Notes on Data Quality and the Signalling of Statistical Significance

One of the main purposes of this report is to inform health needs assessment. Thus, as previously, where high quality data was not available, yet an issue was deemed to be of public health importance, “bookmark” indicators have been included (e.g. hospital admissions for those with autism spectrum disorders) so that the needs of these children and young people do not fall below the public health radar. In such cases, the reader is urged to read the cautions on interpretation which accompany these indicators, in order to gain a better understanding of the strengths and weaknesses of the data used.

Further, **Appendix 2** outlines the rationale for the use of statistical significance testing in this report and **Appendices 3–5** contain information on the data sources used to develop each indicator. Readers are urged to be aware of the contents of these Appendices when interpreting the information in this report.

In particular (as outlined in **Appendix 2**), in order to assist the reader to determine whether tests of statistical significance have been used in a particular section, the statistical significance of the associations presented has been signalled in the text with the words *significant*, or not *significant* in italics. Where the words *significant* or not *significant* do not appear in the text, then the associations described do not imply statistical significance or non-significance.



OVERVIEW OF REPORT'S KEY FINDINGS

Previous reports in this series have focused on infectious and respiratory diseases, where hospital admissions and mortality have tended to track in a manner consistent with the region's demographic profile (e.g. with rates being much higher for DHBs with a high proportion of children living in the most deprived (NZDep deciles 9–10) areas). However, for chronic conditions and disabilities the picture is more complex, as the prevalence of many of these conditions is not influenced by socioeconomic factors. Rather factors such as genetics (e.g. cystic fibrosis) and maternal age (e.g. some congenital anomalies) play a much greater role. Further for many chronic conditions (e.g. autism spectrum disorder, cancer), the underlying cause is unknown in the vast majority of cases.

Further adding to the complexity is the role that local health services play, with the majority of care for children and young people with chronic conditions and disabilities being delivered in primary care or the outpatients setting. In this context, local service delivery configurations (e.g. which children are admitted vs. managed in outpatients for various procedures or conditions) may also heavily influence hospital admission rates.

Thus when considering **Table 1**, which provides an overview of the indicators in this year's report, and the key findings as they relate to the South Island DHBs, it is difficult to make any overall generalisations about the way each DHB's health outcomes are tracking with respect to national rates. Rather what is presented is a mixed picture, with rates for some South Island DHBs being higher than the New Zealand rate for some conditions, and lower for others, but with no consistent pattern emerging across the region. Thus for this year's report, it will be necessary to review **Table 1** on a condition by condition basis, in order to obtain a broad overview of what is occurring within the region.

Concluding Comments

This report reviews the prevalence of conditions arising in the perinatal period that may increase the demand for health and disability support services, as well as the secondary health service utilisation patterns of children and young people with chronic conditions and disabilities. Further, it aims to provide some insights into the consequences and management of overweight and obesity in children and young people, as well as the needs of children with parents with mental health issues and alcohol and other addictions.

While the data presented are at times imperfect, and at best only provide a glimpse of the health needs of these diverse groups of children and young people, the current paucity of data should not preclude DHBs reviewing the health and disability support services available locally (including those with a health promotion focus), with a view to considering whether further improvements are required within the region.

Further, while high quality evidence (e.g. from randomised controlled trials) is often lacking, there is nevertheless sufficient information to direct future initiatives in many areas. These include the development of integrated services for the children of parents with mental health issues and alcohol and other addictions, and interventions for the prevention and management of overweight and obesity in children and young people.

Table 1. Overview of the Health of Children and Young People with Chronic Conditions and Disabilities in the South Island

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
Conditions Arising in the Perinatal Period			
Perinatal Conditions	Fetal Deaths	<ul style="list-style-type: none"> • During 2006–2010, unspecified cause was the most frequent fetal cause of intermediate fetal deaths (IFD, 20 to 27 weeks gestation), followed by prematurity/LBW and congenital and chromosomal anomalies. • Unspecified cause was the most frequent fetal cause of late fetal deaths (LFD, 28+ weeks gestation) followed by malnutrition/slow fetal growth. Congenital anomalies still made a significant contribution. • Fetal deaths exhibited a J-shaped distribution with gestational age, with a peak at <25 weeks, and rates increasing again after 37 weeks. Fetal deaths from congenital anomalies and prematurity/LBW were highest in babies <25 weeks, while unspecified fetal deaths increased rapidly after 37 weeks. • During 2006–2010, there were no <i>significant</i> gender, ethnic, or NZDep06 differences in IFD rates. Mortality was <i>significantly</i> higher for the babies of younger (<25 years) and older (35+ years) women, than for those 30–34 years. • During 2006–2010, LFDs were <i>significantly</i> higher for Pacific > Māori > European/Other babies, and babies from average to deprived (NZDep deciles 5–10) areas. Rates were <i>significantly</i> higher for babies of teenage women, than those 30–34 years. 	<ul style="list-style-type: none"> • In the South Island DHBs during 2006–2010, congenital and chromosomal anomalies (combined) and unspecified cause were the most frequently listed main fetal causes of IFD, although prematurity/low birth weight also made a contribution. • Unspecified cause was the most frequently listed fetal cause of LFD in all South Island DHBs, although intrauterine hypoxia, congenital and chromosomal anomalies and malnutrition/ slow fetal growth also made a contribution. • In the South Island DHBs, IFD and LFD rates were not <i>significantly</i> different from the New Zealand rate.

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
	Preterm Birth in Singletons	<ul style="list-style-type: none"> • During 2000–2012, singleton preterm birth rates at 20–27, 28–31, and 32–36 weeks were static. The actual number of preterm babies born increased however, as the result of a rising birth rate. The largest increases were in those born at 32–36 weeks. • During 2008–2012, preterm birth rates (20–36 weeks) were <i>significantly</i> higher for males and for Māori babies. Rates were also <i>significantly</i> higher for those in more deprived (NZDep deciles 7–10) areas, and for the babies of younger (<25 years) and older (35+ years) mothers, than for those aged 25–29 years. • When broken down by gestational age, the excess risk of preterm birth seen for Māori, Pacific and Asian/Indian babies, the babies of teenage mothers, and those from the more deprived areas, was greatest in births at lower gestations. 	<ul style="list-style-type: none"> • In the South Island during 2008–2012, on average 82 Nelson Marlborough, 35 South Canterbury, 379 Canterbury, 26 West Coast and 248 Southern babies per year were born <37 weeks gestation, with the majority being in the 32–36 weeks category. • Preterm birth rates at 20–27, 28–31 and 32–36 weeks in South Canterbury, Canterbury, the West Coast and Southland were not <i>significantly</i> different from NZ rates. Preterm births at 32–36 weeks in Nelson Marlborough were <i>significantly</i> lower than the NZ rate, while in Otago rates were <i>significantly</i> higher. • In the South Island DHBs during 2000–2012, there were no differences in preterm birth rates between Māori and European/Other babies.
Perinatal Conditions	Preterm Birth in Multiple Pregnancies	<ul style="list-style-type: none"> • During 2008–2012, preterm birth rates were 6.0% for singletons, 55.1% for twins and 98.7% for triplets. The risk of preterm birth was 9.13 (95% CI 8.92–9.35) times higher for twins and 16.34 (95% CI 16.02–16.68) times higher for triplets, than for singletons. • During 2000–2012, preterm birth rates were static in singletons and triplets. Rates in twins increased, with the majority of this increase occurring after 2008. • During 2008–2012, there was no <i>significant</i> gender, NZDep06, or maternal age differences in preterm birth rates in twins. Rates for Pacific twins however, were <i>significantly</i> (albeit marginally) lower than for European/Other babies. 	

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
Congenital Anomalies Evident at Birth	Congenital Anomalies Evident at Birth	<ul style="list-style-type: none"> • During 2008–2012, a large number of congenital anomalies were identified at birth, with these ranging in severity from minor (e.g. skin tags, non-neoplastic nevus) to anomalies which were incompatible with life (e.g. anencephaly). • While the largest absolute numbers of babies with congenital anomalies were born to women aged 30–34 years, congenital anomaly rates rose with increasing maternal age, with the highest rates being seen in the babies of mothers aged 40+ years. The babies of mothers aged 40+ years had congenital anomaly rates that were 1.32 (95% CI 1.20–1.44) times higher than the babies of teenage mothers. • The proportion of babies with one or more congenital anomalies identified at birth was <i>significantly</i> higher for males, Asian/Indian and Pacific > European/Other > Māori babies and those from less deprived (NZDep06 deciles 1–2 vs. 5–10) areas. 	<ul style="list-style-type: none"> • In the South Island DHBs during 2008–2012, a large number of congenital anomalies were identified at birth, with these ranging in severity from minor (e.g. tongue tie) through to serious (e.g. malformations of the great arteries). • On average during 2008–2012, 61 Nelson Marlborough, 14 South Canterbury, 256 Canterbury, 17 West Coast, 96 Otago and 70 Southland babies per year (range 2.3%–5.0% of all births) had one or more congenital anomalies identified at birth. • Rates in Nelson Marlborough, South Canterbury and Canterbury were <i>significantly</i> lower than the NZ rate, while rates in the West Coast, Otago and Southland were not significantly different. • It is unclear whether DHB vs. NZ differences in congenital anomaly rates reflect real differences in the underlying prevalence of congenital anomalies, or differences in the thoroughness with which minor congenital anomalies are recorded in the clinical notes or the National Minimum Dataset.
Congenital Anomalies Evident at Birth	Congenital Heart Disease	<ul style="list-style-type: none"> • During 2008–2012, patent ductus arteriosus (PDA) was the most frequent cardiovascular (CVS) anomaly identified at birth, with 64.2% of PDAs being in preterm babies with no other CVS anomalies. Atrial septal defects (ASDs) and ventricular septal defects (VSDs) were the next most frequent causes. • There were no <i>significant</i> ethnic differences in the proportion of babies born with CVS anomalies. Rates were <i>significantly</i> higher however, for babies from the least deprived (NZDep06 deciles 1–2 vs. deciles 5–10) areas, for males, and for those with older (40+ years vs. <20 years) mothers. 	<ul style="list-style-type: none"> • In the South Island DHBs during 2008–2012, PDA was the most frequent CVS anomaly identified at birth, although many (range 45.5%–80.0%) were in preterm babies with no other CVS anomalies. VSDs and ASDs were the next most frequent anomalies identified. • On average 7.6 Nelson Marlborough, 1.6 South Canterbury, 38.2 Canterbury, 2.6 West Coast, 20.0 Otago and 10.6 Southland babies each year (excluding isolated preterm PDAs) were born with one or more CVS anomalies, with rates in Nelson Marlborough, Canterbury, the West Coast and Southland not being <i>significantly</i> different from the NZ rate. In contrast, rates in South Canterbury were <i>significantly</i> lower than the NZ rate, while in Otago rates were significantly higher.

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
	Down Syndrome	<ul style="list-style-type: none"> • During 2000–2012, on average 53 babies per year were identified as having Down syndrome at birth. • During 2008–2012, 45.9% of babies with Down syndrome had one or more cardiovascular anomalies, with the most frequent being patent ductus arteriosus and atrial septal defects. • There were no <i>significant</i> NZDep06, ethnic or gender differences in the proportion of babies identified with Down syndrome at birth. Rates for the babies of mothers aged 40+ years however were 25.7 (95% CI 9.36–70.45) times higher than for teenage mothers. 	<ul style="list-style-type: none"> • During 2008–2012, 4 Nelson Marlborough, <3 South Canterbury, 23 Canterbury, 4 West Coast, 11 Otago and 8 Southland babies were identified as having Down syndrome at the time of birth, with a small number of babies also having other chromosomal anomalies. • The proportion of babies with Down syndrome in each of the South Island DHBs/areas was not <i>significantly</i> different from the NZ rate.
	Neural Tube Defects (NTDs)	<ul style="list-style-type: none"> • During 2000–2012, on average 13.5 babies per year had one or more NTDs identified at birth. Large year to year variations, possibly due to small numbers made trends difficult to interpret. • During 2008–2012, 79 NTDs were identified at birth (spina bifida (n=53), anencephaly (n=13), encephalocele (n=13)), with on average 16 NTDs identified per year. NTDs accounted for 17.8% of all nervous system anomalies during this period. • There were no <i>significant</i> ethnic, NZDep06 or gender differences in the proportion of babies born with NTDs. The highest rates however, were seen in Pacific babies, the babies of teenage mothers, and those born into the most deprived (NZDep06 deciles 9–10) areas. 	<ul style="list-style-type: none"> • In the South Island DHBs (combined) during 2008–2012, 5 cases of spina bifida and 4 of anencephaly/encephalocele were identified at birth, with these accounting for 8.9% of all nervous system anomalies during this period. • The proportion of babies with one or more NTDs identified at birth in Canterbury was not <i>significantly</i> different from the NZ rate, although in the remaining DHBs numbers were too small to make any meaningful comparisons.
Other Disabilities			
Other Disabilities	Permanent Hearing Loss: Deafness Notification Database (DND)	<ul style="list-style-type: none"> • During 2012, 3% of notifications to the DND were for profound hearing losses, 1% for severe losses, 42% for moderate losses and 54% for mild losses. • During 2012, when unilateral, acquired, mild, and overseas born cases were excluded, the average age at confirmation of a hearing loss was 50 months, although the average age of suspicion was much earlier (42 months). • During 2010–2012, the largest numbers of notifications to the DND were for babies <1 year. Numbers then dropped away during the preschool years. A second peak was evident at five years of age, likely as a result of the B4 School Check. The peak in notifications in babies <1 year increased during this period (2010 n=23; 2011 n=34; 2012 n=38) possibly as a result of the progressive roll out of newborn hearing screening. 	<ul style="list-style-type: none"> • In the South Island during 2012, 10 Nelson Marlborough, 7 South Canterbury, 23 Canterbury and 23 Southern children were notified to the Deafness Notification Database.

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
	Permanent Hearing Loss: Newborn Hearing Screening	<ul style="list-style-type: none"> During 1st October 2011–31st March 2012, the caregivers of 88.6% of eligible babies consented to newborn hearing screening. Of those completing screening, 92.8% did so at <1 month of age, with 1.5% receiving an audiology referral, and 5.1% having risk factors for delayed onset/progressive hearing loss (e.g. family history, craniofacial anomalies, and intrauterine infections) which warranted follow up over time. During the same period, 254 babies commenced an audiology assessment, with 85.9% completing their assessment by 3 months of age. During this period, 30 babies were identified as having a permanent congenital hearing loss, while 73 had a conductive hearing loss. 	<ul style="list-style-type: none"> In the South Island DHBs during 1st October 2011–31st March 2012, the majority (range 71.6%–99.6%) of the caregivers of eligible babies consented to newborn hearing screening. Of those completing screening, over 90% (range 95.0%–99.3%) did so <1 month, with 1.6% of Nelson Marlborough, 0.7% of West Coast, 1.4% of Canterbury, 0.7% of South Canterbury and 1.2% of Southern babies receiving an audiology referral. A small proportion (range 2.6%–5.4%) had risk factors for delayed onset/progressive hearing loss. During this period, 2 Nelson Marlborough, 2 Canterbury, 1 South Canterbury and 1 Southern baby were identified as having a permanent congenital hearing loss, with a small number also having a conductive hearing loss. No information was available from the West Coast.
Other Disabilities	Cerebral Palsy	<ul style="list-style-type: none"> During 2008–2012, only 10.4% of acute and arranged hospitalisations in children and young people with cerebral palsy (CP) had CP listed as their primary reason for admission. Instead 17.5% of hospitalisations were for epilepsy or convulsions and 22.3% for respiratory diseases. Acute and arranged admissions (vs. waiting list) made up 48.6% of all admissions in those with CP. 51.4% of admissions in those with CP were from the waiting list, with injections into ligaments, tendons, or soft tissue accounting for 42.2% of waiting list admissions. Orthopaedic procedures collectively were the leading reasons for waiting list admissions, followed by dental procedures. CP admissions increased during infancy, reached a peak at three years, and then declined. In contrast, mortality was more evenly distributed across the age range. During 2006–2010, 78 children and young people had CP listed as their main underlying cause of death, or as a contributory cause. CP admissions were <i>significantly</i> higher for males and for Pacific > European/Other > Māori > Asian/Indian children and young people. 	<ul style="list-style-type: none"> In the South Island during 2008–2012, 52 Nelson Marlborough, 13 South Canterbury, 227 Canterbury, 11 West Coast, 72 Otago and 42 Southland children and young people were hospitalised with a diagnosis of cerebral palsy. Admission rates per 100,000 in Canterbury were <i>significantly</i> higher than the NZ rate, while in South Canterbury and Southland rates were <i>significantly</i> lower. Rates in the remaining DHBs were not <i>significantly</i> different from the NZ rate.

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
	Autism Spectrum Disorder	<ul style="list-style-type: none"> • During 2008–2012, autism and other pervasive developmental disorders (APDD) were listed as the primary diagnosis in only 14.3% of hospitalisations for children and young people with APDD in any of the first 15 diagnoses. Of those with APDD listed as the primary diagnosis, 64.0% had childhood autism, 22.8% had Asperger syndrome and 13.3% had other pervasive developmental disorders. Overall, 23.8% of admissions in those with APDD were for dental caries/oral health conditions, and 8.5% were for epilepsy or convulsions • APDD admissions increased during the preschool years, reached a peak at eight years, and then declined. During 2006–2010, 5 children or young people had APDD listed as the main underlying cause of death, or as a contributory cause, with all deaths being in those aged >10 years. • APDD admissions were <i>significantly</i> higher for males. Admissions were also <i>significantly</i> higher for European/Other > Māori and Asian/Indian > Pacific children and young people. 	<ul style="list-style-type: none"> • In the South Island during 2008–2012, 78 Nelson Marlborough, 14 South Canterbury, 116 Canterbury, 12 West Coast, 58 Otago and 18 Southland children and young people were hospitalised with a diagnosis of autism or other pervasive developmental disorders. • Admission rates per 100,000 in Nelson Marlborough were <i>significantly</i> higher than the NZ rate, while in Canterbury, Otago and Southland rates were <i>significantly</i> lower. Rates in the remaining DHBs were not <i>significantly</i> different from the NZ rate.
Chronic Medical Conditions			
Chronic Medical Conditions	Eczema and Dermatitis	<ul style="list-style-type: none"> • During 2008–2012, only 28.7% of hospitalisations in children with eczema or dermatitis listed their first 15 diagnoses, had eczema or dermatitis listed as the primary reason for admission. Atopic and other dermatitis (12.6%) and infective dermatitis (10.8%) were the most frequent primary diagnoses assigned to those with eczema or dermatitis, while bronchiolitis and asthma and wheeze were the most frequent non-eczema related reasons for admission. • Admissions for infective dermatitis and other forms of eczema and dermatitis were highest in infants <1 year, with rates then tapering off during the preschool years. Admissions were lowest amongst children over five years of age. • Admissions for those with a primary diagnosis of infective eczema, or other eczema and dermatitis were both <i>significantly</i> higher in males than females. Rates were also <i>significantly</i> higher for Māori and Pacific > Asian/Indian > European/Other children. Admissions for both outcomes increased for all ethnic groups during 2000–2012. 	<ul style="list-style-type: none"> • In the South Island DHBs during 2008–2012, only a minority (range 12.5%–30.1%) of children hospitalised with eczema or dermatitis in any of their first 15 diagnoses, had eczema or dermatitis listed as the primary reason for admission. Atopic and other dermatitis and infective dermatitis were the most frequent primary diagnoses in those with eczema or dermatitis in all South Island DHBs/areas. • During this period, 61 Nelson Marlborough, 15 South Canterbury, 236 Canterbury, 4 West Coast, 49 Otago and 65 Southland children were hospitalised with a primary diagnosis of eczema or dermatitis. Admission rates per 100,000 in all South Island DHBs were <i>significantly</i> lower than the NZ rate, with the exception of Southland, where rates while lower, were not <i>significantly</i> different from the NZ rate.

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
	Inflammatory Bowel Disease	<ul style="list-style-type: none"> • During 2008–2012, 82.0% of acute/arranged hospitalisations in children and young people with Crohn’s disease in any of their first 15 diagnoses, had Crohn’s listed as the primary reason for admission. The remaining 18.0% were for a range of conditions, including anal/rectal abscesses and fistulae and intestinal obstructions. For waiting list admissions, injections or infusions of therapeutic substances (38.4%) and fiberoptic colonoscopies (27.6%) were the most frequent primary procedures listed. • 85.0% of acute and arranged hospitalisations in children and young people with ulcerative colitis (UC) in any of their first 15 diagnoses, had UC listed as their primary reason for admission. Of those admitted from the waiting list, fiberoptic colonoscopies (60.9%) and injections or infusions of therapeutic substances (15.8%) and were the most frequent primary procedures listed. • Admissions for Crohn’s were <i>significantly</i> higher for males, although no <i>significant</i> gender differences were evident for UC. Admissions for Crohn’s were also <i>significantly</i> higher for European/Other > Asian/Indian > Māori > Pacific children and young people, while rates for UC were <i>significantly</i> higher for European/Other > Asian/Indian > Māori and Pacific children and young people. 	<ul style="list-style-type: none"> • In the South Island during 2008–2012, 33 Nelson Marlborough, 13 South Canterbury, 153 Canterbury, 12 West Coast, 58 Otago and 37 Southland children and young people were hospitalised with a diagnosis of Crohn’s disease. Admission rates per 100,000 in Nelson Marlborough, Canterbury, the West Coast and Southland were <i>significantly</i> higher than the NZ rate, while rates in South Canterbury and Otago were not <i>significantly</i> different. • Similarly, 10 Nelson Marlborough, 6 South Canterbury, 30 Canterbury, <3 West Coast, 24 Otago and 12 Southland children and young people were hospitalised with a diagnosis of ulcerative colitis. Admission rates per 100,000 in Otago were <i>significantly</i> higher than the NZ rate, while in Canterbury rates were <i>significantly</i> lower. Rates in the remaining DHBs (with the exception of the West Coast, where small numbers precluded a valid analysis) were not <i>significantly</i> different from the NZ rate.
Chronic Medical Conditions	Cystic Fibrosis	<ul style="list-style-type: none"> • During 2008–2012, 83.7% of admissions in children and young people with cystic fibrosis (CF) listed in any of their first 15 diagnoses, had CF listed as the primary reason for admission. The remainder were for a variety of infectious and respiratory diseases, digestive system problems and other issues. • Of those with CF listed as the primary diagnosis, the majority (92.6%) also had a secondary diagnosis. Of these, unspecified acute lower respiratory infections were the most frequent, followed by a range of infectious (e.g. <i>S. aureus</i>, aspergillosis), respiratory (e.g. bronchiectasis) and other conditions. • CF admissions were relatively evenly distributed across the age range, although a small peak was evident during adolescence. Mortality was more common in the late teens and early twenties, with 20 young people having CF listed as the main underlying or a contributory cause of death in 2006–2010. • CF admissions were <i>significantly</i> higher for females and for European/Other > Māori > Pacific and Asian/Indian children and young people. 	<ul style="list-style-type: none"> • In the South Island during 2008–2012, 21 Nelson Marlborough, 5 South Canterbury, 62 Canterbury, 3 West Coast, 16 Otago and 8 Southland children and young people were hospitalised with a diagnosis of cystic fibrosis. • Admission rates per 100,000 in Nelson Marlborough, South Canterbury, Canterbury and Southland were <i>significantly</i> higher than the NZ rate, while in the West Coast and Otago rates were not <i>significantly</i> different.

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
	Type 1 Diabetes	<ul style="list-style-type: none"> • During 2008–2012, 70.0% of hospitalisations for children and young people with type 1 diabetes had a diabetes-related primary diagnosis, with ketoacidosis/lactic acidosis +/- coma accounting for 33.3% and type 1 diabetes without complications for 17.7% of admissions. A further 30.0% were for diagnoses other than diabetes, including gastroenteritis, injuries and poisoning, and pregnancy and childbirth. • Admissions increased during childhood, reached a peak at 14 years, and then fluctuated. Mortality was highest amongst those in their late teens and early twenties, with 15 young people having type 1 diabetes listed as the main underlying cause of death, or as a contributory cause, during 2006–2010. • Admissions were <i>significantly</i> higher for females and for European/Other > Māori and Pacific > Asian/Indian children and young people. 	<ul style="list-style-type: none"> • In the South Island DHBs during 2008–2012, the majority (range 64.6%–78.5%) of hospital admissions in children and young people with type 1 diabetes, had a diabetes-related primary diagnosis. Ketoacidosis/lactic acidosis +/- coma was the most frequent primary diagnosis in those with type 1 diabetes in all South Island DHBs. • During this period, 95 Nelson Marlborough, 51 South Canterbury, 375 Canterbury, 28 West Coast, 160 Otago and 107 Southland children and young people were hospitalised with a diagnosis of type 1 diabetes. Admission rates per 100,000 in South Canterbury, Otago and Southland were <i>significantly</i> higher than the NZ rate, while rates in the remaining DHBs were not <i>significantly</i> different.
Chronic Medical Conditions	Epilepsy	<ul style="list-style-type: none"> • During 2008–2012, 75.3% of hospitalisations in children and young people with epilepsy or status epilepticus had an epilepsy-related primary diagnosis. Generalised idiopathic epilepsy (24.4%) and unspecified epilepsy (20.1%) were the most frequent epilepsy-related diagnoses. A further 24.7% were for unrelated conditions, with respiratory conditions and injury and poisoning being the most frequent diagnoses. • The secondary diagnoses assigned to those with epilepsy or status epilepticus as a primary diagnosis, fell into two categories: conditions which may have increased the risk of epilepsy (e.g. cerebral palsy, congenital anomalies); and acute concurrent illnesses such as respiratory and viral infections. • Admissions were highest during the first four years, with rates declining during childhood, to reach their lowest point at 14 years. Rates then increased slightly, to reach a plateau in those in their late teens–early twenties. Mortality during 2006–2010 occurred across the age range, although rates were generally higher in the early 20s, than in late childhood. • Admissions were <i>significantly</i> higher for males and for Māori and Pacific children and young people, than for European/Other and Asian/Indian children and young people. 	<ul style="list-style-type: none"> • In the South Island DHBs during 2008–2012, around 3/4 (range 67.1%–80.0%) of all hospital admissions in children and young people with epilepsy or status epilepticus had an epilepsy-related primary diagnosis. In all South Island DHBs, generalised idiopathic epilepsy and unspecified epilepsy were the most frequent primary diagnoses in those admitted with epilepsy or status epilepticus. • During this period, 96 Nelson Marlborough, 46 South Canterbury, 404 Canterbury, 27 West Coast, 157 Otago and 134 Southland children and young people were hospitalised with a diagnosis of epilepsy or status epilepticus. Admission rates per 100,000 in Southland were <i>significantly</i> higher than the NZ rate, while in South Canterbury, Canterbury, the West Coast and Otago rates were <i>significantly</i> lower. While also lower, rates in Nelson Marlborough were not <i>significantly</i> different from the NZ rate.

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
	Cancer	<ul style="list-style-type: none"> • During 2002–2011, acute lymphoblastic leukaemia (ALL) was the most frequent malignant neoplasm notified to the NZ Cancer Registry in children and young people aged 0–24 years, followed by malignant melanoma of the skin. Carcinoma in situ of the cervix however, was the most frequent reason for a NZ Cancer Registry notification, accounting for 61.3% of all notifications during this period. • During 2001–2010, cancers of the brain were the leading cause of cancer mortality in children and young people aged 0–24 years, followed by acute lymphoblastic leukaemia. 	<ul style="list-style-type: none"> • In the South Island DHBs during 2002–2011, malignant melanomas of the skin and ALL were the most frequent malignant neoplasms notified to the NZ Cancer Registry in children and young people. Hodgkin Disease and cancers of the brain, testes, bone and cartilage, and connective and soft tissues also made a contribution. Carcinoma in situ of the cervix however, was the most frequent reason for a NZ Cancer Registry notification in all South Island DHBs • In the South Island DHBs during 2001–2010, ALL and cancers of the brain and bone and cartilage were the leading causes of cancer related mortality in children and young people.

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
Obesity, Nutrition and Physical Activity			
Overweight and Obesity	Distribution of Overweight and Obesity: NZ Health Surveys	<ul style="list-style-type: none"> The proportion of NZ children aged 2–14 years who were obese increased <i>significantly</i> between NZ Health Surveys, with rates rising from 8.4% (95% CI 7.5–9.4) in 2006/07, to 10.3% (95% CI 8.9–11.9) in 2011/12. In the children’s component of the 2011/12 NZHS, there were no <i>significant</i> differences in obesity by age. Rates were 9.2% (95% CI 6.5–12.5) in those 2–4 years, 10.6% (8.6–12.9) in those 5–9 years and 10.8% (95% CI 8.7–13.2) in those 10–14 years. In the adult survey, obesity rates were <i>significantly</i> higher for those 18–24 years (22.9% (95% CI 19.6–26.6%)) than for those 15–17 years (12.0% (95% CI 8.0–17.2)). In the 2011/12 NZHS, there were no <i>significant</i> gender differences in the proportion of children age 2–14 years who were obese, once rates were adjusted for age. Māori children however were 2.10 (95% CI 1.64–2.68) times more likely to be obese than non-Māori children, while Pacific children were 3.08 (95% CI 2.41–3.93) times more likely to be obese than non-Pacific children, once rates were adjusted for age and gender. There were no <i>significant</i> differences, in obesity rates between Asian and non-Asian children. Children living in the most deprived (NZDep06 deciles 9–10) areas were 2.33 (95% CI 1.37–3.93) times more likely to be obese than children in the least deprived (NZDep06 deciles 1–2) areas, once adjusted for age, sex and ethnic group. 	<ul style="list-style-type: none"> When broken down by region, the proportion of children aged 2–14 years in the Southern region who were obese did not increase significantly between NZ Health Surveys, with rates being 7.2% (95% CI 4.8–10.2) in 2006/07 and 7.4% (95% CI 4.7–10.9) in 2011/12.
	Distribution of Overweight and Obesity: Youth’12	<ul style="list-style-type: none"> In the Youth’12 survey, 24.1% (95% CI 22.8–25.4) of students were overweight, and 12.6% (95% CI 10.1–15.1) obese, as compared to the Youth’07 survey where 24.2% (95% CI 22.7–25.6) were overweight and 10.4% (95% CI 8.8–11.9) obese. In Youth’12 there were no <i>significant</i> gender, age (by single year of age), or rural/urban differences in the proportion of students that were overweight or obese. However, the proportion of students who were overweight or obese was <i>significantly</i> higher for those from the most deprived (NZDep deciles 8–10) areas, than for those from the least deprived (NZDep06 deciles 1–3) areas. 	

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
Overweight and Obesity	Consequences of Obesity: Type 2 Diabetes	<ul style="list-style-type: none"> • During 2008–2012, 21.2% of hospitalisations for children and young people with type 2 diabetes had diabetes listed as the primary diagnosis. The remaining 78.8% were for other conditions including pregnancy and childbirth, skin infections and respiratory diseases. • Hospitalisations were infrequent during childhood, but increased thereafter, with the highest rates being seen in those in their early 20s. • Rates were also <i>significantly</i> higher for females and for Pacific > Māori > Asian/Indian and European/Other children and young people. Similar ethnic differences were seen during 2000–2012, with rates increasing for Pacific and Māori children and young people during this period. 	<ul style="list-style-type: none"> • In the South Island during 2008–2012, 3 Nelson Marlborough, 3 South Canterbury, 27 Canterbury, <3 West Coast, 7 Otago and 7 Southland children and young people were hospitalised with a diagnosis of type 2 diabetes. • Admission rates per 100,000 in Nelson Marlborough, Canterbury, Otago and Southland were <i>significantly</i> lower than the NZ rate, while in South Canterbury, while lower, rates were not <i>significantly</i> different from the NZ rate. In the West Coast small numbers prevented a valid comparison.
	Consequences of Obesity: Slipped Upper Femoral Epiphysis (SUFE)	<ul style="list-style-type: none"> • During 2008–2012, 96.3% of admissions in children and young people 0–24 years with SUFE in any of their first 15 diagnoses had SUFE listed as the primary reason for admission. • Of the 748 SUFE admissions during 2008–2012, 705 (94.3%) were acute or arranged (<7 days of referral) admissions, while 43 (5.7%) were from the waiting list. • 95.9% of SUFE admissions also had a primary procedure recorded, with closed reductions of a SUFE (47.6%) and epiphysiodesis of the femur (21.5%) being the most frequently listed primary procedures. • SUFE admissions were infrequent during early childhood, but increased rapidly after eight years of age. Admissions reached a peak at 11 years in females and 12 years in males, before declining again during the early-mid teens. • There were no <i>significant</i> gender differences in SUFE rates, although rates were <i>significantly</i> higher for Pacific and Māori > European/Other > Asian/Indian children and young people. 	<ul style="list-style-type: none"> • In the South Island during 2008–2012, 10 Nelson Marlborough, 6 South Canterbury, 46 Canterbury, 12 Otago and 16 Southland children and young people were hospitalised with a slipped upper femoral epiphysis. • Admission rates per 100,000 in Nelson Marlborough, Canterbury and Otago were <i>significantly</i> lower than the NZ rate, while in South Canterbury and Southland rates were not <i>significantly</i> different. There were no admissions for SUFE in the West Coast during this period.

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
Overweight and Obesity	Consequences of Obesity: Bariatric Surgery	<ul style="list-style-type: none"> • During 2008–2012, obesity was the most frequent primary diagnosis in young people aged 15–24 years admitted for bariatric surgery, accounting for 65.9% of admissions. Type 2 diabetes and mechanical complications of gastrointestinal prosthetic devices made a smaller contribution. • Laparoscopic gastric reductions (41.5%) were the most frequent primary procedure listed in young people admitted for bariatric surgery, followed by gastric bypasses (29.3%). • Admissions in young people increased from 0.5 admissions per year in 2000–01, to 10 per year during 2010–2012. • Admissions were infrequent during the early teens, but increased thereafter, with the highest rates being seen in those in their early twenties. • While admissions were higher for Pacific > European/Other > Māori young people, these differences did not reach statistical significance. Admission rates however, were <i>significantly</i> higher for females than for males 	<ul style="list-style-type: none"> • In the South Island during 2008–2012, there were 11 admissions (South Canterbury <3; Canterbury 3; Otago <3; Southland 4) for bariatric surgery in young people aged 15–24 years.
Nutrition and Physical Activity	Breastfeeding and Solids: Breastfeeding in Plunket Babies	<ul style="list-style-type: none"> • During the years ending June 2006–2012, the proportion of Plunket babies who were exclusively or fully breastfed remained relatively static. Exclusive/full breastfeeding rates in the year ending June 2012 were 66.1% at <6 weeks, 54.6% at 3 months and 24.9% at 6 months of age. • Exclusive/full breastfeeding rates at <6 weeks were higher for European babies than for other ethnic groups. At 3 and 6 months, rates were generally higher European > Asian > Māori and Pacific babies, with differences between Asian and European babies decreasing as the period progressed. • In the year ending June 2012, exclusive/full breastfeeding rates at <6 weeks, 3 months and 6 months were lower for babies from the most deprived (NZDep decile 10) areas, than for babies from average or less deprived areas. 	<ul style="list-style-type: none"> • In the South Island during June 2006–2012, exclusive/full breastfeeding rates at <6 weeks and 3 months in Nelson Marlborough, the West Coast and Otago were generally higher than the NZ rate, while in the remaining DHBs rates were similar. DHB vs. NZ differences at 6 months were more variable • In all of the South Island DHBs except the West Coast, breastfeeding rates at all three ages were higher for European than for Māori babies. In the West Coast, ethnic specific rates were more variable, possibly as the result of small numbers. • In all of the South Island DHBs during the year ending June 2012, exclusive/full breastfeeding rates at <6 weeks and 3 months were lower for babies living in the most deprived (NZDep decile 10) areas, than for babies living in the least deprived (NZDep decile 1) areas. Differences at 6 months were less consistent however.

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
Nutrition and Physical Activity	Breastfeeding and Solids: Babies Given Solids at <4 Months of Age	<ul style="list-style-type: none"> The proportion of children 4 months–4 years given solid food at <4 months of age decreased significantly ($p=0.00$) between NZ Health Surveys, with rates falling from 15.8% (95% CI 13.7–18.1) in 2006/07, to 9.5% (95% CI 7.9–11.4) in 2011/12. In the 2011/12 NZHS, Māori children were 2.23 (95% CI 1.56–3.19) times more likely to be given solid food <4 months than non-Māori children, while Pacific children were 1.67 (95% CI 1.09–2.56) times more likely to be given solid food <4 months than non-Pacific children, once rates were adjusted for age and gender. In contrast, Asian children were <i>significantly</i> less likely to be given solid food <4 months (aRR 0.28 (95% CI 0.11–0.68)) than non-Asian children. 	<ul style="list-style-type: none"> When broken down by region, while the proportion of children aged 4 months to 4 years in the Southern region given solid food before four months of age fell, from 15.7% (95% CI 10.8–21.8) in 2006/07, to 9.9% (95% CI 5.9–15.2) in 2011/12, these differences did not reach statistical significance.

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
	Other Nutritional Indicators: NZ Health Surveys	<ul style="list-style-type: none"> • Eating Breakfast at Home: The % of children 2–14 years who ate breakfast at home every day in the last week did not change <i>significantly</i> between NZ Health Surveys. Rates were 87.9% (95% CI 86.6–89.0) in 2006/07 and 87.3% (95% CI 85.7–88.7) in 2011/12. • Māori children were <i>significantly</i> less likely than non-Māori children to eat breakfast at home. Rates were also significantly lower for Pacific than non-Pacific children and for children from the most deprived (NZDep06 deciles 9–10 vs. deciles 1–2) areas. • Fast Food: The % of children 2–14 years who ate fast food 3+ times in the past week did not change <i>significantly</i> between NZ Health Surveys, with rates being 7.2% (95% CI 6.3–8.2) in 2006/07 and 6.5% (95% CI 5.3–7.9) in 2011/12. • Māori children were <i>significantly</i> more likely than non-Māori children to have eaten fast food. Rates were also <i>significantly</i> higher for Pacific than for non-Pacific children. Children from the most deprived areas were also <i>significantly</i> more likely have eaten fast food than children from the least deprived areas. • Fizzy Drinks: The % of children 2–14 years who had consumed fizzy drinks 3+ times in the past week did not change <i>significantly</i> between NZ Health Surveys, with rates being 19.6% (95% CI 18.0–21.2) in 2006/07 and 19.6% (95% CI 17.9–21.4) in 2011/12. • Māori children were <i>significantly</i> more likely than non-Māori children to have consumed fizzy drinks. Rates were also <i>significantly</i> higher for Pacific than for non-Pacific children, for Asian than for non-Asian children and for children from the most deprived areas. 	<ul style="list-style-type: none"> • Eating Breakfast at Home: When broken down by region, there were no significant changes in the proportion of Southern children who ate breakfast at home every day in the last week, between the 2006/07 and 2011/12 NZ Health Surveys. In the 2011/12 NZHS, 90.5% (95% CI 87.0–93.3) of Southern children ate breakfast at home every day in the last week.

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
Nutrition and Physical Activity	Other Nutritional Indicators: Youth'12 Survey	<ul style="list-style-type: none"> • Breakfast: In the Youth'12 Survey, 16.7% (95% CI 15.1–18.2) of secondary students said they hardly ever ate breakfast, with the % of females (20.8% (95% CI 18.4–23.3)) being <i>significantly</i> higher than for males (11.7% (95% CI 10.6–12.8)). • While there were no age differences, a <i>significantly</i> higher proportion of students from the most deprived (NZDep deciles 8–10) areas said they hardly ever ate breakfast, than students from the least deprived (NZDep06 deciles 1–3) areas. • There were no significant urban vs. rural differences in the proportion of students who said they hardly ever ate breakfast • Fruit and Vegetables: In Youth'12, 30.0% (95% CI 28.4–31.6) of students said that they ate 2+fruit and 3+ vegetables per day. • There were no <i>significant</i> gender or age differences in the % of students who ate 2+ fruit and 3+ vegetables per day. Rates were also not <i>significantly</i> different between those in the most and least deprived NZDep06 areas, or urban and rural areas. 	

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
	Physical Activity: Youth'12 Survey	<ul style="list-style-type: none"> • Participation in Physical Activity: In Youth'12, while 61.9% (95% CI 59.9–64.0) of students had participated in >20 minutes vigorous physical activity on 3+ occasions in the past seven days, only 9.6% (95% CI 8.7–10.5) reported achieving the recommended 60+ minutes of physical activity daily. • The proportion of males undertaking >20 minutes vigorous physical activity was <i>significantly</i> higher than for females. Rates were also <i>significantly</i> higher for younger students (≤15 years vs. 16+ years), and for students from less deprived (NZDep06 decile1–3 vs. deciles 8–10) or rural areas. • Travel to School by Active Means: In Youth'12, 32.7% (95% CI 29.5–35.9) of students usually travelled to school by active means (walk, bike or skate) 6+ times in the past seven days. • While there were no <i>significant</i> gender differences in the proportion who usually travelled to school by active means, rates were <i>significantly</i> higher for younger students (≤15 years vs. 17+ years), for students from more deprived (NZDep06 deciles 8–10 vs. decile1–3) or urban areas. • Sedentary Leisure: In Youth'12, 28.2% (95% CI 25.9–30.4) of students spent 3+ hours each day watching TV, while 19.5% (95% CI 17.4–21.7) spent 3+ hours playing computer games, and 34.8% (95% CI 33.2–36.4) spent 3+ hours on the internet. 	

Stream	Indicator	New Zealand Distribution and Trends	South Island Distribution and Trends
Nutrition and Physical Activity	Physical Activity: NZ Health Surveys	<ul style="list-style-type: none"> • Travel to School by Active Means: The % of children aged 5–14 years who usually travelled to school by active means did not change significantly (p=0.51) between NZ Health Surveys, with rates being 46.1% (95% CI 43.3–48.8) in 2006/07 and 47.5% (95% CI 44.2–50.7) in 2011/12. • In the 2011/12 NZHS, once adjusted for age and gender, Māori children were <i>significantly</i> more likely than non-Māori children to travel to school by active means, with rates also being significantly higher for Pacific than for non-Pacific children. • Once adjusted for age, ethnicity and gender, children from the most deprived (NZDep06 deciles 9–10) areas were <i>significantly</i> more likely to travel to school by active means than children in the least deprived (NZDep06 deciles 1–2) areas. • Watching 2+ Hours TV per Day: In the 2011/12 NZHS, children aged 5–9 years (49.1% (95% CI 45.2–53.1)) were <i>significantly</i> less likely to watch 2+ hours of TV per day than children aged 10–14 years (57.8% (95% CI 54.5–60.9)). • Once adjusted for age and gender, Māori children were significantly more likely than non-Māori children to watch 2+ hours of TV per day, with rates also being <i>significantly</i> higher for Pacific children than for non-Pacific children. • Once adjusted for age, ethnicity and gender, children from the most deprived (NZDep06 deciles 9–10) areas were significantly more likely to watch 2+ hours of TV per day than children in the least deprived (NZDep06 deciles 1–2) areas. 	